QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

August 30, 2018

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2155
4 Elkington Farm Road, New Milford, CT 06776
N 41.59111111
W 73.40858333

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 154-foot level of the existing 150-foot Monopole at 4 Elkington Farm Road, New Canaan, CT. The structure is owned by American Tower and the property is owned by Canterbury School Inc.. AT&T now intends to remove three (3) existing antennas and replace them with (2) Kathrein 800-10768 antennas and (1) Kathrein 800-10767 antenna. AT&T also intends to install (3) Ericsson RRUS-32 Remote Radio Units (RRU). The new antennas and RRUs will also be installed at the 154-foot level of the tower.

This facility was approved by the Connecticut Siting Council in Docket # 138.2 on November 26, 1990. The Decision and Order included a condition limiting the tower height to 162 feet AGL. Since no change to the overall height of the tower or antennas is proposed, this modification therefore complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 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 Honorable Pete Bass, Mayor of the Town of New Milford, as well as the property owner and the

tower owner.

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

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

2. The proposed modifications will not require the 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 replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

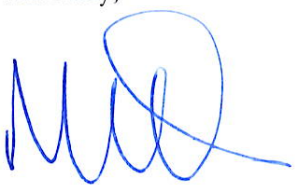
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Pete Bass- as elected official
Kathy Castagnetta, AICP – Town Planner
Canterbury School Inc - as property owner
American Tower - as structure owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							3.62%
AT&T GSM	1	142	154	0.0023	880	0.5867	0.04%
AT&T UMTS	2	296	154	0.0049	880	0.5867	0.08%
AT&T UMTS	1	525	154	0.0086	1900	1.0000	0.09%
AT&T LTE	1	1476	154	0.0485	734	0.4893	0.99%
AT&T LTE	2	3664	154	0.0086	1900	1.0000	1.20%
Site Total							5.61%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							3.62%
AT&T UMTS	1	296	154	0.0049	850	0.5667	0.09%
AT&T LTE	2	2951	154	0.0969	700	0.4667	2.08%
AT&T LTE / 5G	2	1000	154	0.0328	850	0.5667	0.58%
AT&T LTE	2	3664	154	0.1203	1900	1.0000	1.20%
AT&T LTE	1	1285	154	0.0211	2300	1.0000	0.21%
Site Total							7.78%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Note: Proposed Loading may also include corrections to certain Existing Loading values

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING TOWER: • NEW AT&T ANTENNAS (800-10768) @ POS. 3 (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2). • NEW AT&T ANTENNAS (800-10767) @ POS. 3 (TOTAL OF 1 FOR GAMMA SECTOR). • NEW AT&T RRUS: RRUS 32 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T ANTENNAS MOUNTED @ POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3) TO BE RELOCATED @ POSITION 4. • PROPOSED SURGE ARRESTOR (DC6-48-60-18-8C) MOUNTED ON EXISTING PIPE MAST (TOTAL OF 1) WITH (2) DC POWER, & (1) FIBER RUN. • PROPOSED LOW BAND COMBINERS (DBCT108F1V92-1) (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • PROPOSED EQUIPMENT RACK FOR RRUS. • PROPOSED ADD RRUS 4478 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • PROPOSED ADD RRUS 4478 B14 (700) (TYP. OF 1 SHARED BETWEEN BETA & GAMMA SECTOR, AND 1 FOR ALPHA SECTOR, TOTAL OF 2). • REPLACE GSM DIPLEXERS WITH LBCS. • SWAP BB WITH 5216 & ADD 6630. • ADD (24) (TSXDC-4310FM) POLYPHASERS. • SWAP 6U FOR 12U & ADD 2ND 12U. • ADD (1) XMU. • BASEBAND CONFIGURATION AS PER PD / SECTION-7. ITEMS TO REMAIN: • (6) ANTENNAS, (6) RRU'S (RELOCATED BEHIND ANTENNAS), (3) TWIN TMA'S, (1) SURGE ARRESTOR, (12) COAX CABLES, (2) DC POWER & (1) FIBER RUN.
SITE ADDRESS:	4 ELKINGTON FARM ROAD NEW MILFORD, CT 06776
LATITUDE:	41.590853 N, 41° 35' 27.07" N
LONGITUDE:	73.408581 W, 73° 24' 30.89" W
TYPE OF SITE:	MONOPOLE / EQUIPMENT SHELTER
STRUCTURE HEIGHT:	153'±
RAD CENTER:	154'±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT2155

SITE NAME: NEW MILFORD

FA CODE:10035014

PACE ID: MRCTB018291, MRCTB012156, MRCTB012160

PROJECT: LTE 3C/4C/5C 2018 UPGRADE

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
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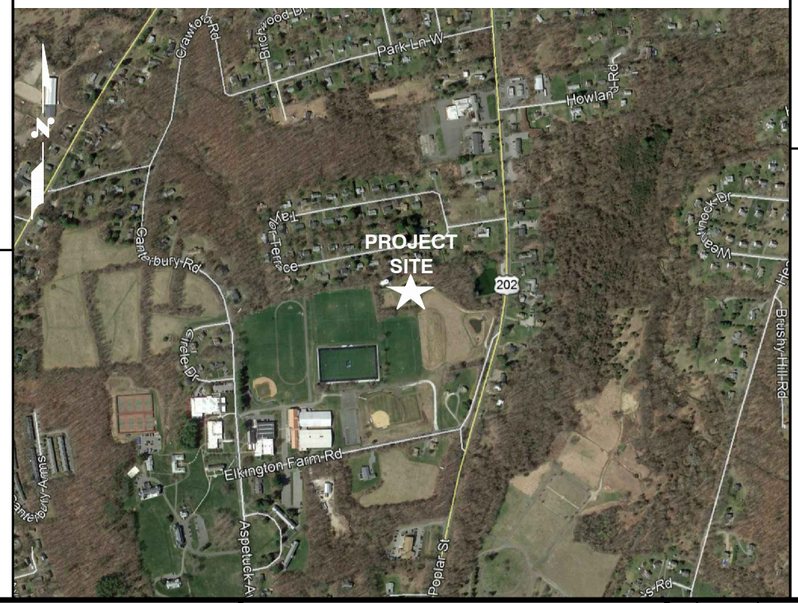
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

AMERICAN TOWER SITE#: 302523
AMERICAN TOWER SITE NAME: NEW MILFORD CT2

VICINITY MAP

DIRECTIONS TO SITE:

RT. 84 EAST. TAKE 84 EAST TO EXIT 7(LEFT HAND EXIT) WHICH WILL BE RT. 7 & 202, CONTINUE UNTIL THIS ROAD ENDS AT A LIGHT, GO RIGHT, THIS IS THE CONTINUATION OF 7 & 202. FOLLOW RT. 7 NORTH AND THEN YOU WILL END UP TURNING RIGHT ONTO ROUTE 202 EAST. FOLLOW THIS THROUGH TOWN AND GO PAST NEW MILFORD HOSPITAL. GO ABOUT 1 MORE MILE AND YOU WILL SEE THE SITE ON YOUR LEFT UP IN THE FIELD.



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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
ATC SITE #: 302523
4 ELKINGTON FARM ROAD
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LITCHFIELD COUNTY

500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	07/06/18	ISSUED FOR REVIEW	ET	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 21455 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	T-1	1

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) 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 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 AWS 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 – SAI
   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. TOUCHUP 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 2012 WITH 2016 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS

    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-G, 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	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
ATC SITE #: 302523
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

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

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

STATE OF CONNECTICUT
DEREK J. CREASER
16,285
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	GN-1	1

NOTE:

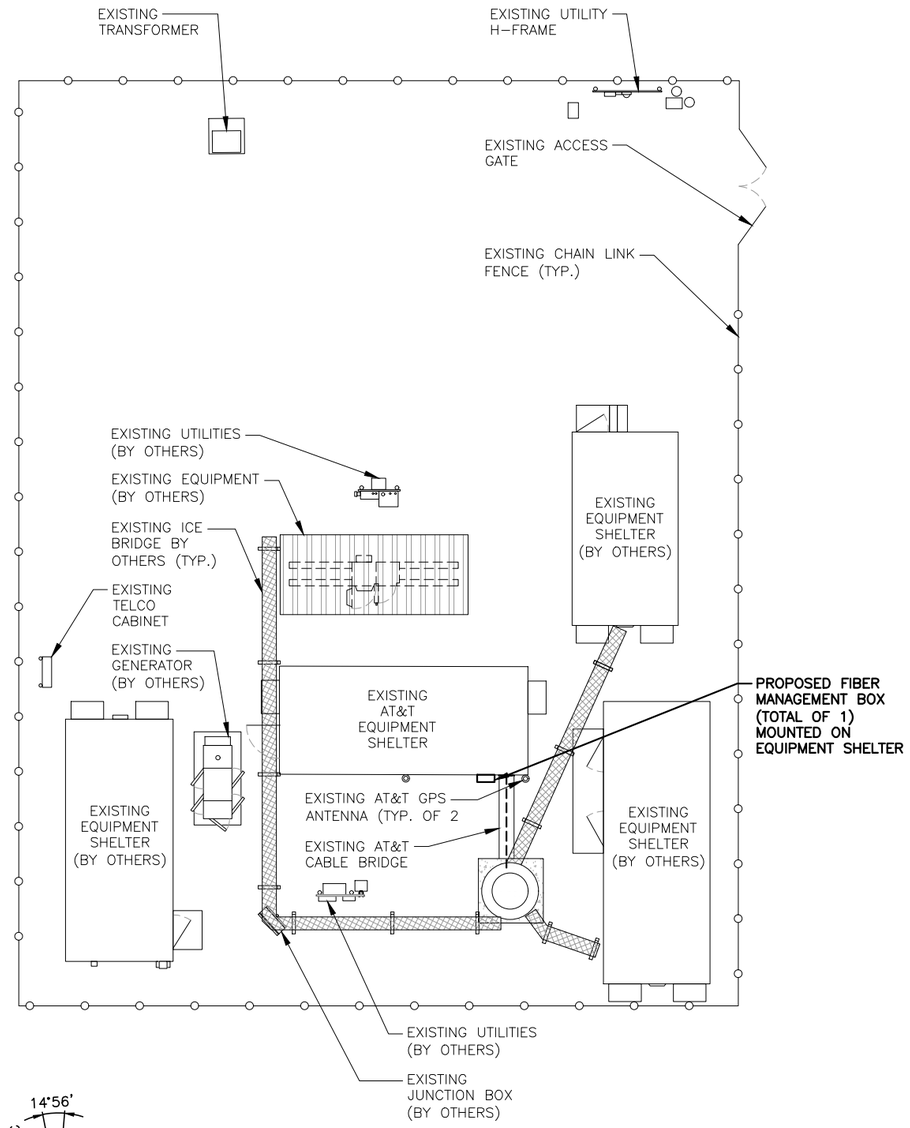
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWERS AND FINAL AT&T RF DATA SHEET.

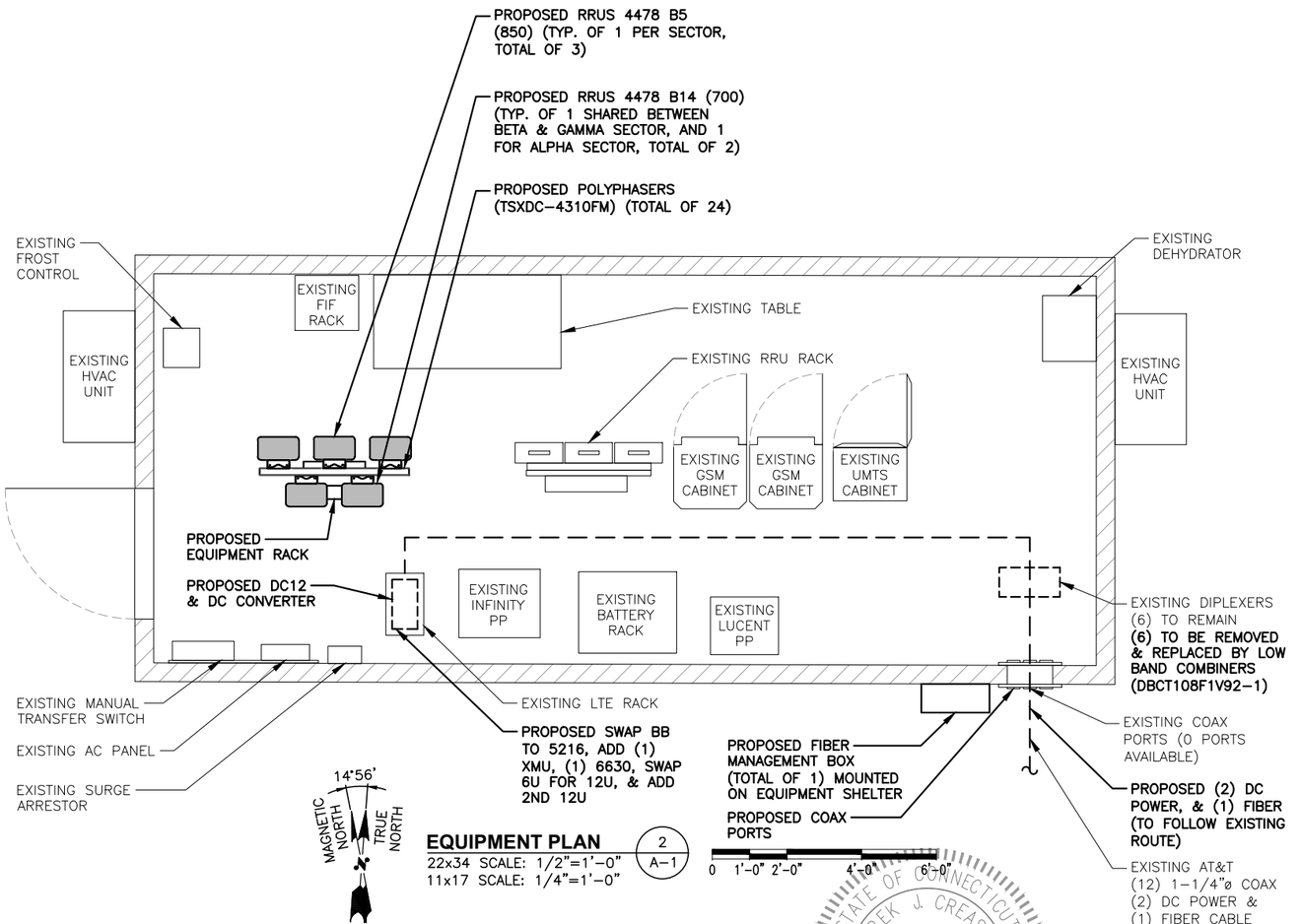
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: AUGUST 31, 2018 (REV1)



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

0 4'-0" 8'-0" 16'-0" 24'-0"



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

0 1'-0" 2'-0" 4'-0" 6'-0"

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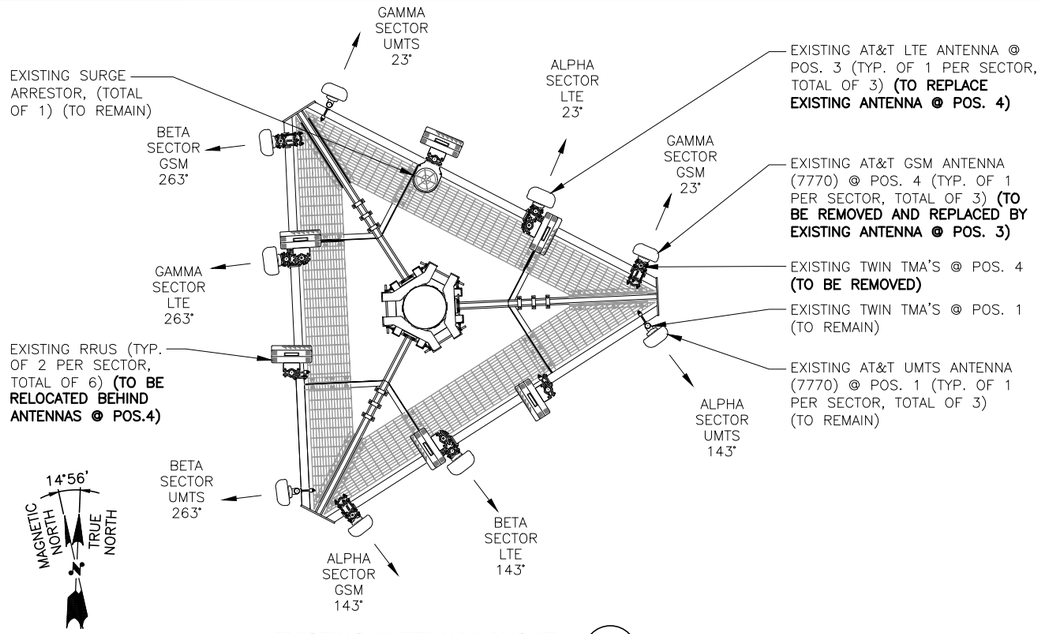
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28954 · LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLAN
(LTE 3C/4C/5C)

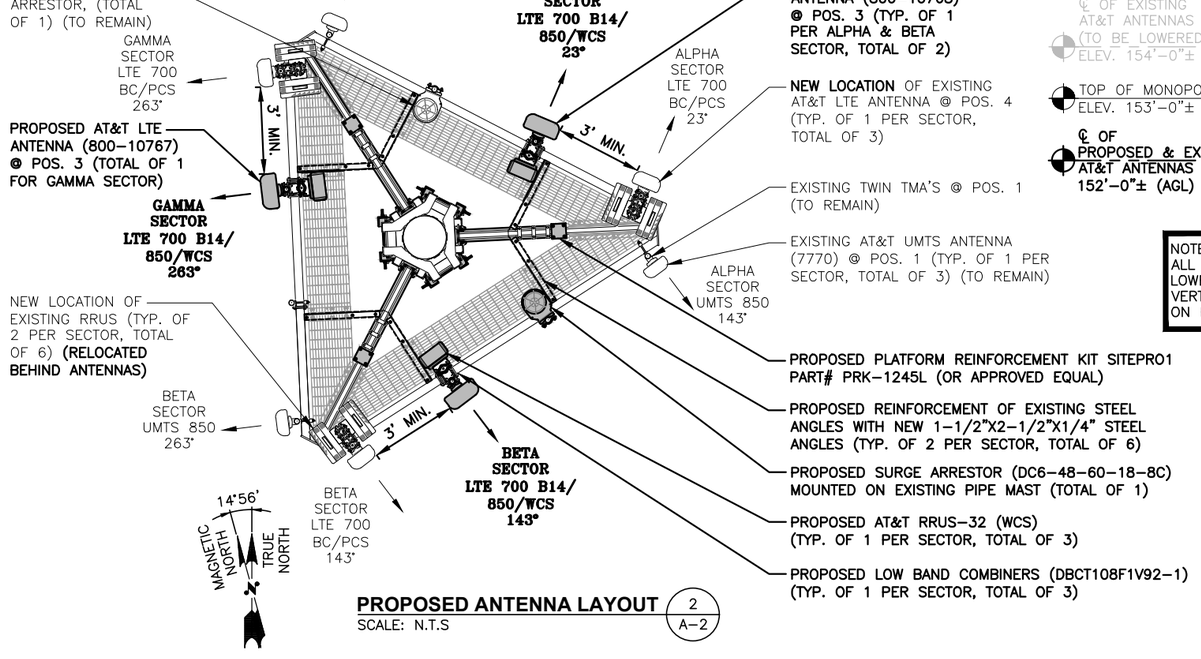
SITE NUMBER	DRAWING NUMBER	REV
CT2155	A-1	1



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

(1 / A–2)



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

(2 / A–2)

NOTE:

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

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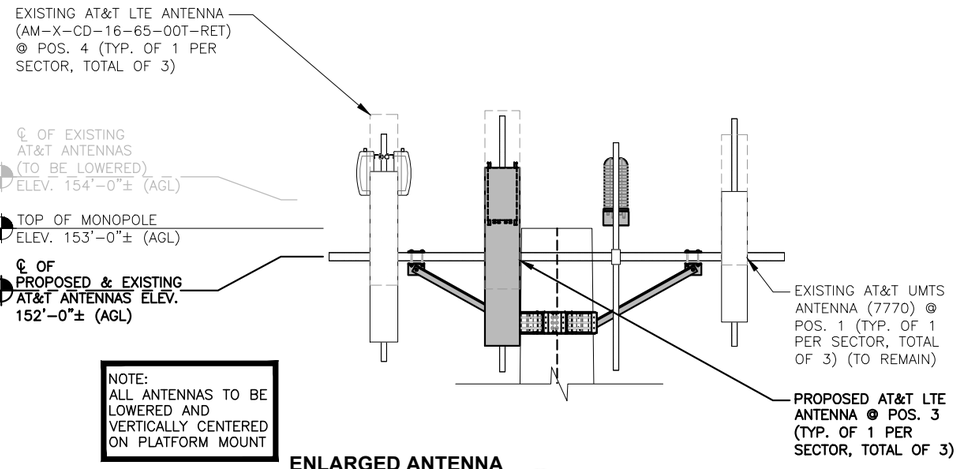
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: AUGUST 31, 2018 (REV1)



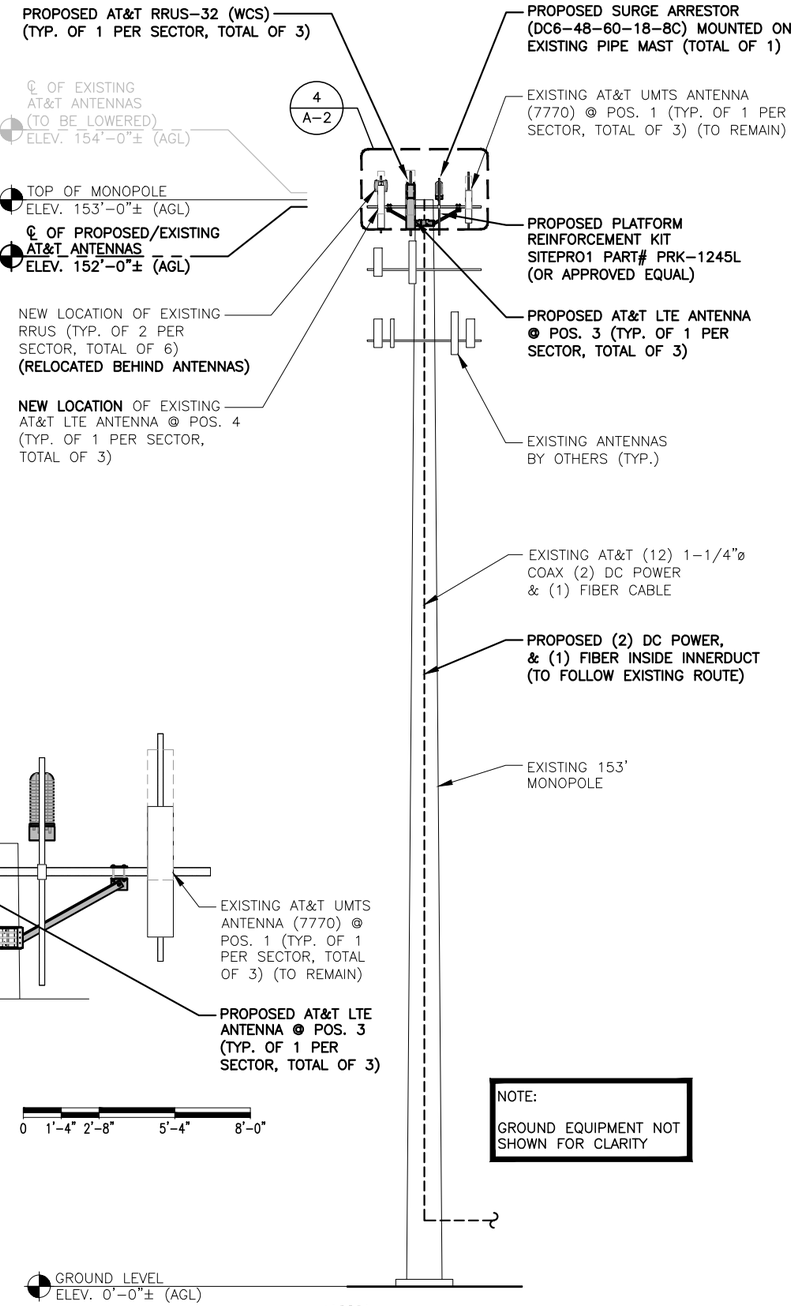
NOTE:
ALL ANTENNAS TO BE LOWERED AND VERTICALLY CENTERED ON PLATFORM MOUNT

ENLARGED ANTENNA ELEVATION

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

(4 / A–2)

0 1'–4" 2'–8" 5'–4" 8'–0"



NOTE:

GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION

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

(3 / A–2)

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
ATC SITE #: 302523
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/07/18	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	07/06/18	ISSUED FOR REVIEW	ET	AT	DJC

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

STATE OF CONNECTICUT — No. 28055 — LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION (LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	A–2	1

NOTE:

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

NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWERS AND FINAL AT&T RF DATA SHEET.

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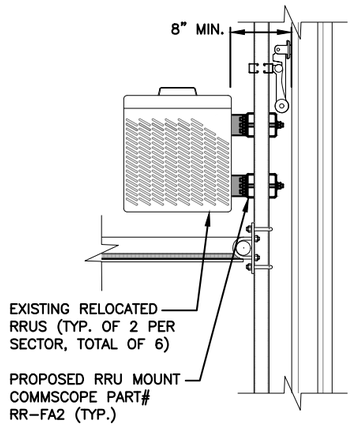


PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL

1 / A-3

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

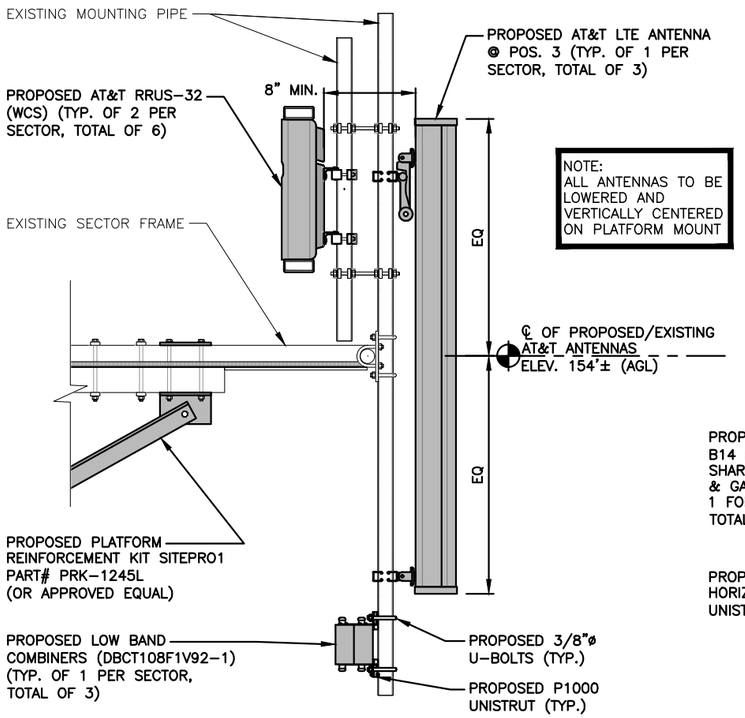
ANTENNA SCHEDULE

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	EXISTING	UMTS 850	7770	54.5X10.3X5.9	154'±	143°	POWERWAVE (1) TT19-08BP111-001	--	--	(2) 1-1/4 COAX (LENGTH 170'±)	(E) (1) RAYCAP DC6-48-60-18-8C
A2	--	--	--	--	--	--	--	--	--	--	
A3	**PROPOSED**	**LTE 700 B14/850/WCS**	**800-10768**	**75.2X14.8X6.7**	**154'±**	**23°**	**KAELUS (P) (1) DBCT108F1V92-1**	**(P)(G) (1) RRUS B14 4478 (P)(G) (1) RRUS 4478 B5 (P) (1) RRUS-32 WCS**	**15X13.2X7.4 15X13.2X7.4 27.2X12.1X7.0**	(2) 1-1/4 COAX (LENGTH 170'±)	
A4	EXISTING	LTE 700 BC/PCS	AM-X-CD-16-65-00T-RET	72X11.8X5.9	154'±	23°	--	(E) (1) RRUS-11 (E) (1) RRUS-12	- -	--	
B1	EXISTING	UMTS 850	7770	54.5X10.3X5.9	154'±	263°	POWERWAVE (1) TT19-08BP111-001	--	--	(2) 1-1/4 COAX (LENGTH 170'±)	(P) (1) RAYCAP DC6-48-60-18-8C
B2	--	--	--	--	--	--	--	--	--	--	
B3	**PROPOSED**	**LTE 700 B14/850/WCS**	**800-10768**	**75.2X14.8X6.7**	**154'±**	**143°**	**KAELUS (P) (1) DBCT108F1V92-1**	**(P)(G) (1) RRUS B14 4478 (P)(G) (1) RRUS 4478 B5 (P) (1) RRUS-32 WCS**	**15X13.2X7.4 15X13.2X7.4 27.2X12.1X7.0**	(2) 1-1/4 COAX (LENGTH 170'±)	
B4	EXISTING	LTE 700 BC/PCS	AM-X-CD-16-65-00T-RET	72X11.8X5.9	154'±	143°	--	(E) (1) RRUS-11 (E) (1) RRUS-12	- -	--	
C1	EXISTING	UMTS 850	7770	54.5X10.3X5.9	154'±	23°	POWERWAVE (1) TT19-08BP111-001	--	--	(2) 1-1/4 COAX (LENGTH 170'±)	SHARED
C2	--	--	--	--	--	--	--	--	--	--	
C3	**PROPOSED**	**LTE 700 B14/850/WCS**	**800-10767**	**57X14.8X6.7**	**154'±**	**263°**	**KAELUS (P) (1) DBCT108F1V92-1**	**(P)(G) (1) RRUS 4478 B5 (P) (1) RRUS-32 WCS**	**15X13.2X7.4 27.2X12.1X7.0**	(2) 1-1/4 COAX (LENGTH 170'±)	
C4	EXISTING	LTE 700 BC/PCS	800-10764	55.2X11.8X6	154'±	263°	--	(E) (1) RRUS-11 (E) (1) RRUS-12	- -	--	

FINAL ANTENNA SCHEDULE

2 / A-3

SCALE: N.T.S



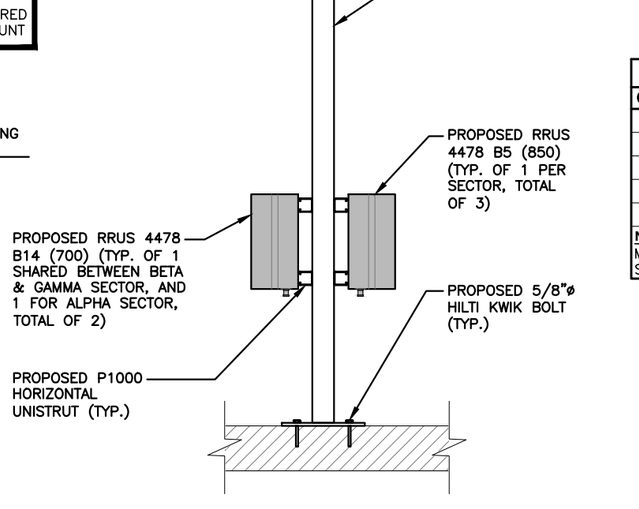
NOTE:
ALL ANTENNAS TO BE LOWERED AND VERTICALLY CENTERED ON PLATFORM MOUNT

PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL

3 / A-3

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED EQUIPMENT RACK DETAIL

4 / A-3

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

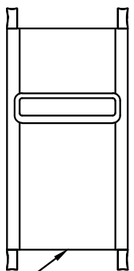
RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
3(P)	RRUS-32	27.2"	12.1"	7.0"
3(E)	RRUS-12	20.4"	18.5"	7.5"
2(P)(G)	B14.4478	15.0"	13.2"	7.4"
3(P)(G)	B5.4478	15.0"	13.2"	7.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



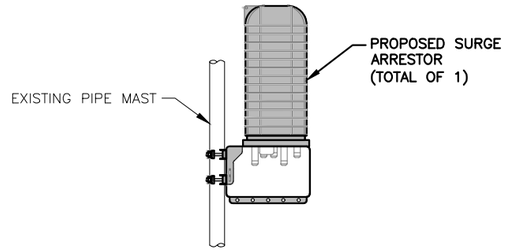
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL

5 / A-3

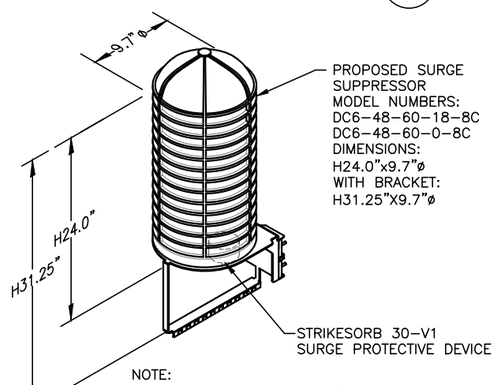
SCALE: N.T.S



PROPOSED SURGE ARRESTOR MOUNTING DETAIL

7 / A-3

SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

6 / A-3

SCALE: N.T.S

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SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT DEREK J. CHAMPAGNE No. 23551 LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	A-3	1

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-70 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

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12 INDUSTRIAL WAY
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SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
ATC SITE #: 302523
4 ELKINGTON FARM ROAD
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LITCHFIELD COUNTY

at&t
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A	07/06/18	ISSUED FOR REVIEW	ET	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 28587 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL NOTES
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	SN-1	1

NOTE:

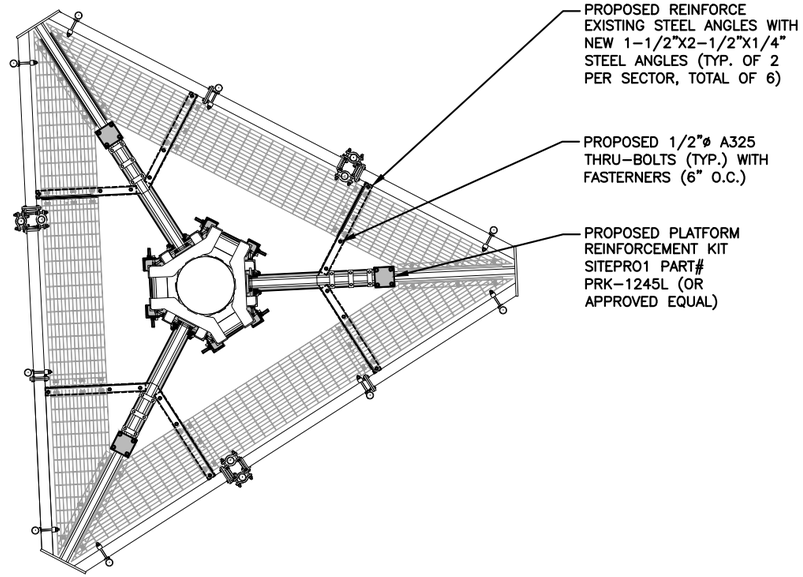
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

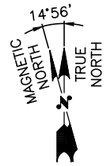
NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWERS AND FINAL AT&T RF DATA SHEET.

NOTE:

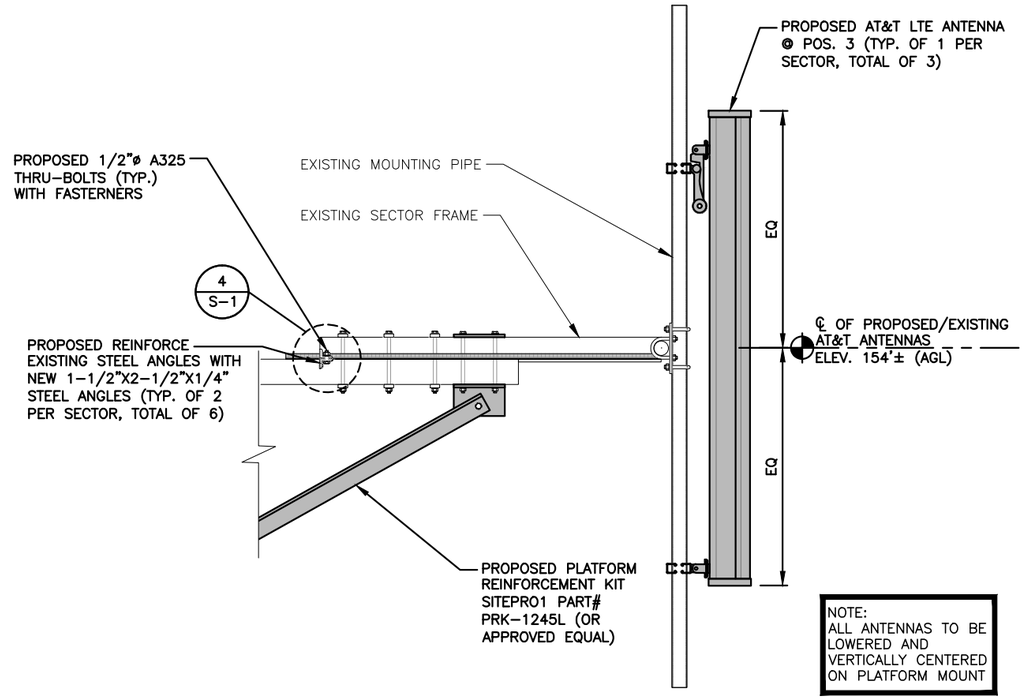
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: AUGUST 31, 2018 (REV1)





PROPOSED REINFORCEMENT PLAN (1 / S–1)
22x34 SCALE: 1/2"=1'–0"
11x17 SCALE: 1/4"=1'–0"

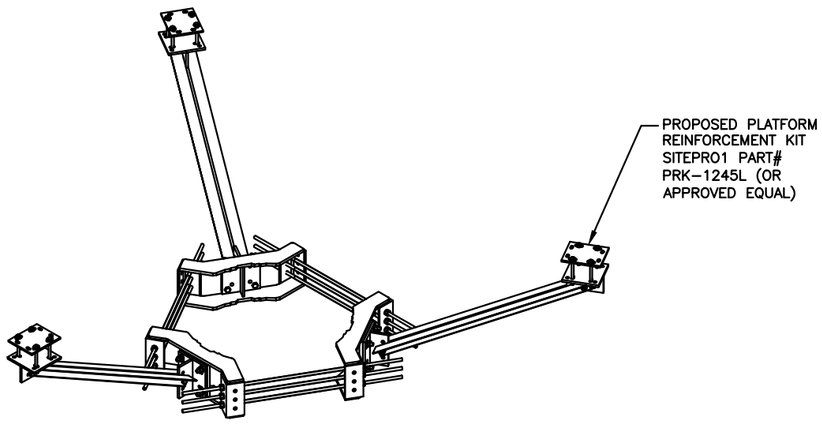
0 1'–0" 2'–0" 4'–0" 6'–0"



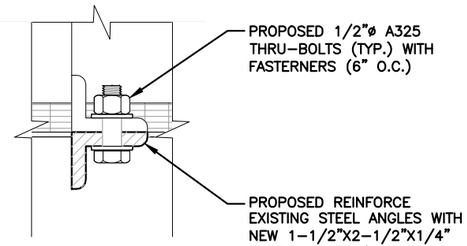
NOTE:
ALL ANTENNAS TO BE LOWERED AND VERTICALLY CENTERED ON PLATFORM MOUNT

PROPOSED MOUNT MODIFICATION DETAIL (2 / S–1)
22x34 SCALE: 1"=1'–0"
11x17 SCALE: 1/2"=1'–0"

0 0'–6" 1'–0" 2'–0" 3'–0"



PROPOSED PLATFORM REINFORCEMENT MOUNT DETAIL (3 / S–1)
SCALE: N.T.S



CONNECTION DETAIL (4 / S–1)
24x34 SCALE: 6"=1'–0"
11x17 SCALE: 3"=1'–0"

0 0'–1" 0'–2" 0'–4" 0'–6"

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2155
SITE NAME: NEW MILFORD
ATC SITE #: 302523
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/07/18	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	07/06/18	ISSUED FOR REVIEW	ET	AT	DJC

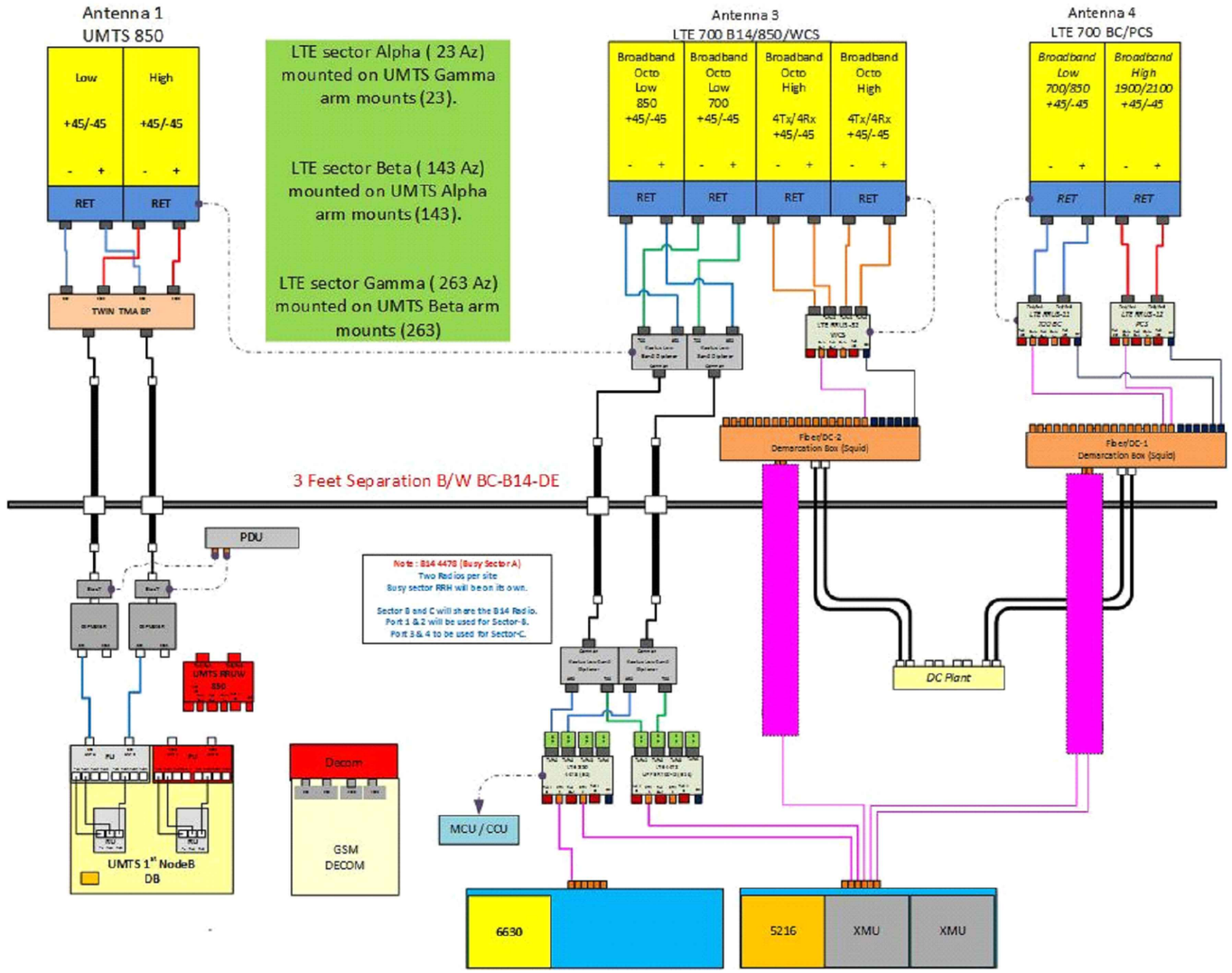
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28554 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL DETAILS
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	S–1	1



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.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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12 INDUSTRIAL WAY
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SITE NUMBER: CT2155
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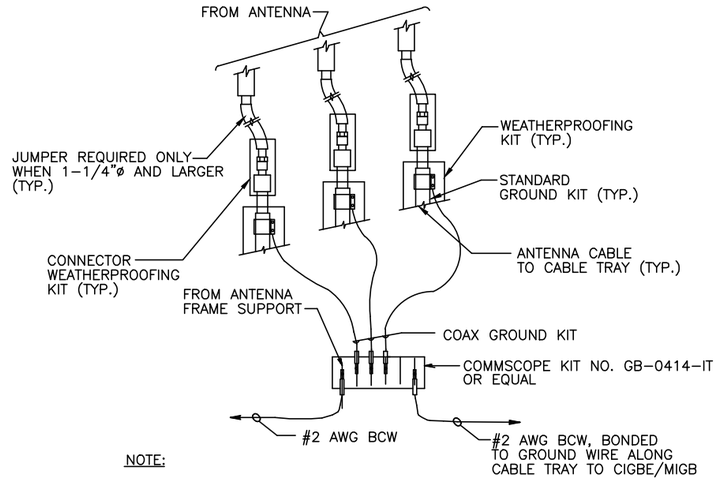
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28554 · LICENSED PROFESSIONAL ENGINEER

AT&T

RF PLUMBING DIAGRAM
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	RF–1	1



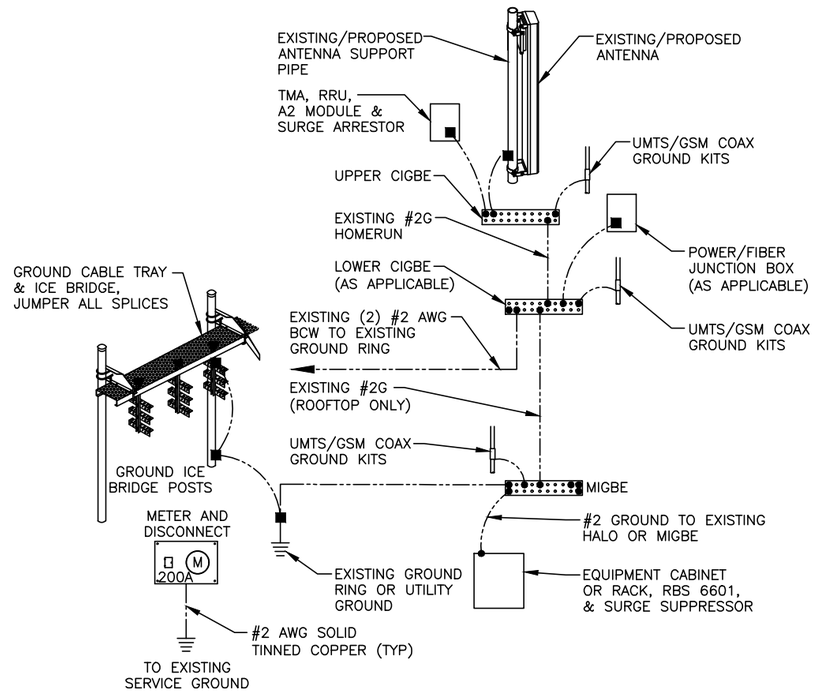
NOTE:

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

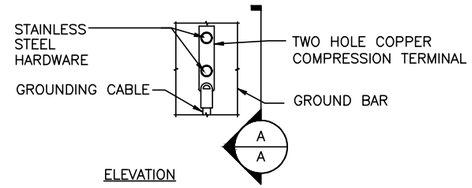
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTE:

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

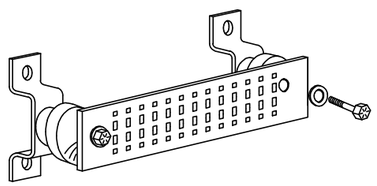
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G-1

HUDSON Design Group LLC
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NORTH ANDOVER, MA 01845
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SAI
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

DEREK J. CREASER — No. 23557 — STATE OF CONNECTICUT — LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 3C/4C/5C)

SITE NUMBER	DRAWING NUMBER	REV
CT2155	G-1	1

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**New Milford CT 2, CT**
ATC Site Number	:	**302523**
Engineering Number	:	**OAA737030_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**New Milford**
Carrier Site Number	:	**CT2155**
Site Location	:	**4 Elkington Farm Rd** **New Milford, CT 06776-2909** **41.590861,-73.408600**
County	:	**Litchfield**
Date	:	**July 24, 2018**
Max Usage	:	**94%**
Result	:	**Pass**

Prepared By:
Felix Buabeng
Structural Engineer I

Reviewed By:

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion 1

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Proposed Equipment 2

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Standard Conditions 4

Calculations ..... Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	ITT Meyer per AT&T Design Spec. AT-8935, dated April 13, 1984
Foundation Drawing	SNET Job #3C239, dated April 20, 1990
Geotechnical Report	JSEC Job #14974-NM, dated January 28, 2002
Modifications	Scientel CMS Modification Drawings, dated March 7, 2002 ATC Project #41658239, dated December 22, 2008 ATC Project #50496632, dated October 22, 2012 ATC Job #OAA682215_C6_04, dated September 19, 2016 ATC Job #OAA707682_C6_05, dated December 28, 2017

Analysis

The tower was analyzed using tnxTower version 8.0.2.1 analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust V_{ASD}) / 120 mph (3-Second Gust V_{ULT})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.07
Site Class:	D - Stiff Soil

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

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	1	Andrew ABT-DFDM-ADB	Low Profile Platform w/ SitePro Reinforcement Kit	(12) 1 1/4" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 3" conduit	AT&T Mobility
		3	Powerwave TT19-08BP111-001			
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson RRUS-12 B2			
		3	Powerwave 7770.00A			
		2	KMW AM-X-CD-16-65-00T-RET			
143.0	145.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Platform w/ Handrails	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4X45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	143.0	3	RFS RFS APXV9TM14-ALU-I20			
		3	RFS APXVSPP18-C-A20			
132.0	132.0	3	Alcatel-Lucent B66A RRH 4x45	Low Profile Platform	(6) 1 5/8" Coax (2) 1.58" Hybrid	Verizon
		2	RFS DB-T1-6Z-8AB-0Z			
		4	Antel LPA-80080/6CF ___			
		3	Nokia B5 RRH4x40-850			
		3	Alcatel-Lucent B25 RRH4x30			
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		6	Commscope JAHH-65B-R3B			
		2	Antel LPA-80063/6CF			
75.0	75.0	1	PCTEL GPS-TMG-HR-26N	Flush	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	3	Powerwave 7770.00A	-	-	AT&T Mobility
		1	KMW AM-X-CD-16-65-00T-RET			
		3	Powerwave TT19-08BP111-001			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	2	Raycap DC6-48-60-18-8F	Low Profile Platform w/ SitePro Reinforcement Kit	(2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk	AT&T Mobility
		3	Ericsson RRUS 32 B2			
		1	Kathrein Scala 800 10764			
		1	Kathrein Scala 80010767			
		3	Kaleus DBCT108F1V92-1			
		2	Kathrein Scala 80010768			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	72%	Pass
Shaft	94%	Pass
Base Plate	38%	Pass
Flanges	93%	Pass
Reinforcement	53%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,578.0	78%
Axial (Kips)	45.0	18%
Shear (Kips)	24.0	26%

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 (in)	Sway (Rotation) (°)
150.0	Raycap DC6-48-60-18-8F	AT&T Mobility	16.923	1.570
	Ericsson RRUS 32 B2			
	Kathrein Scala 800 10764			
	Kathrein Scala 80010767			
	Kaleus DBCT108F1V92-1			
	Kathrein Scala 80010768			

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

Standard Conditions

All engineering services performed by ATC Tower Services LLC 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 ATC Tower Services LLC

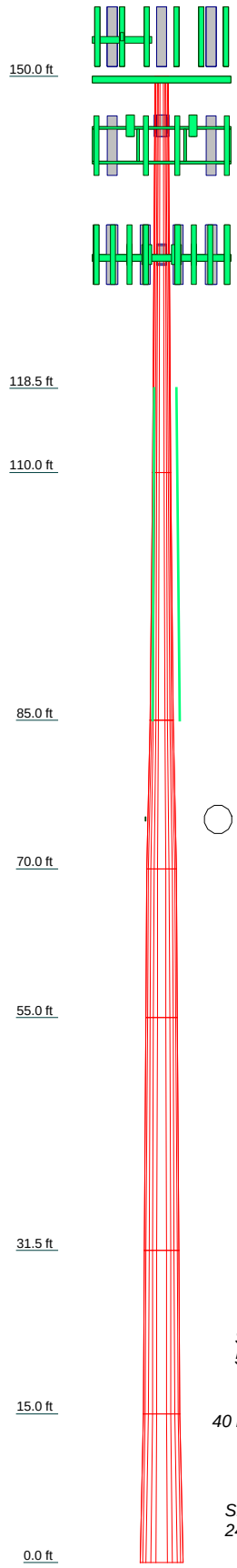
It is the responsibility of the client to ensure that the information provided to ATC Tower Services LLC and used in the performance of our engineering services is correct and complete.

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 ATC Tower Services LLC, 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. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Section	1	2	3	4	5	6	7
Length (ft)	40.00	25.00	15.00	15.00	23.50	16.50	15.00
Number of Sides	12	12	12	12	12	12	12
Thickness (in)	0.1875	0.2500	0.3722	0.3918	0.4720	0.4977	0.5362
Top Dia (in)	15.0000	21.2500	27.6100	35.6910	38.0580	41.5760	44.0460
Bot Dia (in)	21.2500	27.6100	35.6910	38.0580	41.5760	44.0460	52.0640
Grade	A572-65						
Tube Length (ft)	33.50						
Reinf Size	2 1/2						
Reinf Grade	A615-75						
Weight (K)	1.5	1.7	1.9	2.3	4.8	3.8	4.2



ALL REACTIONS ARE FACTORED

AXIAL 79 K

SHEAR 5 K *MOMENT 600 kip-ft*

TORQUE 0 kip-ft

40 mph WIND - 1.0000 in ICE

AXIAL 45 K

SHEAR 24 K *MOMENT 2578 kip-ft*

TORQUE 2 kip-ft

REACTIONS - 93 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Andrew ABT-DFDM-ADB	150	TD-RRH8x20-25 w/ Solar Shield	143
TT19-08BP111-001	150	TD-RRH8x20-25 w/ Solar Shield	143
TT19-08BP111-001	150	TD-RRH8x20-25 w/ Solar Shield	143
TT19-08BP111-001	150	APXV9TM14-ALU-I20	143
RRUS 11 (Band 12) (55 lb)	150	APXV9TM14-ALU-I20	143
RRUS 11 (Band 12) (55 lb)	150	APXV9TM14-ALU-I20	143
RRUS 11 (Band 12) (55 lb)	150	APXVSPP18-C-A20	143
RRUS-12 B2	150	APXVSPP18-C-A20	143
RRUS-12 B2	150	APXVSPP18-C-A20	143
RRUS-12 B2	150	Round Platform w/ Handrails	143
7770.00	150	B5 RRH4x40-850	132
7770.00	150	B5 RRH4x40-850	132
7770.00	150	B5 RRH4x40-850	132
AM-X-CD-16-65-00T-RET	150	B25 RRH4x30	132
AM-X-CD-16-65-00T-RET	150	B25 RRH4x30	132
DC6-48-60-18-8F	150	B25 RRH4x30	132
DC6-48-60-18-8F	150	B13 RRH4x30-4R 700U	132
RRUS 32 B2	150	B13 RRH4x30-4R 700U	132
RRUS 32 B2	150	B13 RRH4x30-4R 700U	132
RRUS 32 B2	150	B66A RRH 4x45	132
800 10764	150	B66A RRH 4x45	132
80010767	150	B66A RRH 4x45	132
DBCT108F1V92-1	150	DB-T1-6Z-8AB-0Z	132
DBCT108F1V92-1	150	DB-T1-6Z-8AB-0Z	132
DBCT108F1V92-1	150	(2) LPA-80080/6CF ___	132
80010768	150	(2) LPA-80080/6CF ___	132
Round Low Profile Platform	150	(2) JAHH-65B-R3B	132
800 MHz 2X50W RRH w/ Filter	143	(2) JAHH-65B-R3B	132
800 MHz 2X50W RRH w/ Filter	143	(2) JAHH-65B-R3B	132
800 MHz 2X50W RRH w/ Filter	143	(2) LPA-80063/6CF	132
1900 MHz 4X45 RRH	143	Round Low Profile Platform	132
1900 MHz 4X45 RRH	143	GPS-TMG-HR-26N	75
1900 MHz 4X45 RRH	143		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	A615-75	75 ksi	100 ksi

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Tower wrap from 0' to 85'. This model considers an equivalent Moment of Inertia for tower Sections 3 through 7.
9. TOWER RATING: 93.6%

American Tower Corporation
3500 Regency Parkway, Suite 100
Cary, NC 27518
Phone: (919) 468-0112
FAX: (919) 466-5414

Job: ***302523 - New Milford CT 2, CT***			
Project: ***OAA737030_C3_01***			
Client: AT&T MOBILITY	Drawn by: Felix.Buabeng	App'd:	
Code: TIA-222-G	Date: 08/03/18	Scale: NTS	
Path: X:\N-R\New Milford CT2_CT (302523\OAA737030 AT&T MOBILITY\OAA737030_01_CUST_STRUCTRL\TNX\302523 - New Milford CT 2_CT.eri		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Litchfield County, Connecticut.
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 40 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tower wrap from 0' to 85'. This model considers an equivalent Moment of Inertia for tower Sections 3 through 7..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	√ Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-110.00	40.00	0.00	12	15.0000	21.2500	0.1875	0.7500	A572-65 (65 ksi)
L2	110.00-85.00	25.00	0.00	12	21.2500	27.6100	0.2500	1.0000	A572-65 (65 ksi)
L3	85.00-70.00	15.00	0.00	12	27.6100	35.6910	0.3722	1.4888	A572-65 (65 ksi)
L4	70.00-55.00	15.00	0.00	12	35.6910	38.0580	0.3918	1.5673	A572-65 (65 ksi)
L5	55.00-31.50	23.50	0.00	12	38.0580	41.5760	0.4720	1.8882	A572-65 (65 ksi)
L6	31.50-15.00	16.50	0.00	12	41.5760	44.0460	0.4977	1.9908	A572-65 (65 ksi)
L7	15.00-0.00	15.00		12	44.0460	52.0640	0.5362	2.1449	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	15.4630	8.9430	250.4541	5.3029	7.7700	32.2335	507.4880	4.4015	3.5175	18.76
	21.9335	12.7165	720.0669	7.5404	11.0075	65.4160	1459.0508	6.2587	5.1925	27.693
L2	21.9114	16.9050	951.5678	7.5180	11.0075	86.4472	1928.1342	8.3201	5.0250	20.1
	28.4958	22.0248	2104.4088	9.7949	14.3020	147.1411	4264.1028	10.8399	6.7295	26.918
L3	28.4527	32.6449	3091.3307	9.7511	14.3020	216.1470	6263.8740	16.0668	6.4020	17.2
	36.8187	42.3301	6739.8046	12.6441	18.4879	364.5515	13656.6715	20.8336	8.5677	23.018
L4	36.8118	44.5367	7083.2568	12.6371	18.4879	383.1285	14352.5987	21.9196	8.5151	21.732
	39.2623	47.5231	8605.8524	13.4845	19.7140	436.5341	17437.7901	23.3894	9.1494	23.351
L5	39.2340	57.1295	10301.4312	13.4558	19.7140	522.5428	20873.4924	28.1174	8.9345	18.927
	42.8761	62.4767	13473.2267	14.7152	21.5364	625.6035	27300.4100	30.7491	9.8773	20.925
L6	42.8671	65.8318	14179.0407	14.7060	21.5364	658.3766	28730.5806	32.4004	9.8085	19.708
	45.4242	69.7902	16893.6340	15.5903	22.8158	740.4348	34231.0826	34.3486	10.4705	21.038
L7	45.4106	75.1266	18153.2042	15.5765	22.8158	795.6408	36783.3132	36.9750	10.3672	19.334
	53.7115	88.9710	30152.0589	18.4469	26.9692	1118.0203	61096.2459	43.7888	12.5161	23.341

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.00-110.00				1	1	1			
L2 110.00-85.00				1	1	1			
L3 85.00-70.00				1	1	1			
L4 70.00-55.00				1	1	1			
L5 55.00-31.50				1	1	1			
L6 31.50-15.00				1	1	1			
L7 15.00-0.00				1	1	1			

Pole Reinforcing Data

Height Above Base ft	Segment Length ft	No. of Segments	Offset in	Grade	Type	Size	Unbraced Length ft	K	Bolt Hole Dia. in	Bolts per Row	Shear Lag Factor U
85.00	33.50	3	8.1100	A615-75 (75 ksi)	Solid Round	2 1/2	2.50	0.80	0.0000	0	1.000

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
1 5/8" Coax	B	Surface Ar (CaAa)	132.00 - 85.00	6	6	0.500 0.500	1.9800		0.82
1.58" (40.1mm) Hybrid	B	Surface Ar (CaAa)	132.00 - 85.00	2	2	0.500 0.500	1.5800		1.61
***									
Wrap Seams	A	Surface Ar (CaAa)	85.00 - 0.00	1	1	0.000 0.000	0.1875		2.00
Wrap Seams	A	Surface Ar (CaAa)	85.00 - 0.00	1	1	0.000 0.000	0.0000		2.00
Wrap Seams	A	Surface Ar (CaAa)	85.00 - 0.00	1	1	0.000 0.000	0.0000		2.00
***									
#20 Dywidag	A	Surface Ar (CaAa)	131.00 - 80.00	1	1	0.000 0.000	2.5000		16.70
#20 Dywidag	A	Surface Ar (CaAa)	131.00 - 80.00	1	1	0.000 0.000	0.0000		16.70
#20 Dywidag	A	Surface Ar (CaAa)	131.00 - 80.00	1	1	0.000 0.000	0.0000		16.70

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 1/4" Coax	A	No	Inside Pole	150.00 - 10.00	12	No Ice	0.00	0.63
						1/2" Ice	0.00	0.63
						1" Ice	0.00	0.63
0.78" (19.7 mm) 8 AWG 6	A	No	Inside Pole	150.00 - 10.00	4	No Ice	0.00	0.59
						1/2" Ice	0.00	0.59
						1" Ice	0.00	0.59
0.39" (10mm) Fiber Trunk	A	No	Inside Pole	150.00 - 0.00	2	No Ice	0.00	0.07
						1/2" Ice	0.00	0.07
						1" Ice	0.00	0.07
3" Conduit	A	No	Inside Pole	150.00 - 10.00	1	No Ice	0.00	7.58
						1/2" Ice	0.00	7.58
						1" Ice	0.00	7.58
***								
1 1/4" Hybriflex Cable	A	No	Inside Pole	143.00 - 10.00	4	No Ice	0.00	1.00
						1/2" Ice	0.00	1.00
						1" Ice	0.00	1.00
***								
1 5/8" Coax	B	No	Inside Pole	85.00 - 10.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
1.58" (40.1mm) Hybrid	B	No	Inside Pole	85.00 - 10.00	2	No Ice	0.00	1.61

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						1/2" Ice	0.00	1.61
						1" Ice	0.00	1.61
***								
1/2" Coax	C	No	Inside Pole	75.00 - 10.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-110.00	A	0.000	0.000	5.250	0.000	1.89
		B	0.000	0.000	33.088	0.000	0.18
		C	0.000	0.000	0.000	0.000	0.00
L2	110.00-85.00	A	0.000	0.000	6.250	0.000	1.79
		B	0.000	0.000	37.600	0.000	0.20
		C	0.000	0.000	0.000	0.000	0.00
L3	85.00-70.00	A	0.000	0.000	1.531	0.000	0.67
		B	0.000	0.000	0.000	0.000	0.12
		C	0.000	0.000	0.000	0.000	0.00
L4	70.00-55.00	A	0.000	0.000	0.281	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.12
		C	0.000	0.000	0.000	0.000	0.00
L5	55.00-31.50	A	0.000	0.000	0.441	0.000	0.65
		B	0.000	0.000	0.000	0.000	0.19
		C	0.000	0.000	0.000	0.000	0.00
L6	31.50-15.00	A	0.000	0.000	0.309	0.000	0.46
		B	0.000	0.000	0.000	0.000	0.13
		C	0.000	0.000	0.000	0.000	0.00
L7	15.00-0.00	A	0.000	0.000	0.281	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-110.00	A	2.292	0.000	0.000	34.132	0.000	2.44
		B		0.000	0.000	66.575	0.000	1.17
		C		0.000	0.000	0.000	0.000	0.00
L2	110.00-85.00	A	2.228	0.000	0.000	39.664	0.000	2.42
		B		0.000	0.000	74.845	0.000	1.29
		C		0.000	0.000	0.000	0.000	0.00
L3	85.00-70.00	A	2.177	0.000	0.000	27.660	0.000	1.05
		B		0.000	0.000	0.000	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.00
L4	70.00-55.00	A	2.132	0.000	0.000	19.466	0.000	0.67
		B		0.000	0.000	0.000	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.00
L5	55.00-31.50	A	2.054	0.000	0.000	29.402	0.000	1.02
		B		0.000	0.000	0.000	0.000	0.19
		C		0.000	0.000	0.000	0.000	0.00
L6	31.50-15.00	A	1.931	0.000	0.000	19.421	0.000	0.69

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.000	0.000	0.13
		C		0.000	0.000	0.000	0.000	0.00
L7	15.00-0.00	A	1.720	0.000	0.000	15.759	0.000	0.37
		B		0.000	0.000	0.000	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-110.00	2.5504	1.4725	1.3569	0.7834
L2	110.00-85.00	3.6919	2.1315	1.8161	1.0485
L3	85.00-70.00	-0.4939	-0.2851	-4.5013	-2.5988
L4	70.00-55.00	-0.0944	-0.0545	-3.7551	-2.1680
L5	55.00-31.50	-0.0944	-0.0545	-3.7463	-2.1629
L6	31.50-15.00	-0.0944	-0.0545	-3.6557	-2.1106
L7	15.00-0.00	-0.0944	-0.0545	-3.4470	-1.9901

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	9	1 5/8" Coax	110.00 - 132.00	1.0000	1.0000
L1	11	1.58" (40.1mm) Hybrid	110.00 - 132.00	1.0000	1.0000
L1	19	#20 Dywidag	110.00 - 131.00	1.0000	1.0000
L1	20	#20 Dywidag	110.00 - 131.00	1.0000	1.0000
L1	21	#20 Dywidag	110.00 - 131.00	1.0000	1.0000
L2	9	1 5/8" Coax	85.00 - 110.00	1.0000	1.0000
L2	11	1.58" (40.1mm) Hybrid	85.00 - 110.00	1.0000	1.0000
L2	19	#20 Dywidag	85.00 - 110.00	1.0000	1.0000
L2	20	#20 Dywidag	85.00 - 110.00	1.0000	1.0000
L2	21	#20 Dywidag	85.00 - 110.00	1.0000	1.0000
L3	15	Wrap Seams	70.00 - 85.00	1.0000	1.0000
L3	16	Wrap Seams	70.00 - 85.00	1.0000	1.0000
L3	17	Wrap Seams	70.00 - 85.00	1.0000	1.0000
L3	19	#20 Dywidag	80.00 - 85.00	1.0000	1.0000
L3	20	#20 Dywidag	80.00 - 85.00	1.0000	1.0000
L3	21	#20 Dywidag	80.00 - 85.00	1.0000	1.0000
L4	15	Wrap Seams	55.00 - 70.00	1.0000	1.0000
L4	16	Wrap Seams	55.00 - 70.00	1.0000	1.0000
L4	17	Wrap Seams	55.00 - 70.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	15	Wrap Seams	31.50 - 55.00	1.0000	1.0000
L5	16	Wrap Seams	31.50 - 55.00	1.0000	1.0000
L5	17	Wrap Seams	31.50 - 55.00	1.0000	1.0000
L6	15	Wrap Seams	15.00 - 31.50	1.0000	1.0000
L6	16	Wrap Seams	15.00 - 31.50	1.0000	1.0000
L6	17	Wrap Seams	15.00 - 31.50	1.0000	1.0000
L7	15	Wrap Seams	0.00 - 15.00	1.0000	1.0000
L7	16	Wrap Seams	0.00 - 15.00	1.0000	1.0000
L7	17	Wrap Seams	0.00 - 15.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Andrew ABT-DFDM-ADB	C	From Leg	4.00	0.0000	150.00	No Ice	0.05	0.05	0.00
			0.00			1/2" Ice	0.11	0.11	0.00
			4.00			1" Ice	0.17	0.17	0.00
TT19-08BP111-001	A	From Leg	4.00	0.0000	150.00	No Ice	0.55	0.45	0.02
			0.00			1/2" Ice	0.65	0.53	0.02
			4.00			1" Ice	0.75	0.63	0.03
TT19-08BP111-001	B	From Leg	4.00	0.0000	150.00	No Ice	0.55	0.45	0.02
			0.00			1/2" Ice	0.65	0.53	0.02
			4.00			1" Ice	0.75	0.63	0.03
TT19-08BP111-001	C	From Leg	4.00	0.0000	150.00	No Ice	0.55	0.45	0.02
			0.00			1/2" Ice	0.65	0.53	0.02
			4.00			1" Ice	0.75	0.63	0.03
RRUS 11 (Band 12) (55 lb)	A	From Leg	4.00	0.0000	150.00	No Ice	2.52	1.07	0.06
			0.00			1/2" Ice	2.72	1.21	0.07
			4.00			1" Ice	2.92	1.36	0.10
RRUS 11 (Band 12) (55 lb)	B	From Leg	4.00	0.0000	150.00	No Ice	2.52	1.07	0.06
			0.00			1/2" Ice	2.72	1.21	0.07
			4.00			1" Ice	2.92	1.36	0.10
RRUS 11 (Band 12) (55 lb)	C	From Leg	4.00	0.0000	150.00	No Ice	2.52	1.07	0.06
			0.00			1/2" Ice	2.72	1.21	0.07
			4.00			1" Ice	2.92	1.36	0.10
RRUS-12 B2	A	From Leg	4.00	0.0000	150.00	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08
			4.00			1" Ice	3.59	1.60	0.11
RRUS-12 B2	B	From Leg	4.00	0.0000	150.00	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08
			4.00			1" Ice	3.59	1.60	0.11
RRUS-12 B2	C	From Leg	4.00	0.0000	150.00	No Ice	3.15	1.29	0.06
			0.00			1/2" Ice	3.36	1.44	0.08
			4.00			1" Ice	3.59	1.60	0.11
7770.00	A	From Leg	4.00	0.0000	150.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			4.00			1" Ice	6.23	3.63	0.11
7770.00	B	From Leg	4.00	0.0000	150.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			4.00			1" Ice	6.23	3.63	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00	C	From Leg	4.00		0.0000	150.00	No Ice	5.51	2.93	0.04
			0.00				1/2" Ice	5.87	3.27	0.07
			4.00				1" Ice	6.23	3.63	0.11
AM-X-CD-16-65-00T-RET	A	From Leg	4.00		0.0000	150.00	No Ice	8.02	4.64	0.05
			0.00				1/2" Ice	8.48	5.09	0.09
			4.00				1" Ice	8.94	5.54	0.15
AM-X-CD-16-65-00T-RET	B	From Leg	4.00		0.0000	150.00	No Ice	8.02	4.64	0.05
			0.00				1/2" Ice	8.48	5.09	0.09
			4.00				1" Ice	8.94	5.54	0.15
DC6-48-60-18-8F	A	From Leg	4.00		0.0000	150.00	No Ice	1.11	1.11	0.02
			0.00				1/2" Ice	1.46	1.46	0.04
			4.00				1" Ice	1.81	1.81	0.05
DC6-48-60-18-8F	B	From Leg	4.00		0.0000	150.00	No Ice	1.11	1.11	0.02
			0.00				1/2" Ice	1.46	1.46	0.04
			4.00				1" Ice	1.81	1.81	0.05
RRUS 32 B2	A	From Leg	4.00		0.0000	150.00	No Ice	2.74	1.67	0.05
			0.00				1/2" Ice	3.59	2.18	0.07
			4.00				1" Ice	4.44	2.69	0.10
RRUS 32 B2	B	From Leg	4.00		0.0000	150.00	No Ice	2.74	1.67	0.05
			0.00				1/2" Ice	3.59	2.18	0.07
			4.00				1" Ice	4.44	2.69	0.10
RRUS 32 B2	C	From Leg	4.00		0.0000	150.00	No Ice	2.74	1.67	0.05
			0.00				1/2" Ice	3.59	2.18	0.07
			4.00				1" Ice	4.44	2.69	0.10
800 10764	C	From Leg	4.00		0.0000	150.00	No Ice	5.87	1.95	0.04
			0.00				1/2" Ice	6.99	2.33	0.08
			4.00				1" Ice	8.11	2.71	0.11
80010767	B	From Leg	4.00		0.0000	150.00	No Ice	7.38	2.21	0.64
			0.00				1/2" Ice	8.91	2.67	0.11
			4.00				1" Ice	10.44	3.13	0.15
DBCT108F1V92-1	A	From Leg	4.00		0.0000	150.00	No Ice	0.61	0.32	0.01
			0.00				1/2" Ice	9.53	5.01	0.05
			4.00				1" Ice	18.45	9.70	0.09
DBCT108F1V92-1	B	From Leg	4.00		0.0000	150.00	No Ice	0.61	0.32	0.01
			0.00				1/2" Ice	9.53	5.01	0.05
			4.00				1" Ice	18.45	9.70	0.09
DBCT108F1V92-1	C	From Leg	4.00		0.0000	150.00	No Ice	0.61	0.32	0.01
			0.00				1/2" Ice	9.53	5.01	0.05
			4.00				1" Ice	18.45	9.70	0.09
80010768	B	From Leg	4.00		0.0000	150.00	No Ice	10.16	3.13	0.08
			0.00				1/2" Ice	11.71	3.60	0.14
			4.00				1" Ice	13.26	4.07	0.19
Round Low Profile Platform	C	None			0.0000	150.00	No Ice	21.70	21.70	1.50
							1/2" Ice	27.20	27.20	1.70
							1" Ice	32.70	32.70	1.90
***										
800 MHz 2X50W RRH w/ Filter	A	From Leg	3.00		0.0000	143.00	No Ice	2.06	1.93	0.06
			0.00				1/2" Ice	2.24	2.11	0.09
			2.00				1" Ice	2.43	2.29	0.11
800 MHz 2X50W RRH w/ Filter	B	From Leg	3.00		0.0000	143.00	No Ice	2.06	1.93	0.06
			0.00				1/2" Ice	2.24	2.11	0.09
			2.00				1" Ice	2.43	2.29	0.11
800 MHz 2X50W RRH w/ Filter	C	From Leg	3.00		0.0000	143.00	No Ice	2.06	1.93	0.06
			0.00				1/2" Ice	2.24	2.11	0.09
			2.00				1" Ice	2.43	2.29	0.11
1900 MHz 4X45 RRH	A	From Leg	3.00		0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00				1/2" Ice	2.53	2.44	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00				1" Ice	2.74	2.65	0.11
1900 MHz 4X45 RRH	B	From Leg	3.00		0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00				1/2" Ice	2.53	2.44	0.08
			2.00				1" Ice	2.74	2.65	0.11
1900 MHz 4X45 RRH	C	From Leg	3.00		0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00				1/2" Ice	2.53	2.44	0.08
			2.00				1" Ice	2.74	2.65	0.11
TD-RRH8x20-25 w/ Solar Shield	A	From Leg	3.00		0.0000	143.00	No Ice	4.05	1.53	0.07
			0.00				1/2" Ice	4.30	1.71	0.10
			2.00				1" Ice	4.56	1.90	0.13
TD-RRH8x20-25 w/ Solar Shield	B	From Leg	3.00		0.0000	143.00	No Ice	4.05	1.53	0.07
			0.00				1/2" Ice	4.30	1.71	0.10
			2.00				1" Ice	4.56	1.90	0.13
TD-RRH8x20-25 w/ Solar Shield	C	From Leg	3.00		0.0000	143.00	No Ice	4.05	1.53	0.07
			0.00				1/2" Ice	4.30	1.71	0.10
			2.00				1" Ice	4.56	1.90	0.13
APXV9TM14-ALU-I20	A	From Leg	4.00		0.0000	143.00	No Ice	6.34	3.61	0.06
			0.00				1/2" Ice	6.72	3.97	0.09
			0.00				1" Ice	7.10	4.33	0.14
APXV9TM14-ALU-I20	B	From Leg	4.00		0.0000	143.00	No Ice	6.34	3.61	0.06
			0.00				1/2" Ice	6.72	3.97	0.09
			0.00				1" Ice	7.10	4.33	0.14
APXV9TM14-ALU-I20	C	From Leg	4.00		0.0000	143.00	No Ice	6.34	3.61	0.06
			0.00				1/2" Ice	6.72	3.97	0.09
			0.00				1" Ice	7.10	4.33	0.14
APXVSPP18-C-A20	A	From Leg	4.00		0.0000	143.00	No Ice	8.02	5.28	0.06
			0.00				1/2" Ice	8.48	5.74	0.11
			0.00				1" Ice	8.94	6.20	0.16
APXVSPP18-C-A20	B	From Leg	4.00		0.0000	143.00	No Ice	8.02	5.28	0.06
			0.00				1/2" Ice	8.48	5.74	0.11
			0.00				1" Ice	8.94	6.20	0.16
APXVSPP18-C-A20	C	From Leg	4.00		0.0000	143.00	No Ice	8.02	5.28	0.06
			0.00				1/2" Ice	8.48	5.74	0.11
			0.00				1" Ice	8.94	6.20	0.16
Round Platform w/ Handrails	C	None			0.0000	143.00	No Ice	27.20	27.20	2.00
							1/2" Ice	34.20	34.20	2.40
							1" Ice	41.20	41.20	2.80
***										
B5 RRH4x40-850	A	From Leg	3.00		0.0000	132.00	No Ice	1.32	0.40	0.05
			0.00				1/2" Ice	1.80	0.48	0.06
			0.00				1" Ice	2.28	0.57	0.07
B5 RRH4x40-850	B	From Leg	3.00		0.0000	132.00	No Ice	1.32	0.40	0.05
			0.00				1/2" Ice	1.80	0.48	0.06
			0.00				1" Ice	2.28	0.57	0.07
B5 RRH4x40-850	C	From Leg	3.00		0.0000	132.00	No Ice	1.32	0.40	0.05
			0.00				1/2" Ice	1.80	0.48	0.06
			0.00				1" Ice	2.28	0.57	0.07
B25 RRH4x30	A	From Leg	3.00		0.0000	132.00	No Ice	2.12	1.29	0.05
			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
B25 RRH4x30	B	From Leg	3.00		0.0000	132.00	No Ice	2.12	1.29	0.05
			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
B25 RRH4x30	C	From Leg	3.00		0.0000	132.00	No Ice	2.12	1.29	0.05
			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
B13 RRH4x30-4R 700U	A	From Leg	3.00		0.0000	132.00	No Ice	2.17	1.63	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	2.36	1.80	0.08
			0.00				1" Ice	2.56	1.98	0.10
B13 RRH4x30-4R 700U	B	From Leg	3.00		0.0000	132.00	No Ice	2.17	1.63	0.06
			0.00				1/2" Ice	2.36	1.80	0.08
			0.00				1" Ice	2.56	1.98	0.10
B13 RRH4x30-4R 700U	C	From Leg	3.00		0.0000	132.00	No Ice	2.17	1.63	0.06
			0.00				1/2" Ice	2.36	1.80	0.08
			0.00				1" Ice	2.56	1.98	0.10
B66A RRH 4x45	A	From Leg	3.00		0.0000	132.00	No Ice	2.58	1.63	0.07
			0.00				1/2" Ice	2.79	1.81	0.09
			0.00				1" Ice	3.01	2.00	0.11
B66A RRH 4x45	B	From Leg	3.00		0.0000	132.00	No Ice	2.58	1.63	0.07
			0.00				1/2" Ice	2.79	1.81	0.09
			0.00				1" Ice	3.01	2.00	0.11
B66A RRH 4x45	C	From Leg	3.00		0.0000	132.00	No Ice	2.58	1.63	0.07
			0.00				1/2" Ice	2.79	1.81	0.09
			0.00				1" Ice	3.01	2.00	0.11
DB-T1-6Z-8AB-0Z	B	From Leg	1.00		0.0000	132.00	No Ice	4.80	2.00	0.04
			0.00				1/2" Ice	5.07	2.19	0.08
			0.00				1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	C	From Leg	1.00		0.0000	132.00	No Ice	4.80	2.00	0.04
			0.00				1/2" Ice	5.07	2.19	0.08
			0.00				1" Ice	5.35	2.39	0.12
(2) LPA-80080/6CF ___	A	From Leg	4.00		0.0000	132.00	No Ice	8.63	5.42	0.02
			0.00				1/2" Ice	9.93	5.75	0.06
			0.00				1" Ice	11.23	6.09	0.09
(2) LPA-80080/6CF ___	B	From Leg	4.00		0.0000	132.00	No Ice	8.63	5.42	0.02
			0.00				1/2" Ice	9.93	5.75	0.06
			0.00				1" Ice	11.23	6.09	0.09
(2) JAHH-65B-R3B	A	From Leg	4.00		0.0000	132.00	No Ice	9.11	5.98	0.06
			0.00				1/2" Ice	9.58	6.44	0.12
			0.00				1" Ice	10.05	6.91	0.18
(2) JAHH-65B-R3B	B	From Leg	4.00		0.0000	132.00	No Ice	9.11	5.98	0.06
			0.00				1/2" Ice	9.58	6.44	0.12
			0.00				1" Ice	10.05	6.91	0.18
(2) JAHH-65B-R3B	C	From Leg	4.00		0.0000	132.00	No Ice	9.11	5.98	0.06
			0.00				1/2" Ice	9.58	6.44	0.12
			0.00				1" Ice	10.05	6.91	0.18
(2) LPA-80063/6CF	C	From Leg	4.00		0.0000	132.00	No Ice	9.59	5.42	0.03
			0.00				1/2" Ice	11.18	5.75	0.06
			0.00				1" Ice	12.77	6.09	0.09
Round Low Profile Platform	C	None			0.0000	132.00	No Ice	21.70	21.70	1.50
							1/2" Ice	27.20	27.20	1.70
							1" Ice	32.70	32.70	1.90
***										
GPS-TMG-HR-26N	C	From Leg	0.50		0.0000	75.00	No Ice	0.08	0.08	0.00
			0.00				1/2" Ice	0.12	0.12	0.00
			0.00				1" Ice	0.18	0.18	0.00
***										

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	20.17					
Bracing Weight	1.68					
Total Member Self-Weight	21.85			0.19	-0.34	
Total Weight	37.73			0.19	-0.34	
Wind 0 deg - No Ice		-0.09	-14.33	-1428.61	13.58	0.75
Wind 30 deg - No Ice		7.68	-13.21	-1320.48	-769.86	1.06
Wind 60 deg - No Ice		12.54	-7.09	-702.15	-1256.85	0.50
Wind 90 deg - No Ice		14.53	0.09	14.11	-1459.27	0.15
Wind 120 deg - No Ice		12.63	7.24	726.65	-1270.77	-0.25
Wind 150 deg - No Ice		7.34	12.45	1244.54	-741.86	-0.58
Wind 180 deg - No Ice		0.09	14.33	1429.00	-14.26	-0.75
Wind 210 deg - No Ice		-7.68	13.21	1320.87	769.18	-1.06
Wind 240 deg - No Ice		-12.54	7.09	702.54	1256.17	-0.50
Wind 270 deg - No Ice		-14.53	-0.09	-13.73	1458.59	-0.15
Wind 300 deg - No Ice		-12.63	-7.24	-726.27	1270.09	0.25
Wind 330 deg - No Ice		-7.34	-12.45	-1244.15	741.18	0.58
Member Ice	14.36					
Total Weight Ice	71.06			-0.77	0.40	
Wind 0 deg - Ice		-0.02	-4.45	-484.41	4.11	0.23
Wind 30 deg - Ice		2.45	-4.20	-457.11	-266.10	0.29
Wind 60 deg - Ice		3.91	-2.21	-239.38	-425.56	0.16
Wind 90 deg - Ice		4.42	0.02	2.93	-484.07	0.06
Wind 120 deg - Ice		3.84	2.20	239.49	-421.02	-0.07
Wind 150 deg - Ice		2.23	3.78	411.67	-245.05	-0.17
Wind 180 deg - Ice		0.02	4.45	482.86	-3.31	-0.23
Wind 210 deg - Ice		-2.45	4.20	455.56	266.90	-0.29
Wind 240 deg - Ice		-3.91	2.21	237.83	426.35	-0.16
Wind 270 deg - Ice		-4.42	-0.02	-4.48	484.87	-0.06
Wind 300 deg - Ice		-3.84	-2.20	-241.04	421.82	0.07
Wind 330 deg - Ice		-2.23	-3.78	-413.22	245.84	0.17
Total Weight	37.73			0.19	-0.34	
Wind 0 deg - Service		-0.03	-5.34	-530.42	2.25	0.28
Wind 30 deg - Service		2.86	-4.92	-490.16	-289.51	0.39
Wind 60 deg - Service		4.67	-2.64	-259.88	-470.88	0.19
Wind 90 deg - Service		5.41	0.03	6.87	-546.26	0.05
Wind 120 deg - Service		4.70	2.70	272.24	-476.06	-0.09
Wind 150 deg - Service		2.73	4.64	465.11	-279.09	-0.21
Wind 180 deg - Service		0.03	5.34	533.80	-8.12	-0.28
Wind 210 deg - Service		-2.86	4.92	493.54	283.65	-0.39
Wind 240 deg - Service		-4.67	2.64	263.26	465.02	-0.19
Wind 270 deg - Service		-5.41	-0.03	-3.49	540.40	-0.05
Wind 300 deg - Service		-4.70	-2.70	-268.86	470.20	0.09
Wind 330 deg - Service		-2.73	-4.64	-461.73	273.23	0.21

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice

Comb. No.	Description
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	150 - 110	Pole	Max Tension	28	58.77	0.61	-4.31
			Max. Compression	26	-31.20	-4.18	-1.74
			Max. Mx	8	-12.83	-299.68	-7.82
			Max. My	14	-12.89	-9.12	-288.54
			Max. Vy	8	13.45	-299.68	-7.82
			Max. Vx	14	13.09	-9.12	-288.54
			Max. Torque	14			1.66
L2	110 - 85	Pole	Max Tension	28	57.00	-11.40	16.67
			Max. Compression	1	-10.25	0.32	0.18
			Max. Mx	20	-7.48	396.82	4.87

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-7.73	5.13	386.54
			Max. Vy	20	-14.09	396.82	4.87
			Max. Vx	2	-13.78	5.13	386.54
			Max. Torque	4			-2.17
	85 - 118.5	Reinforcing	Max Tension	12	139.43	-0.05	-0.02
			Max. Compression	8	-148.50	0.00	-0.40
			Max. Mx	10	121.26	-0.43	-0.00
			Max. My	20	138.42	-0.00	0.44
			Max. Vy	10	0.04	-0.43	-0.00
			Max. Vx	20	-0.04	-0.00	0.44
L3	85 - 70	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.28	-2.67	-0.84
			Max. Mx	8	-23.72	-1041.43	-14.37
			Max. My	14	-23.75	-14.72	-1013.89
			Max. Vy	8	17.31	-1041.43	-14.37
			Max. Vx	14	16.96	-14.72	-1013.89
			Max. Torque	16			2.15
L4	70 - 55	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.56	-2.17	-0.56
			Max. Mx	8	-27.33	-1311.01	-16.57
			Max. My	14	-27.35	-16.87	-1278.25
			Max. Vy	8	18.68	-1311.01	-16.57
			Max. Vx	14	18.33	-16.87	-1278.25
			Max. Torque	16			2.15
L5	55 - 31.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.22	-1.38	-0.10
			Max. Mx	8	-34.32	-1773.10	-19.94
			Max. My	14	-34.33	-20.14	-1732.29
			Max. Vy	8	20.69	-1773.10	-19.94
			Max. Vx	14	20.35	-20.14	-1732.29
			Max. Torque	16			2.15
L6	31.5 - 15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.52	-0.82	0.22
			Max. Mx	8	-39.80	-2124.55	-22.24
			Max. My	14	-39.80	-22.36	-2078.20
			Max. Vy	8	21.95	-2124.55	-22.24
			Max. Vx	14	21.61	-22.36	-2078.20
			Max. Torque	16			2.14
L7	15 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.61	-0.33	0.50
			Max. Mx	8	-45.27	-2462.91	-24.26
			Max. My	14	-45.27	-24.30	-2411.65
			Max. Vy	8	23.26	-2462.91	-24.26
			Max. Vx	2	-22.93	23.44	2410.92
			Max. Torque	16			2.14

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	78.61	0.00	0.00
	Max. H_x	21	33.96	23.25	0.14
	Max. H_z	2	45.28	0.14	22.92
	Max. M_x	2	2410.92	0.14	22.92
	Max. M_z	8	2462.91	-23.25	-0.14
	Max. Torsion	16	2.14	12.28	-21.13

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	21	33.96	23.25	0.14
	Min. H_x	8	45.28	-23.25	-0.14
	Min. H_z	15	33.96	-0.14	-22.92
	Min. M_x	14	-2411.65	-0.14	-22.92
	Min. M_z	20	-2461.82	23.25	0.14
	Min. Torsion	4	-2.13	-12.28	21.13

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	37.73	-0.00	-0.00	0.17	-0.29	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	45.28	-0.14	-22.92	-2410.92	23.44	1.51
0.9 Dead+1.6 Wind 0 deg - No Ice	33.96	-0.14	-22.92	-2377.11	23.19	1.41
1.2 Dead+1.6 Wind 30 deg - No Ice	45.28	12.28	-21.13	-2226.89	-1298.71	2.13
0.9 Dead+1.6 Wind 30 deg - No Ice	33.96	12.28	-21.13	-2196.10	-1280.44	2.00
1.2 Dead+1.6 Wind 60 deg - No Ice	45.28	20.07	-11.34	-1184.85	-2121.65	1.23
0.9 Dead+1.6 Wind 60 deg - No Ice	33.96	20.07	-11.34	-1168.40	-2091.57	1.12
1.2 Dead+1.6 Wind 90 deg - No Ice	45.28	23.25	0.14	24.26	-2462.91	0.52
0.9 Dead+1.6 Wind 90 deg - No Ice	33.96	23.25	0.14	23.70	-2427.93	0.45
1.2 Dead+1.6 Wind 120 deg - No Ice	45.28	20.21	11.58	1226.89	-2145.40	-0.38
0.9 Dead+1.6 Wind 120 deg - No Ice	33.96	20.21	11.58	1209.44	-2114.90	-0.38
1.2 Dead+1.6 Wind 150 deg - No Ice	45.28	11.75	19.92	2100.40	-1252.79	-1.18
0.9 Dead+1.6 Wind 150 deg - No Ice	33.96	11.75	19.92	2070.77	-1234.84	-1.12
1.2 Dead+1.6 Wind 180 deg - No Ice	45.28	0.14	22.92	2411.65	-24.30	-1.63
0.9 Dead+1.6 Wind 180 deg - No Ice	33.96	0.14	22.92	2377.74	-23.68	-1.52
1.2 Dead+1.6 Wind 210 deg - No Ice	45.28	-12.28	21.13	2228.07	1297.15	-2.14
0.9 Dead+1.6 Wind 210 deg - No Ice	33.96	-12.28	21.13	2196.99	1279.34	-2.02
1.2 Dead+1.6 Wind 240 deg - No Ice	45.28	-20.07	11.34	1185.20	2120.14	-1.12
0.9 Dead+1.6 Wind 240 deg - No Ice	33.96	-20.07	11.34	1168.55	2090.52	-1.02
1.2 Dead+1.6 Wind 270 deg - No Ice	45.28	-23.25	-0.14	-23.47	2461.82	-0.39
0.9 Dead+1.6 Wind 270 deg - No Ice	33.96	-23.25	-0.14	-23.17	2427.47	-0.33
1.2 Dead+1.6 Wind 300 deg - No Ice	45.28	-20.21	-11.58	-1225.69	2143.85	0.40
0.9 Dead+1.6 Wind 300 deg - No Ice	33.96	-20.21	-11.58	-1208.55	2113.82	0.40

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.6 Wind 330 deg - No Ice	45.28	-11.75	-19.92	-2100.02	1251.24	1.08
0.9 Dead+1.6 Wind 330 deg - No Ice	33.96	-11.75	-19.92	-2070.59	1233.74	1.02
1.2 Dead+1.0 Ice+1.0 Temp	78.61	-0.00	-0.00	-0.50	-0.33	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	78.61	-0.02	-4.45	-549.50	3.84	0.34
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	78.61	2.45	-4.20	-517.70	-302.63	0.42
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	78.61	3.90	-2.21	-271.21	-484.22	0.27
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	78.61	4.42	0.02	3.90	-551.12	0.11
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	78.61	3.84	2.20	272.62	-479.53	-0.08
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	78.61	2.23	3.78	468.17	-279.59	-0.25
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	78.61	0.02	4.45	548.58	-4.87	-0.35
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	78.61	-2.45	4.20	516.78	301.60	-0.42
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	78.61	-3.90	2.21	270.29	483.18	-0.26
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	78.61	-4.42	-0.02	-4.81	550.09	-0.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	78.61	-3.84	-2.20	-273.53	478.50	0.08
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	78.61	-2.23	-3.78	-469.08	278.56	0.24
Dead+Wind 0 deg - Service	37.73	-0.03	-5.34	-556.33	4.98	0.35
Dead+Wind 30 deg - Service	37.73	2.86	-4.92	-513.96	-300.18	0.48
Dead+Wind 60 deg - Service	37.73	4.67	-2.64	-273.25	-490.08	0.27
Dead+Wind 90 deg - Service	37.73	5.41	0.03	5.80	-568.98	0.10
Dead+Wind 120 deg - Service	37.73	4.70	2.70	283.37	-495.57	-0.09
Dead+Wind 150 deg - Service	37.73	2.73	4.64	485.09	-289.51	-0.26
Dead+Wind 180 deg - Service	37.73	0.03	5.34	556.92	-6.02	-0.36
Dead+Wind 210 deg - Service	37.73	-2.86	4.92	514.56	299.14	-0.48
Dead+Wind 240 deg - Service	37.73	-4.67	2.64	273.85	489.04	-0.26
Dead+Wind 270 deg - Service	37.73	-5.41	-0.03	-5.20	567.94	-0.09
Dead+Wind 300 deg - Service	37.73	-4.70	-2.70	-282.77	494.53	0.09
Dead+Wind 330 deg - Service	37.73	-2.73	-4.64	-484.50	288.47	0.25

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-37.73	0.00	0.00	37.73	0.00	0.005%
2	-0.14	-45.28	-22.92	0.14	45.28	22.92	0.003%
3	-0.14	-33.96	-22.92	0.14	33.96	22.92	0.006%
4	12.28	-45.28	-21.13	-12.28	45.28	21.13	0.000%
5	12.28	-33.96	-21.13	-12.28	33.96	21.13	0.000%
6	20.07	-45.28	-11.34	-20.07	45.28	11.34	0.000%
7	20.07	-33.96	-11.34	-20.07	33.96	11.34	0.000%
8	23.25	-45.28	0.14	-23.25	45.28	-0.14	0.003%
9	23.25	-33.96	0.14	-23.25	33.96	-0.14	0.006%
10	20.21	-45.28	11.58	-20.21	45.28	-11.58	0.000%
11	20.21	-33.96	11.58	-20.21	33.96	-11.58	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
12	11.75	-45.28	19.92	-11.75	45.28	-19.92	0.000%
13	11.75	-33.96	19.92	-11.75	33.96	-19.92	0.000%
14	0.14	-45.28	22.92	-0.14	45.28	-22.92	0.003%
15	0.14	-33.96	22.92	-0.14	33.96	-22.92	0.002%
16	-12.28	-45.28	21.13	12.28	45.28	-21.13	0.000%
17	-12.28	-33.96	21.13	12.28	33.96	-21.13	0.000%
18	-20.07	-45.28	11.34	20.07	45.28	-11.34	0.000%
19	-20.07	-33.96	11.34	20.07	33.96	-11.34	0.000%
20	-23.25	-45.28	-0.14	23.25	45.28	0.14	0.007%
21	-23.25	-33.96	-0.14	23.25	33.96	0.14	0.006%
22	-20.21	-45.28	-11.58	20.21	45.28	11.58	0.000%
23	-20.21	-33.96	-11.58	20.21	33.96	11.58	0.000%
24	-11.75	-45.28	-19.92	11.75	45.28	19.92	0.000%
25	-11.75	-33.96	-19.92	11.75	33.96	19.92	0.000%
26	0.00	-78.61	0.00	0.00	78.61	0.00	0.001%
27	-0.02	-78.61	-4.45	0.02	78.61	4.45	0.001%
28	2.45	-78.61	-4.20	-2.45	78.61	4.20	0.001%
29	3.91	-78.61	-2.21	-3.90	78.61	2.21	0.001%
30	4.42	-78.61	0.02	-4.42	78.61	-0.02	0.001%
31	3.84	-78.61	2.20	-3.84	78.61	-2.20	0.001%
32	2.23	-78.61	3.78	-2.23	78.61	-3.78	0.001%
33	0.02	-78.61	4.45	-0.02	78.61	-4.45	0.001%
34	-2.45	-78.61	4.20	2.45	78.61	-4.20	0.001%
35	-3.91	-78.61	2.21	3.90	78.61	-2.21	0.001%
36	-4.42	-78.61	-0.02	4.42	78.61	0.02	0.001%
37	-3.84	-78.61	-2.20	3.84	78.61	2.20	0.001%
38	-2.23	-78.61	-3.78	2.23	78.61	3.78	0.001%
39	-0.03	-37.73	-5.34	0.03	37.73	5.34	0.002%
40	2.86	-37.73	-4.92	-2.86	37.73	4.92	0.002%
41	4.67	-37.73	-2.64	-4.67	37.73	2.64	0.002%
42	5.41	-37.73	0.03	-5.41	37.73	-0.03	0.002%
43	4.70	-37.73	2.70	-4.70	37.73	-2.70	0.002%
44	2.73	-37.73	4.64	-2.73	37.73	-4.64	0.002%
45	0.03	-37.73	5.34	-0.03	37.73	-5.34	0.002%
46	-2.86	-37.73	4.92	2.86	37.73	-4.92	0.002%
47	-4.67	-37.73	2.64	4.67	37.73	-2.64	0.002%
48	-5.41	-37.73	-0.03	5.41	37.73	0.03	0.002%
49	-4.70	-37.73	-2.70	4.70	37.73	2.70	0.002%
50	-2.73	-37.73	-4.64	2.73	37.73	4.64	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00002875
2	Yes	16	0.00004270	0.00007424
3	Yes	15	0.00006100	0.00011843
4	Yes	19	0.00000001	0.00011239
5	Yes	19	0.00000001	0.00007655
6	Yes	19	0.00000001	0.00008967
7	Yes	18	0.00000001	0.00014081
8	Yes	16	0.00004239	0.00007154
9	Yes	15	0.00006055	0.00011438
10	Yes	19	0.00000001	0.00009825
11	Yes	19	0.00000001	0.00006706
12	Yes	19	0.00000001	0.00010054

13	Yes	19	0.00000001	0.00006875
14	Yes	16	0.00004272	0.00012312
15	Yes	16	0.00002688	0.00009004
16	Yes	19	0.00000001	0.00010237
17	Yes	19	0.00000001	0.00006987
18	Yes	19	0.00000001	0.00009474
19	Yes	18	0.00000001	0.00014854
20	Yes	15	0.00009489	0.00010178
21	Yes	15	0.00006119	0.00008177
22	Yes	19	0.00000001	0.00009835
23	Yes	19	0.00000001	0.00006736
24	Yes	19	0.00000001	0.00009483
25	Yes	18	0.00000001	0.00014883
26	Yes	11	0.00000001	0.00004020
27	Yes	17	0.00000001	0.00011897
28	Yes	17	0.00009998	0.00014364
29	Yes	17	0.00000001	0.00013273
30	Yes	17	0.00000001	0.00012311
31	Yes	17	0.00000001	0.00013461
32	Yes	17	0.00000001	0.00013322
33	Yes	17	0.00000001	0.00012044
34	Yes	17	0.00009982	0.00014120
35	Yes	17	0.00000001	0.00013034
36	Yes	17	0.00000001	0.00011912
37	Yes	17	0.00000001	0.00013010
38	Yes	17	0.00000001	0.00012878
39	Yes	15	0.00000001	0.00002973
40	Yes	15	0.00000001	0.00004731
41	Yes	15	0.00000001	0.00003164
42	Yes	15	0.00000001	0.00002922
43	Yes	15	0.00000001	0.00003544
44	Yes	15	0.00000001	0.00004015
45	Yes	15	0.00000001	0.00003072
46	Yes	15	0.00000001	0.00003426
47	Yes	15	0.00000001	0.00003840
48	Yes	15	0.00000001	0.00002847
49	Yes	15	0.00000001	0.00003700
50	Yes	15	0.00000001	0.00003241

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 110	22.355	40	1.6741	0.0148
L2	110 - 85	11.205	40	1.0459	0.0042
L3	85 - 70	6.286	40	0.8012	0.0016
L4	70 - 55	4.106	40	0.6024	0.0010
L5	55 - 31.5	2.451	40	0.4504	0.0007
L6	31.5 - 15	0.742	40	0.2425	0.0003
L7	15 - 0	0.149	40	0.1007	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.00	Andrew ABT-DFDM-ADB	40	22.355	1.6741	0.0148	25188
143.00	800 MHz 2X50W RRH w/ Filter	40	20.254	1.5435	0.0126	17992
132.00	B5 RRH4x40-850	40	17.019	1.3461	0.0094	6996
75.00	GPS-TMG-HR-26N	40	4.773	0.6676	0.0011	4994

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	150 - 110	96.946	16	7.0170	0.0654
L2	110 - 85	48.620	16	4.5457	0.0187
L3	85 - 70	27.271	16	3.4809	0.0068
L4	70 - 55	17.813	16	2.6157	0.0043
L5	55 - 31.5	10.629	16	1.9548	0.0028
L6	31.5 - 15	3.217	16	1.0518	0.0013
L7	15 - 0	0.645	16	0.4362	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.00	Andrew ABT-DFDM-ADB	16	96.946	7.0170	0.0654	6289
143.00	800 MHz 2X50W RRH w/ Filter	16	87.839	6.5051	0.0559	4491
132.00	B5 RRH4x40-850	16	73.824	5.7285	0.0416	1744
75.00	GPS-TMG-HR-26N	16	20.705	2.8994	0.0050	1154

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	150 - 148	TP21.25x15x0.1875	40.00	0.00	0.0	9.1317	-3.50	673.10	0.005
	148 - 146					9.3204	-3.69	687.01	0.005
	146 - 144					9.5091	-3.88	700.91	0.006
	144 - 142					9.6977	-7.23	714.82	0.010
	142 - 140					9.8864	-7.43	728.00	0.010
	140 - 138					10.0751	-7.64	737.48	0.010
	138 - 136					10.2638	-7.85	746.79	0.011
	136 - 134					10.4524	-8.06	755.93	0.011
	134 - 132					10.6411	-8.28	764.91	0.011
	132 - 130					10.8298	-11.32	773.73	0.015
	130 - 128					11.0184	-11.57	782.37	0.015

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
	128 - 126					11.2071	-11.82	790.86	0.015
	126 - 124					11.3958	-12.07	799.17	0.015
	124 - 122					11.5845	-12.34	807.33	0.015
	122 - 120					11.7731	-12.61	815.31	0.015
	120 - 118.5					11.9146	-12.82	821.20	0.016
	118.5 - 118					11.9146	-2.10	821.20	0.003
	118 - 116					11.9618	-2.23	823.13	0.003
	116 - 114					12.3391	-2.42	838.28	0.003
	114 - 112					12.5278	-2.64	845.61	0.003
	112 - 110					12.7165	-2.86	852.77	0.003
L2	110 - 108.75	TP27.61x21.25x0.25	25.00	0.00	0.0	17.1610	-3.07	1264.94	0.002
	108.75 - 107.5					17.4170	-3.28	1283.81	0.003
	107.5 - 106.25					17.6730	-3.49	1299.13	0.003
	106.25 - 105					17.9290	-3.70	1311.95	0.003
	105 - 103.75					18.1849	-3.91	1324.60	0.003
	103.75 - 102.5					18.4409	-4.13	1337.07	0.003
	102.5 - 101.25					18.6969	-4.35	1349.38	0.003
	101.25 - 100					18.9529	-4.57	1361.51	0.003
	100 - 98.75					19.2089	-4.79	1373.47	0.003
	98.75 - 97.5					19.4649	-5.09	1385.26	0.004
	97.5 - 96.25					19.7209	-5.31	1396.88	0.004
	96.25 - 95					19.9769	-5.53	1408.33	0.004
	95 - 93.75					20.2329	-5.76	1419.61	0.004
	93.75 - 92.5					20.4889	-5.99	1430.71	0.004
	92.5 - 91.25					20.7449	-6.22	1441.65	0.004
	91.25 - 90					21.0008	-6.45	1452.41	0.004
	90 - 88.75					21.2568	-6.68	1463.00	0.005
	88.75 - 87.5					21.5128	-6.92	1473.42	0.005
	87.5 - 86.25					21.7688	-7.15	1483.67	0.005
	86.25 - 85					22.0248	-7.39	1493.74	0.005
L3	85 - 84	TP35.691x27.61x0.3722	15.00	0.00	0.0	32.6449	-20.22	2406.26	0.008
	84 - 83					33.2906	-20.43	2453.85	0.008
	83 - 82					33.9363	-20.65	2501.44	0.008
	82 - 81					34.5820	-20.87	2549.04	0.008
	81 - 80					35.2277	-21.09	2596.63	0.008
	80 - 79					35.8733	-21.31	2644.22	0.008
	79 - 78					36.5190	-21.53	2691.82	0.008
	78 - 77					37.1647	-21.76	2739.41	0.008
	77 - 76					37.8104	-21.99	2787.00	0.008
	76 - 75					38.4561	-22.22	2834.60	0.008
	75 - 74					39.1017	-22.45	2876.04	0.008
	74 - 73					39.7474	-22.69	2908.39	0.008
	73 - 72					40.3931	-22.93	2940.26	0.008
	72 - 71					41.0388	-23.17	2971.63	0.008
	71 - 70					41.6845	-23.41	3002.51	0.008
L4	70 - 69	TP38.058x35.691x0.3918	15.00	0.00	0.0	44.7358	-23.87	3257.03	0.007
	69 - 68					44.9349	-24.11	3266.77	0.007
	68 - 67					45.1340	-24.34	3276.46	0.007
	67 - 66					45.3331	-24.58	3286.11	0.007
	66 - 65					45.5322	-24.82	3295.72	0.008
	65 - 64					45.7313	-25.06	3305.29	0.008
	64 - 63					45.9304	-25.30	3314.81	0.008
	63 - 62					46.1295	-25.54	3324.29	0.008
	62 - 61					46.3286	-25.78	3333.73	0.008
	61 - 60					46.5277	-26.03	3343.13	0.008
	60 - 59					46.7267	-26.27	3352.48	0.008
	59 - 58					46.9258	-26.52	3361.80	0.008
	58 - 57					47.1249	-26.76	3371.07	0.008
	57 - 56					47.3240	-27.01	3380.29	0.008
	56 - 55					47.5231	-27.26	3389.48	0.008

Section No.	Elevation (ft)	Size	L (ft)	L_u (ft)	Kl/r	A (in^2)	P_u (K)	ϕP_n (K)	Ratio $\frac{P_u}{\phi P_n}$
L5	55 - 53.825	TP41.576x38.058x0.472	23.50	0.00	0.0	57.3969	-27.60	4230.72	0.007
	53.825 - 52.65					57.6642	-27.94	4250.43	0.007
	52.65 - 51.475					57.9316	-28.28	4270.14	0.007
	51.475 - 50.3					58.1989	-28.62	4289.84	0.007
	50.3 - 49.125					58.4663	-28.96	4309.55	0.007
	49.125 - 47.95					58.7337	-29.30	4329.26	0.007
	47.95 - 46.775					59.0010	-29.65	4348.97	0.007
	46.775 - 45.6					59.2684	-30.00	4368.67	0.007
	45.6 - 44.425					59.5357	-30.35	4388.38	0.007
	44.425 - 43.25					59.8031	-30.70	4408.09	0.007
	43.25 - 42.075					60.0705	-31.05	4427.79	0.007
	42.075 - 40.9					60.3378	-31.40	4447.50	0.007
	40.9 - 39.725					60.6052	-31.75	4467.21	0.007
	39.725 - 38.55					60.8726	-32.11	4486.92	0.007
	38.55 - 37.375					61.1399	-32.47	4506.62	0.007
	37.375 - 36.2					61.4073	-32.83	4526.33	0.007
	36.2 - 35.025					61.6746	-33.19	4546.04	0.007
	35.025 - 33.85					61.9420	-33.55	4565.75	0.007
	33.85 - 32.675					62.2094	-33.91	4585.45	0.007
	32.675 - 31.5					62.4767	-34.28	4605.16	0.007
L6	31.5 - 30.4688	TP44.046x41.576x0.4977	16.50	0.00	0.0	66.0792	-34.61	4870.70	0.007
	30.4688 - 29.4375					66.3266	-34.95	4888.94	0.007
	29.4375 - 28.4063					66.5740	-35.29	4907.17	0.007
	28.4063 - 27.375					66.8214	-35.63	4925.41	0.007
	27.375 - 26.3438					67.0688	-35.97	4943.64	0.007
	26.3438 - 25.3125					67.3162	-36.31	4961.88	0.007
	25.3125 - 24.2813					67.5636	-36.65	4980.12	0.007
	24.2813 - 23.25					67.8110	-36.99	4998.35	0.007
	23.25 - 22.2188					68.0584	-37.34	5016.59	0.007
	22.2188 - 21.1875					68.3058	-37.68	5034.82	0.007
	21.1875 - 20.1563					68.5532	-38.03	5053.06	0.008
	20.1563 - 19.125					68.8006	-38.38	5071.30	0.008
	19.125 - 18.0938					69.0480	-38.73	5089.53	0.008
	18.0938 - 17.0625					69.2954	-39.08	5107.77	0.008
	17.0625 - 16.0313					69.5428	-39.43	5123.54	0.008
	16.0313 - 15					69.7902	-39.78	5136.07	0.008
L7	15 - 14	TP52.064x44.046x0.5362	15.00	0.00	0.0	75.1266	-39.80	5537.58	0.007
	14 - 13					76.0496	-40.14	5605.61	0.007
	13 - 12					76.9725	-40.48	5673.64	0.007
	12 - 11					77.8955	-40.83	5741.68	0.007
	11 - 10					78.8184	-41.18	5809.71	0.007
	10 - 9					79.7414	-41.54	5877.74	0.007
	9 - 8					80.6644	-41.89	5945.77	0.007
	8 - 7					81.5873	-42.26	5990.97	0.007
	7 - 6					82.5103	-42.62	6037.11	0.007
	6 - 5					83.4332	-42.99	6082.76	0.007

Section No.	Elevation (ft)	Size	L (ft)	L_u (ft)	Kl/r	A (in^2)	P_u (K)	ϕP_n (K)	Ratio $\frac{P_u}{\phi P_n}$
	5 - 4					84.3562	-43.36	6127.92	0.007
	4 - 3					85.2791	-43.74	6172.61	0.007
	3 - 2					86.2021	-44.12	6216.81	0.007
	2 - 1					87.1251	-44.50	6260.52	0.007
	1 - 0					88.0480	-44.89	6303.76	0.007

Pole Bending Design Data

Section No.	Elevation (ft)	Size	M_{ux} (kip-ft)	ϕM_{nx} (kip-ft)	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} (kip-ft)	ϕM_{ny} (kip-ft)	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 148	TP21.25x15x0.1875	20.78	206.49	0.101	0.00	206.49	0.000
	148 - 146		28.43	215.16	0.132	0.00	215.16	0.000
	146 - 144		36.34	224.02	0.162	0.00	224.02	0.000
	144 - 142		49.00	233.05	0.210	0.00	233.05	0.000
	142 - 140		63.83	242.02	0.264	0.00	242.02	0.000
	140 - 138		78.90	249.90	0.316	0.00	249.90	0.000
	138 - 136		94.22	257.84	0.365	0.00	257.84	0.000
	136 - 134		109.78	265.85	0.413	0.00	265.85	0.000
	134 - 132		125.58	273.92	0.458	0.00	273.92	0.000
	132 - 130		151.29	282.04	0.536	0.00	282.04	0.000
	130 - 128		177.20	290.21	0.611	0.00	290.21	0.000
	128 - 126		203.31	298.43	0.681	0.00	298.43	0.000
	126 - 124		229.62	306.70	0.749	0.00	306.70	0.000
	124 - 122		256.11	315.01	0.813	0.00	315.01	0.000
	122 - 120		282.79	323.35	0.875	0.00	323.35	0.000
	120 - 118.5		302.91	329.64	0.919	0.00	329.64	0.000
	118.5 - 118		31.85	329.64	0.097	0.00	329.64	0.000
	118 - 116		26.16	331.74	0.079	0.00	331.74	0.000
	116 - 114		26.26	348.60	0.075	0.00	348.60	0.000
	114 - 112		49.75	357.07	0.139	0.00	357.07	0.000
	112 - 110		73.54	365.57	0.201	0.00	365.57	0.000
L2	110 - 108.75	TP27.61x21.25x0.25	88.53	547.30	0.162	0.00	547.30	0.000
	108.75 - 107.5		103.64	563.85	0.184	0.00	563.85	0.000
	107.5 - 106.25		118.88	579.06	0.205	0.00	579.06	0.000
	106.25 - 105		134.24	593.34	0.226	0.00	593.34	0.000
	105 - 103.75		149.73	607.71	0.246	0.00	607.71	0.000
	103.75 - 102.5		165.34	622.16	0.266	0.00	622.16	0.000
	102.5 - 101.25		181.08	636.70	0.284	0.00	636.70	0.000
	101.25 - 100		196.96	651.31	0.302	0.00	651.31	0.000
	100 - 98.75		212.96	666.00	0.320	0.00	666.00	0.000
	98.75 - 97.5		229.06	680.76	0.336	0.00	680.76	0.000
	97.5 - 96.25		246.22	695.59	0.354	0.00	695.59	0.000
	96.25 - 95		263.59	710.49	0.371	0.00	710.49	0.000
	95 - 93.75		281.15	725.45	0.388	0.00	725.45	0.000
	93.75 - 92.5		298.92	740.46	0.404	0.00	740.46	0.000
	92.5 - 91.25		316.89	755.54	0.419	0.00	755.54	0.000
	91.25 - 90		335.07	770.66	0.435	0.00	770.66	0.000
	90 - 88.75		353.46	785.83	0.450	0.00	785.83	0.000
	88.75 - 87.5		372.06	801.05	0.464	0.00	801.05	0.000
	87.5 - 86.25		390.88	816.31	0.479	0.00	816.31	0.000
	86.25 - 85		409.91	831.61	0.493	0.00	831.61	0.000
L3	85 - 84	TP35.691x27.61x0.3722	802.63	1327.68	0.605	0.00	1327.68	0.000
	84 - 83		819.97	1381.08	0.594	0.00	1381.08	0.000
	83 - 82		837.38	1435.54	0.583	0.00	1435.54	0.000
	82 - 81		854.85	1491.04	0.573	0.00	1491.04	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	81 - 80		872.39	1547.60	0.564	0.00	1547.60	0.000
	80 - 79		890.02	1605.22	0.554	0.00	1605.22	0.000
	79 - 78		907.72	1663.88	0.546	0.00	1663.88	0.000
	78 - 77		925.49	1723.60	0.537	0.00	1723.60	0.000
	77 - 76		943.35	1784.38	0.529	0.00	1784.38	0.000
	76 - 75		961.29	1846.20	0.521	0.00	1846.20	0.000
	75 - 74		979.33	1905.00	0.514	0.00	1905.00	0.000
	74 - 73		997.44	1958.60	0.509	0.00	1958.60	0.000
	73 - 72		1015.64	2012.58	0.505	0.00	2012.58	0.000
	72 - 71		1033.94	2066.93	0.500	0.00	2066.93	0.000
	71 - 70		1052.33	2121.62	0.496	0.00	2121.62	0.000
L4	70 - 69	TP38.058x35.691x0.3918	1089.39	2345.45	0.464	0.00	2345.45	0.000
	69 - 68		1108.06	2363.04	0.469	0.00	2363.04	0.000
	68 - 67		1126.82	2380.67	0.473	0.00	2380.67	0.000
	67 - 66		1145.66	2398.32	0.478	0.00	2398.32	0.000
	66 - 65		1164.60	2416.02	0.482	0.00	2416.02	0.000
	65 - 64		1183.63	2433.74	0.486	0.00	2433.74	0.000
	64 - 63		1202.75	2451.49	0.491	0.00	2451.49	0.000
	63 - 62		1221.96	2469.28	0.495	0.00	2469.28	0.000
	62 - 61		1241.26	2487.08	0.499	0.00	2487.08	0.000
	61 - 60		1260.65	2504.93	0.503	0.00	2504.93	0.000
	60 - 59		1280.13	2522.80	0.507	0.00	2522.80	0.000
	59 - 58		1299.71	2540.70	0.512	0.00	2540.70	0.000
	58 - 57		1319.38	2558.63	0.516	0.00	2558.63	0.000
	57 - 56		1339.13	2576.58	0.520	0.00	2576.58	0.000
	56 - 55		1358.97	2594.57	0.524	0.00	2594.57	0.000
L5	55 - 53.825	TP41.576x38.058x0.472	1382.42	3240.02	0.427	0.00	3240.02	0.000
	53.825 - 52.65		1405.97	3270.46	0.430	0.00	3270.46	0.000
	52.65 - 51.475		1429.63	3301.05	0.433	0.00	3301.05	0.000
	51.475 - 50.3		1453.43	3331.78	0.436	0.00	3331.78	0.000
	50.3 - 49.125		1477.33	3362.64	0.439	0.00	3362.64	0.000
	49.125 - 47.95		1501.36	3393.66	0.442	0.00	3393.66	0.000
	47.95 - 46.775		1525.50	3424.81	0.445	0.00	3424.81	0.000
	46.775 - 45.6		1549.76	3456.11	0.448	0.00	3456.11	0.000
	45.6 - 44.425		1574.13	3487.54	0.451	0.00	3487.54	0.000
	44.425 - 43.25		1598.63	3519.13	0.454	0.00	3519.13	0.000
	43.25 - 42.075		1623.24	3550.85	0.457	0.00	3550.85	0.000
	42.075 - 40.9		1647.97	3582.72	0.460	0.00	3582.72	0.000
	40.9 - 39.725		1672.83	3614.72	0.463	0.00	3614.72	0.000
	39.725 - 38.55		1697.79	3646.88	0.466	0.00	3646.88	0.000
	38.55 - 37.375		1722.88	3679.17	0.468	0.00	3679.17	0.000
	37.375 - 36.2		1748.08	3711.60	0.471	0.00	3711.60	0.000
	36.2 - 35.025		1773.40	3744.18	0.474	0.00	3744.18	0.000
	35.025 - 33.85		1798.83	3776.90	0.476	0.00	3776.90	0.000
	33.85 - 32.675		1824.38	3809.77	0.479	0.00	3809.77	0.000
	32.675 - 31.5		1850.06	3842.77	0.481	0.00	3842.77	0.000
L6	31.5 - 30.4688	TP44.046x41.576x0.4977	1872.68	4074.72	0.460	0.00	4074.72	0.000
	30.4688 - 29.4375		1895.38	4105.47	0.462	0.00	4105.47	0.000
	29.4375 - 28.4063		1918.17	4136.33	0.464	0.00	4136.33	0.000
	28.4063 - 27.375		1941.03	4167.32	0.466	0.00	4167.32	0.000
	27.375 - 26.3438		1963.97	4198.41	0.468	0.00	4198.41	0.000
	26.3438 - 25.3125		1987.00	4229.63	0.470	0.00	4229.63	0.000
	25.3125 - 24.2813		2010.11	4260.96	0.472	0.00	4260.96	0.000
	24.2813 -		2033.29	4292.40	0.474	0.00	4292.40	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	23.25							
	23.25 - 22.2188		2056.56	4323.96	0.476	0.00	4323.96	0.000
	22.2188 - 21.1875		2079.91	4355.63	0.478	0.00	4355.63	0.000
	21.1875 - 20.1563		2103.33	4387.43	0.479	0.00	4387.43	0.000
	20.1563 - 19.125		2126.83	4419.33	0.481	0.00	4419.33	0.000
	19.125 - 18.0938		2150.43	4451.36	0.483	0.00	4451.36	0.000
	18.0938 - 17.0625		2174.09	4483.50	0.485	0.00	4483.50	0.000
	17.0625 - 16.0313		2197.83	4513.58	0.487	0.00	4513.58	0.000
	16.0313 - 15		2221.66	4540.90	0.489	0.00	4540.90	0.000
L7	15 - 14	TP52.064x44.046x0.5362	2221.66	4887.23	0.455	0.00	4887.23	0.000
	14 - 13		2244.83	5008.78	0.448	0.00	5008.78	0.000
	13 - 12		2268.09	5131.84	0.442	0.00	5131.84	0.000
	12 - 11		2291.43	5256.38	0.436	0.00	5256.38	0.000
	11 - 10		2314.85	5382.43	0.430	0.00	5382.43	0.000
	10 - 9		2338.35	5509.96	0.424	0.00	5509.96	0.000
	9 - 8		2361.93	5638.98	0.419	0.00	5638.98	0.000
	8 - 7		2385.60	5747.61	0.415	0.00	5747.61	0.000
	7 - 6		2409.35	5858.12	0.411	0.00	5858.12	0.000
	6 - 5		2433.19	5969.17	0.408	0.00	5969.17	0.000
	5 - 4		2457.13	6080.76	0.404	0.00	6080.76	0.000
	4 - 3		2481.14	6192.84	0.401	0.00	6192.84	0.000
	3 - 2		2505.26	6305.41	0.397	0.00	6305.41	0.000
	2 - 1		2529.46	6418.46	0.394	0.00	6418.46	0.000
	1 - 0		2553.76	6531.97	0.391	0.00	6531.97	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 148	TP21.25x15x0.1875	3.79	336.55	0.011	0.51	420.45	0.001
	148 - 146		3.91	343.50	0.011	0.51	438.08	0.001
	146 - 144		4.04	350.46	0.012	0.51	456.06	0.001
	144 - 142		7.38	357.41	0.021	0.51	474.41	0.001
	142 - 140		7.51	364.00	0.021	0.51	492.63	0.001
	140 - 138		7.63	368.74	0.021	0.51	508.64	0.001
	138 - 136		7.75	373.39	0.021	0.51	524.78	0.001
	136 - 134		7.87	377.97	0.021	0.51	541.04	0.001
	134 - 132		7.99	382.46	0.021	0.51	557.42	0.001
	132 - 130		12.94	386.86	0.033	0.40	573.91	0.001
	130 - 128		13.05	391.19	0.033	0.40	590.50	0.001
	128 - 126		13.15	395.43	0.033	0.40	607.20	0.001
	126 - 124		13.25	399.59	0.033	0.40	623.98	0.001
	124 - 122		13.34	403.66	0.033	0.40	640.85	0.001
	122 - 120		13.43	407.66	0.033	0.40	657.80	0.001
	120 - 118.5		13.49	410.60	0.033	0.40	670.55	0.001
	118.5 - 118		11.42	411.57	0.028	1.61	670.55	0.002
	118 - 116		11.59	415.40	0.028	1.61	674.82	0.002
	116 - 114		11.69	419.14	0.028	0.39	709.05	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	114 - 112		11.84	422.80	0.028	0.39	726.25	0.001
	112 - 110		12.00	426.38	0.028	0.39	743.49	0.001
L2	110 - 108.75	TP27.61x21.25x0.25	12.10	632.47	0.019	0.39	1114.16	0.000
	108.75 - 107.5		12.20	641.90	0.019	0.39	1147.78	0.000
	107.5 - 106.25		12.29	649.57	0.019	0.39	1178.68	0.000
	106.25 - 105		12.40	655.98	0.019	0.39	1207.68	0.000
	105 - 103.75		12.50	662.30	0.019	0.39	1236.86	0.000
	103.75 - 102.5		12.60	668.54	0.019	0.39	1266.21	0.000
	102.5 - 101.25		12.70	674.69	0.019	0.39	1295.72	0.000
	101.25 - 100		12.81	680.76	0.019	0.39	1325.40	0.000
	100 - 98.75		12.91	686.74	0.019	0.39	1355.23	0.000
	98.75 - 97.5		13.65	692.63	0.020	1.86	1385.21	0.001
	97.5 - 96.25		13.81	698.44	0.020	1.89	1415.32	0.001
	96.25 - 95		13.98	704.16	0.020	1.92	1445.57	0.001
	95 - 93.75		14.14	709.80	0.020	1.94	1475.93	0.001
	93.75 - 92.5		14.30	715.36	0.020	1.97	1506.43	0.001
	92.5 - 91.25		14.47	720.82	0.020	2.00	1537.03	0.001
	91.25 - 90		14.63	726.20	0.020	2.03	1567.72	0.001
	90 - 88.75		14.80	731.50	0.020	2.06	1598.53	0.001
	88.75 - 87.5		14.97	736.71	0.020	2.09	1629.43	0.001
	87.5 - 86.25		15.14	741.83	0.020	2.12	1660.40	0.001
	86.25 - 85		15.32	746.87	0.021	2.15	1691.46	0.001
L3	85 - 84	TP35.691x27.61x0.3722	17.39	1226.93	0.014	2.15	2704.55	0.001
	84 - 83		17.46	1250.72	0.014	2.15	2813.08	0.001
	83 - 82		17.53	1274.52	0.014	2.15	2923.75	0.001
	82 - 81		17.60	1298.32	0.014	2.15	3036.55	0.001
	81 - 80		17.68	1322.11	0.013	2.15	3151.48	0.001
	80 - 79		17.75	1345.91	0.013	2.15	3268.56	0.001
	79 - 78		17.83	1369.70	0.013	2.15	3387.77	0.001
	78 - 77		17.92	1393.50	0.013	2.15	3509.11	0.001
	77 - 76		18.00	1417.30	0.013	2.15	3632.58	0.001
	76 - 75		18.09	1438.02	0.013	2.15	3758.20	0.001
	75 - 74		18.18	1454.20	0.012	2.15	3877.65	0.001
	74 - 73		18.26	1470.13	0.012	2.15	3986.51	0.001
	73 - 72		18.36	1485.82	0.012	2.15	4096.13	0.001
	72 - 71		18.45	1501.26	0.012	2.15	4206.49	0.001
	71 - 70		18.54	1516.45	0.012	2.15	4317.56	0.000
L4	70 - 69	TP38.058x35.691x0.3918	18.63	1628.52	0.011	2.15	4773.62	0.000
	69 - 68		18.73	1633.38	0.011	2.15	4809.34	0.000
	68 - 67		18.82	1638.23	0.011	2.15	4845.14	0.000
	67 - 66		18.91	1643.06	0.012	2.15	4881.00	0.000
	66 - 65		19.00	1647.86	0.012	2.15	4916.93	0.000
	65 - 64		19.09	1652.64	0.012	2.15	4952.91	0.000
	64 - 63		19.18	1657.40	0.012	2.15	4988.96	0.000
	63 - 62		19.27	1662.15	0.012	2.15	5025.07	0.000
	62 - 61		19.36	1666.87	0.012	2.15	5061.24	0.000
	61 - 60		19.45	1671.56	0.012	2.15	5097.48	0.000
	60 - 59		19.54	1676.24	0.012	2.15	5133.77	0.000
	59 - 58		19.63	1680.90	0.012	2.15	5170.11	0.000
	58 - 57		19.72	1685.53	0.012	2.15	5206.52	0.000
	57 - 56		19.82	1690.15	0.012	2.15	5242.98	0.000
	56 - 55		19.91	1694.74	0.012	2.15	5279.49	0.000
L5	55 - 53.825	TP41.576x38.058x0.472	20.01	2115.36	0.009	2.15	6597.50	0.000
	53.825 - 52.65		20.11	2125.21	0.009	2.15	6659.36	0.000
	52.65 - 51.475		20.21	2135.07	0.009	2.15	6721.51	0.000
	51.475 - 50.3		20.31	2144.92	0.009	2.15	6783.95	0.000
	50.3 - 49.125		20.41	2154.78	0.009	2.15	6846.67	0.000
	49.125 - 47.95		20.51	2164.63	0.009	2.15	6909.68	0.000
	47.95 - 46.775		20.61	2174.48	0.009	2.15	6972.99	0.000
	46.775 - 45.6		20.71	2184.34	0.009	2.15	7036.58	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	45.6 - 44.425		20.81	2194.19	0.009	2.14	7100.46	0.000
	44.425 - 43.25		20.91	2204.04	0.009	2.14	7164.63	0.000
	43.25 - 42.075		21.01	2213.90	0.009	2.14	7229.09	0.000
	42.075 - 40.9		21.11	2223.75	0.009	2.14	7293.83	0.000
	40.9 - 39.725		21.21	2233.60	0.009	2.14	7358.87	0.000
	39.725 - 38.55		21.31	2243.46	0.009	2.14	7424.19	0.000
	38.55 - 37.375		21.41	2253.31	0.010	2.14	7489.81	0.000
	37.375 - 36.2		21.51	2263.17	0.010	2.14	7555.71	0.000
	36.2 - 35.025		21.61	2273.02	0.010	2.14	7621.90	0.000
	35.025 - 33.85		21.71	2282.87	0.010	2.14	7688.37	0.000
	33.85 - 32.675		21.81	2292.73	0.010	2.14	7755.14	0.000
	32.675 - 31.5		21.91	2302.58	0.010	2.14	7822.20	0.000
L6	31.5 - 30.4688	TP44.046x41.576x0.4977	21.99	2435.35	0.009	2.14	8295.96	0.000
	30.4688 - 29.4375		22.07	2444.47	0.009	2.14	8358.42	0.000
	29.4375 - 28.4063		22.14	2453.59	0.009	2.14	8421.17	0.000
	28.4063 - 27.375		22.22	2462.70	0.009	2.14	8484.08	0.000
	27.375 - 26.3438		22.30	2471.82	0.009	2.14	8547.33	0.000
	26.3438 - 25.3125		22.38	2480.94	0.009	2.14	8610.75	0.000
	25.3125 - 24.2813		22.46	2490.06	0.009	2.14	8674.33	0.000
	24.2813 - 23.25		22.53	2499.18	0.009	2.14	8738.25	0.000
	23.25 - 22.2188		22.61	2508.29	0.009	2.14	8802.42	0.000
	22.2188 - 21.1875		22.69	2517.41	0.009	2.14	8866.75	0.000
	21.1875 - 20.1563		22.77	2526.53	0.009	2.14	8931.33	0.000
	20.1563 - 19.125		22.85	2535.65	0.009	2.14	8996.17	0.000
	19.125 - 18.0938		22.92	2544.77	0.009	2.14	9061.25	0.000
	18.0938 - 17.0625		23.00	2553.88	0.009	2.14	9126.50	0.000
	17.0625 - 16.0313		23.08	2561.77	0.009	2.14	9187.67	0.000
	16.0313 - 15		23.15	2568.04	0.009	2.14	9243.08	0.000
L7	15 - 14	TP52.064x44.046x0.5362	23.23	2802.81	0.008	2.14	9951.08	0.000
	14 - 13		23.31	2836.82	0.008	2.14	10198.08	0.000
	13 - 12		23.39	2870.84	0.008	2.14	10448.08	0.000
	12 - 11		23.47	2904.85	0.008	2.14	10701.17	0.000
	11 - 10		23.55	2938.87	0.008	2.14	10957.25	0.000
	10 - 9		23.64	2972.88	0.008	2.14	11216.33	0.000
	9 - 8		23.72	2995.48	0.008	2.14	11478.50	0.000
	8 - 7		23.81	3018.55	0.008	2.14	11699.08	0.000
	7 - 6		23.90	3041.38	0.008	2.14	11923.50	0.000
	6 - 5		23.99	3063.96	0.008	2.14	12149.08	0.000
	5 - 4		24.08	3086.30	0.008	2.14	12375.67	0.000
	4 - 3		24.17	3108.40	0.008	2.14	12603.25	0.000
	3 - 2		24.26	3130.26	0.008	2.14	12831.83	0.000
	2 - 1		24.36	3151.88	0.008	2.14	13061.42	0.000
	1 - 0		24.45	3173.25	0.008	2.14	13291.92	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 148	0.005	0.101	0.000	0.011	0.001	0.106 ✔	1.000	4.8.2 ✔
	148 - 146	0.005	0.132	0.000	0.011	0.001	0.138 ✔	1.000	4.8.2 ✔
	146 - 144	0.006	0.162	0.000	0.012	0.001	0.168 ✔	1.000	4.8.2 ✔
	144 - 142	0.010	0.210	0.000	0.021	0.001	0.221 ✔	1.000	4.8.2 ✔
	142 - 140	0.010	0.264	0.000	0.021	0.001	0.274 ✔	1.000	4.8.2 ✔
	140 - 138	0.010	0.316	0.000	0.021	0.001	0.327 ✔	1.000	4.8.2 ✔
	138 - 136	0.011	0.365	0.000	0.021	0.001	0.376 ✔	1.000	4.8.2 ✔
	136 - 134	0.011	0.413	0.000	0.021	0.001	0.424 ✔	1.000	4.8.2 ✔
	134 - 132	0.011	0.458	0.000	0.021	0.001	0.470 ✔	1.000	4.8.2 ✔
	132 - 130	0.015	0.536	0.000	0.033	0.001	0.552 ✔	1.000	4.8.2 ✔
	130 - 128	0.015	0.611	0.000	0.033	0.001	0.627 ✔	1.000	4.8.2 ✔
	128 - 126	0.015	0.681	0.000	0.033	0.001	0.697 ✔	1.000	4.8.2 ✔
	126 - 124	0.015	0.749	0.000	0.033	0.001	0.765 ✔	1.000	4.8.2 ✔
	124 - 122	0.015	0.813	0.000	0.033	0.001	0.829 ✔	1.000	4.8.2 ✔
	122 - 120	0.015	0.875	0.000	0.033	0.001	0.891 ✔	1.000	4.8.2 ✔
	120 - 118.5	0.016	0.919	0.000	0.033	0.001	0.936 ✔	1.000	4.8.2 ✔
	118.5 - 118	0.003	0.097	0.000	0.028	0.002	0.100 ✔	1.000	4.8.2 ✔
	118 - 116	0.003	0.079	0.000	0.028	0.002	0.082 ✔	1.000	4.8.2 ✔
	116 - 114	0.003	0.075	0.000	0.028	0.001	0.079 ✔	1.000	4.8.2 ✔
	114 - 112	0.003	0.139	0.000	0.028	0.001	0.143 ✔	1.000	4.8.2 ✔
	112 - 110	0.003	0.201	0.000	0.028	0.001	0.205 ✔	1.000	4.8.2 ✔
L2	110 - 108.75	0.002	0.162	0.000	0.019	0.000	0.165 ✔	1.000	4.8.2 ✔
	108.75 - 107.5	0.003	0.184	0.000	0.019	0.000	0.187 ✔	1.000	4.8.2 ✔
	107.5 - 106.25	0.003	0.205	0.000	0.019	0.000	0.208 ✔	1.000	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	106.25 - 105	0.003	0.226	0.000	0.019	0.000	0.229 ✔	1.000	4.8.2 ✔
	105 - 103.75	0.003	0.246	0.000	0.019	0.000	0.250 ✔	1.000	4.8.2 ✔
	103.75 - 102.5	0.003	0.266	0.000	0.019	0.000	0.269 ✔	1.000	4.8.2 ✔
	102.5 - 101.25	0.003	0.284	0.000	0.019	0.000	0.288 ✔	1.000	4.8.2 ✔
	101.25 - 100	0.003	0.302	0.000	0.019	0.000	0.306 ✔	1.000	4.8.2 ✔
	100 - 98.75	0.003	0.320	0.000	0.019	0.000	0.324 ✔	1.000	4.8.2 ✔
	98.75 - 97.5	0.004	0.336	0.000	0.020	0.001	0.341 ✔	1.000	4.8.2 ✔
	97.5 - 96.25	0.004	0.354	0.000	0.020	0.001	0.358 ✔	1.000	4.8.2 ✔
	96.25 - 95	0.004	0.371	0.000	0.020	0.001	0.375 ✔	1.000	4.8.2 ✔
	95 - 93.75	0.004	0.388	0.000	0.020	0.001	0.392 ✔	1.000	4.8.2 ✔
	93.75 - 92.5	0.004	0.404	0.000	0.020	0.001	0.408 ✔	1.000	4.8.2 ✔
	92.5 - 91.25	0.004	0.419	0.000	0.020	0.001	0.424 ✔	1.000	4.8.2 ✔
	91.25 - 90	0.004	0.435	0.000	0.020	0.001	0.440 ✔	1.000	4.8.2 ✔
	90 - 88.75	0.005	0.450	0.000	0.020	0.001	0.455 ✔	1.000	4.8.2 ✔
	88.75 - 87.5	0.005	0.464	0.000	0.020	0.001	0.470 ✔	1.000	4.8.2 ✔
	87.5 - 86.25	0.005	0.479	0.000	0.020	0.001	0.484 ✔	1.000	4.8.2 ✔
	86.25 - 85	0.005	0.493	0.000	0.021	0.001	0.498 ✔	1.000	4.8.2 ✔
L3	85 - 84	0.008	0.605	0.000	0.014	0.001	0.613 ✔	1.000	4.8.2 ✔
	84 - 83	0.008	0.594	0.000	0.014	0.001	0.602 ✔	1.000	4.8.2 ✔
	83 - 82	0.008	0.583	0.000	0.014	0.001	0.592 ✔	1.000	4.8.2 ✔
	82 - 81	0.008	0.573	0.000	0.014	0.001	0.582 ✔	1.000	4.8.2 ✔
	81 - 80	0.008	0.564	0.000	0.013	0.001	0.572 ✔	1.000	4.8.2 ✔
	80 - 79	0.008	0.554	0.000	0.013	0.001	0.563 ✔	1.000	4.8.2 ✔
	79 - 78	0.008	0.546	0.000	0.013	0.001	0.554 ✔	1.000	4.8.2 ✔
	78 - 77	0.008	0.537	0.000	0.013	0.001	0.545 ✔	1.000	4.8.2 ✔
	77 - 76	0.008	0.529	0.000	0.013	0.001	0.537 ✔	1.000	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	76 - 75	0.008	0.521	0.000	0.013	0.001	0.529	1.000	4.8.2
	75 - 74	0.008	0.514	0.000	0.012	0.001	0.522	1.000	4.8.2
	74 - 73	0.008	0.509	0.000	0.012	0.001	0.517	1.000	4.8.2
	73 - 72	0.008	0.505	0.000	0.012	0.001	0.513	1.000	4.8.2
	72 - 71	0.008	0.500	0.000	0.012	0.001	0.508	1.000	4.8.2
	71 - 70	0.008	0.496	0.000	0.012	0.000	0.504	1.000	4.8.2
L4	70 - 69	0.007	0.464	0.000	0.011	0.000	0.472	1.000	4.8.2
	69 - 68	0.007	0.469	0.000	0.011	0.000	0.476	1.000	4.8.2
	68 - 67	0.007	0.473	0.000	0.011	0.000	0.481	1.000	4.8.2
	67 - 66	0.007	0.478	0.000	0.012	0.000	0.485	1.000	4.8.2
	66 - 65	0.008	0.482	0.000	0.012	0.000	0.490	1.000	4.8.2
	65 - 64	0.008	0.486	0.000	0.012	0.000	0.494	1.000	4.8.2
	64 - 63	0.008	0.491	0.000	0.012	0.000	0.498	1.000	4.8.2
	63 - 62	0.008	0.495	0.000	0.012	0.000	0.503	1.000	4.8.2
	62 - 61	0.008	0.499	0.000	0.012	0.000	0.507	1.000	4.8.2
	61 - 60	0.008	0.503	0.000	0.012	0.000	0.511	1.000	4.8.2
	60 - 59	0.008	0.507	0.000	0.012	0.000	0.515	1.000	4.8.2
	59 - 58	0.008	0.512	0.000	0.012	0.000	0.520	1.000	4.8.2
	58 - 57	0.008	0.516	0.000	0.012	0.000	0.524	1.000	4.8.2
	57 - 56	0.008	0.520	0.000	0.012	0.000	0.528	1.000	4.8.2
	56 - 55	0.008	0.524	0.000	0.012	0.000	0.532	1.000	4.8.2
L5	55 - 53.825	0.007	0.427	0.000	0.009	0.000	0.433	1.000	4.8.2
	53.825 - 52.65	0.007	0.430	0.000	0.009	0.000	0.437	1.000	4.8.2
	52.65 - 51.475	0.007	0.433	0.000	0.009	0.000	0.440	1.000	4.8.2
	51.475 - 50.3	0.007	0.436	0.000	0.009	0.000	0.443	1.000	4.8.2
	50.3 - 49.125	0.007	0.439	0.000	0.009	0.000	0.446	1.000	4.8.2

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	49.125 - 47.95	0.007	0.442	0.000	0.009	0.000	0.449	1.000	4.8.2
	47.95 - 46.775	0.007	0.445	0.000	0.009	0.000	0.452	1.000	4.8.2
	46.775 - 45.6	0.007	0.448	0.000	0.009	0.000	0.455	1.000	4.8.2
	45.6 - 44.425	0.007	0.451	0.000	0.009	0.000	0.458	1.000	4.8.2
	44.425 - 43.25	0.007	0.454	0.000	0.009	0.000	0.461	1.000	4.8.2
	43.25 - 42.075	0.007	0.457	0.000	0.009	0.000	0.464	1.000	4.8.2
	42.075 - 40.9	0.007	0.460	0.000	0.009	0.000	0.467	1.000	4.8.2
	40.9 - 39.725	0.007	0.463	0.000	0.009	0.000	0.470	1.000	4.8.2
	39.725 - 38.55	0.007	0.466	0.000	0.009	0.000	0.473	1.000	4.8.2
	38.55 - 37.375	0.007	0.468	0.000	0.010	0.000	0.476	1.000	4.8.2
	37.375 - 36.2	0.007	0.471	0.000	0.010	0.000	0.478	1.000	4.8.2
	36.2 - 35.025	0.007	0.474	0.000	0.010	0.000	0.481	1.000	4.8.2
	35.025 - 33.85	0.007	0.476	0.000	0.010	0.000	0.484	1.000	4.8.2
	33.85 - 32.675	0.007	0.479	0.000	0.010	0.000	0.486	1.000	4.8.2
	32.675 - 31.5	0.007	0.481	0.000	0.010	0.000	0.489	1.000	4.8.2
L6	31.5 - 30.4688	0.007	0.460	0.000	0.009	0.000	0.467	1.000	4.8.2
	30.4688 - 29.4375	0.007	0.462	0.000	0.009	0.000	0.469	1.000	4.8.2
	29.4375 - 28.4063	0.007	0.464	0.000	0.009	0.000	0.471	1.000	4.8.2
	28.4063 - 27.375	0.007	0.466	0.000	0.009	0.000	0.473	1.000	4.8.2
	27.375 - 26.3438	0.007	0.468	0.000	0.009	0.000	0.475	1.000	4.8.2
	26.3438 - 25.3125	0.007	0.470	0.000	0.009	0.000	0.477	1.000	4.8.2
	25.3125 - 24.2813	0.007	0.472	0.000	0.009	0.000	0.479	1.000	4.8.2
	24.2813 - 23.25	0.007	0.474	0.000	0.009	0.000	0.481	1.000	4.8.2
	23.25 - 22.2188	0.007	0.476	0.000	0.009	0.000	0.483	1.000	4.8.2
	22.2188 - 21.1875	0.007	0.478	0.000	0.009	0.000	0.485	1.000	4.8.2
	21.1875 -	0.008	0.479	0.000	0.009	0.000	0.487	1.000	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	20.1563						✔		
	20.1563 - 19.125	0.008	0.481	0.000	0.009	0.000	0.489 ✔	1.000	4.8.2 ✔
	19.125 - 18.0938	0.008	0.483	0.000	0.009	0.000	0.491 ✔	1.000	4.8.2 ✔
	18.0938 - 17.0625	0.008	0.485	0.000	0.009	0.000	0.493 ✔	1.000	4.8.2 ✔
	17.0625 - 16.0313	0.008	0.487	0.000	0.009	0.000	0.495 ✔	1.000	4.8.2 ✔
	16.0313 - 15	0.008	0.489	0.000	0.009	0.000	0.497 ✔	1.000	4.8.2 ✔
L7	15 - 14	0.007	0.455	0.000	0.008	0.000	0.462 ✔	1.000	4.8.2 ✔
	14 - 13	0.007	0.448	0.000	0.008	0.000	0.455 ✔	1.000	4.8.2 ✔
	13 - 12	0.007	0.442	0.000	0.008	0.000	0.449 ✔	1.000	4.8.2 ✔
	12 - 11	0.007	0.436	0.000	0.008	0.000	0.443 ✔	1.000	4.8.2 ✔
	11 - 10	0.007	0.430	0.000	0.008	0.000	0.437 ✔	1.000	4.8.2 ✔
	10 - 9	0.007	0.424	0.000	0.008	0.000	0.432 ✔	1.000	4.8.2 ✔
	9 - 8	0.007	0.419	0.000	0.008	0.000	0.426 ✔	1.000	4.8.2 ✔
	8 - 7	0.007	0.415	0.000	0.008	0.000	0.422 ✔	1.000	4.8.2 ✔
	7 - 6	0.007	0.411	0.000	0.008	0.000	0.418 ✔	1.000	4.8.2 ✔
	6 - 5	0.007	0.408	0.000	0.008	0.000	0.415 ✔	1.000	4.8.2 ✔
	5 - 4	0.007	0.404	0.000	0.008	0.000	0.411 ✔	1.000	4.8.2 ✔
	4 - 3	0.007	0.401	0.000	0.008	0.000	0.408 ✔	1.000	4.8.2 ✔
	3 - 2	0.007	0.397	0.000	0.008	0.000	0.404 ✔	1.000	4.8.2 ✔
	2 - 1	0.007	0.394	0.000	0.008	0.000	0.401 ✔	1.000	4.8.2 ✔
	1 - 0	0.007	0.391	0.000	0.008	0.000	0.398 ✔	1.000	4.8.2 ✔

Reinforcing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L2	118.5 - 85	2 1/2	33.50	2.50	38.4 K=0.80	4.9087	-148.50	281.86	0.527 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	118.5 - 85	2 1/2	0.40	14.65	0.027	0.00	14.65	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L2	118.5 - 85	2 1/2	0.527	0.027	0.000	0.527 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Tension Checks

Reinforcing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L2	118.5 - 85	2 1/2	33.50	2.50	48.0	4.9087	139.43	331.34	0.421 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	118.5 - 85	2 1/2	0.06	14.65	0.004	0.00	14.65	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L2	118.5 - 85	2 1/2	0.421	0.004	0.000	0.421 [1] ✔	1.000	4.8.1 ✔

[1] $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 110	Pole	TP21.25x15x0.1875	1	-12.82	821.20	93.6	Pass
L2	110 - 85	Pole	TP27.61x21.25x0.25	2	49.24	1288.45	49.8	Pass
	118.5 - 85	Reinforcing	2 1/2	8	-148.50	281.86	52.7	Pass
L3	85 - 70	Pole	TP35.691x27.61x0.3722	3	-20.22	2406.26	61.3	Pass
L4	70 - 55	Pole	TP38.058x35.691x0.3918	4	-27.26	3389.48	53.2	Pass
L5	55 - 31.5	Pole	TP41.576x38.058x0.472	5	-34.28	4605.16	48.9	Pass
L6	31.5 - 15	Pole	TP44.046x41.576x0.4977	6	-39.78	5136.07	49.7	Pass
L7	15 - 0	Pole	TP52.064x44.046x0.5362	7	-39.80	5537.58	46.2	Pass
							Summary	
						Pole (L1)	93.6	Pass
						Reinforcing (L2)	52.7	Pass
						RATING =	**93.6**	**Pass**

Base Plate & Anchor Rod Analysis

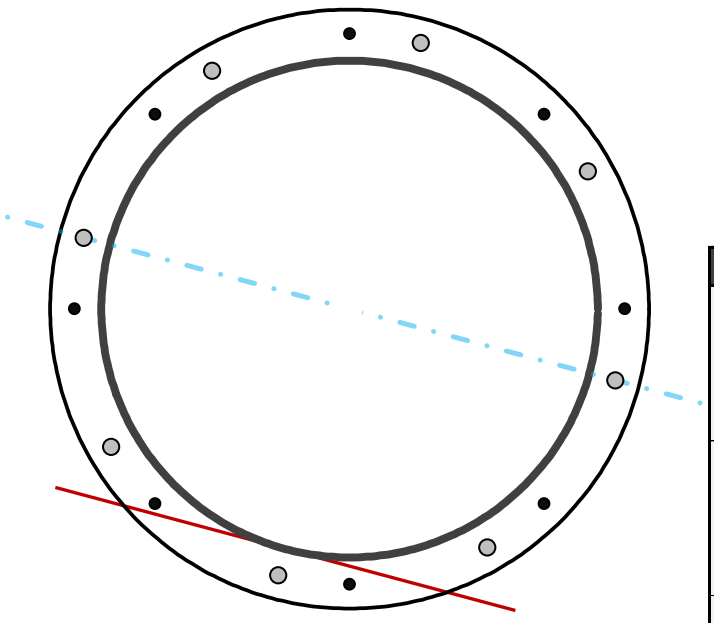
Pole Dimensions		
Shape	Round	-
Diameter	52.064	in
Thickness	0.375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2578.0	k-ft
Axial, Pu	45.0	k
Shear, Vu	24.0	k
Neutral Axis	165	°

Report Capacities		
Component	Capacity	Result
Base Plate	38%	Pass
Anchor Rods	72%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	63.084	in
Thickness	2	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	680.3	k
Bending Stress, ϕMn	1774.8	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	8	-
Diameter, ø	1 1/2	in
Bolt Circle	58	in
Grade	A325	
Yield Strength, Fy	92	ksi
Tensile Strength, Fu	120	ksi
Spacing	22.8	in
Orientation Offset		°
Applied Force, Pu	78.6	k
Anchor Rods, ϕPn	134.9	k



Additional Anchor Rods		
Quantity	8	-
Diameter, ø	2.25	in
Bolt Circle	58	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Bypass Base?	No	
Orientation Offset	30	°
Applied Force, Pu	188.0	k
Additional Rod, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	24.0	2578.0	1.00
Anchor Rod Forces	16.7	778.4	0.30
Additional Bolt (Grp1) Forces	7.3	1799.6	0.70
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	60.8939	0.1691	0.0080		20339.54
Bolt	1.7671	1.4053	0.1571	6	4728.53
Bolt1	3.9761	3.2477	0.8393	4.5	10931.94
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate

Shape	Round	-
Diameter, D	63.084	in
Thickness, t	2	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	35.622	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

External Base Plate

Chord Length AA	28.867	in
Additional AA	4.000	in
Section Modulus, Z	32.867	in^3
Applied Moment, Mu	680.3	k-ft
Bending Capacity, ϕMn	1774.8	k-ft
Capacity, Mu/ϕMn	0.383	OK
Chord Length AB	28.867	in
Additional AB	4.000	in
Section Modulus, Z	32.867	in^3
Applied Moment, Mu	680.3	k-ft
Bending Capacity, ϕMn	1774.8	k-ft
Capacity, Mu/ϕMn	0.383	OK
Bend Line Length	39.127	in
Additional Bend Line	0.000	in
Section Modulus, Z	39.127	in^3
Applied Moment, Mu	753.9	k-ft
Bending Capacity, ϕMn	2112.9	k-ft
Capacity, Mu/ϕMn	0.357	OK

Internal Base Plate

Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods

Anchor Rod Quantity, N	8	-
Rod Diameter, d	1.5	in
Bolt Circle, BC	58	in
Yield Strength, Fy	92	ksi
Tensile Strength, Fu	120	ksi
Applied Axial, Pu	78.6	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	134.9	k
Tensile Capacity, ϕRnt	0.583	OK
Interaction Capacity	0.583	OK

Additional Bolt Group 1

Bolt Quantity, N	8	-
Bolt Diameter, d	2.25	in
Bolt Circle, BC	58	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	188.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Compressive Capacity, ϕPn	0.724	OK
Interaction Capacity	0.724	OK

Additional Bolt Group 2

Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement

Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	58.944	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners

Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

Vertical Weld

Vert.-to-Stiffener a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, ϕPn	#DIV/0!	k
Vert.-to-Plate a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Horizontal Weld

Horz.-to-Stiffener a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, ϕPn	#DIV/0!	k
Horz.-to-Pole a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Plate Tension

Gross Cross Section	0.000	in^2
Net Cross Section	0.000	in^2
Tensile Capacity, ϕTn	0.0	k
Capacity, Tu/ϕTn	-	

Plate Compression

Radius of Gyration	#DIV/0!	in^3
kl/r	#DIV/0!	-
4.71 $\sqrt{(E/Fy)}$	0.00	-
Buckling Stress(Fe)	0.0	-
Crit. Buckling Stress(Fcr)	0.0	ksi
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn	-	

Base/Flange Plate			
	Plate Type	***Flange***	***@ 15.0 ft***
	Pole Diameter	41.726	in
	Pole Thickness	0.3125	in
	Plate Diameter	54.652	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	589.89	k-in
	Applied	341.23	k-in

Stiffeners		
	#	***0***

Bolts			
	#	***12***	
	Bolt Circle	49.652	in
	(R)adial / (S)quare	R	
●	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	117.64	k

Reinforcement ●		
	#	***0***

Extra Bolts O		
	#	***0***

Code Rev.	***G***	**Date**	8/3/2018
		Engineer	Felix.Buabeng
Moment	2221.7 k-ft	**Site #**	302523
Act. Moment	1501.7 k-ft	**Carrier**	AT&T MOBILITY
Axial	39.5 k		

Required Flange Thickness:

1.52 in OK

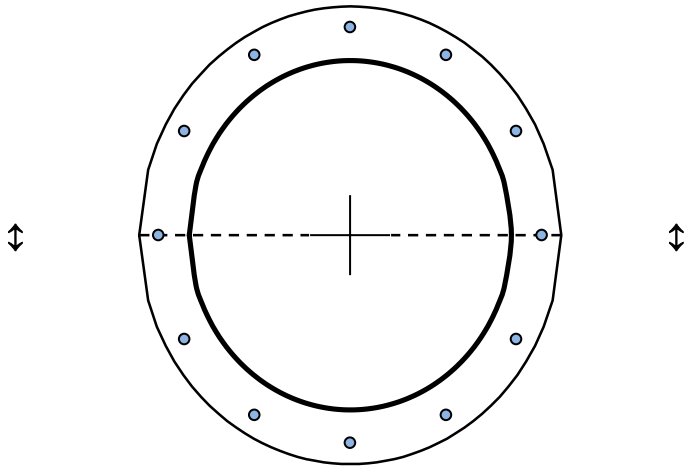


Plate Stress Ratio:

0.58 (Pass)

Bolt Stress Ratio:

0.93 (Pass)

Base/Flange Plate			
	Plate Type	***Flange***	***@ 55.0 ft***
	Pole Diameter	35.742	in
	Pole Thickness	0.25	in
	Plate Diameter	48.456	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	505.29	k-in
	Applied	229.75	k-in

Stiffeners		
	#	***0***

Bolts			
	#	***12***	
	Bolt Circle	43.456	in
	(R)adial / (S)quare	R	
●	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	82.22	k

Reinforcement ●		
	#	***0***

Extra Bolts O		
	#	***0***

Code Rev.	***G***	**Date**	8/3/2018
		Engineer	Felix.Buabeng
Moment	1359.0 k-ft	**Site #**	302523
Act. Moment	918.6 k-ft	**Carrier**	AT&T MOBILITY
Axial	27.6 k		

Required Flange Thickness:

1.35 in OK

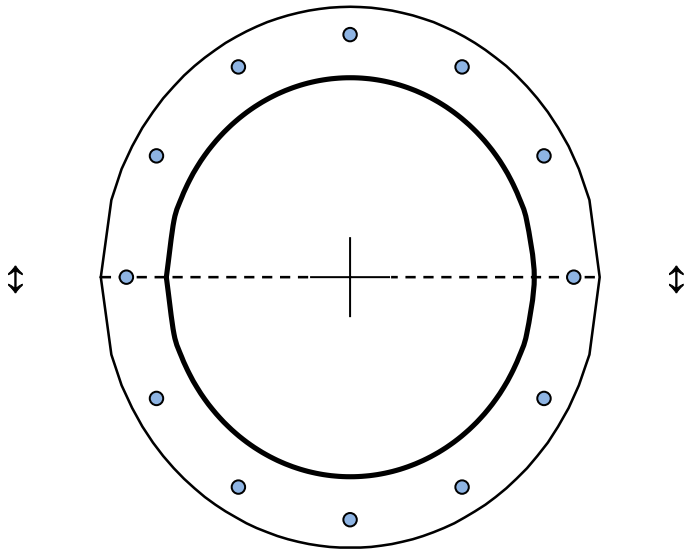


Plate Stress Ratio:

0.45 (Pass)

Bolt Stress Ratio:

0.65 (Pass)

Base/Flange Plate	Plate Type	*Flange*	*@ 110.0 ft*
	Pole Diameter	21.25	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	36	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	170.97	k-in
	Applied	15.76	k-in
Stiffeners	#	*6*	*Show*
	Thickness	0.5	in
	Length	3.5	in
	Height	6	in
	Chamfer	0.5	in
	Offset Angle	0	°
	Fy	50	ksi

Bolts	#	*12*	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	10.96	k
Reinforcement ●	#	*3*	
	DYW. Circle	37.47	in
	Offset Angle	0	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	ϕ_s Resistance	392.70	k
	Applied	106.58	k
Extra Bolts O	#	*0*	

Code Rev. ***G***

Moment 365.6 k-ft

Axial 11.4 k

Date 8/3/2018

Engineer felix.buabeng

Site # 305778

Carrier AT&T MOBILITY

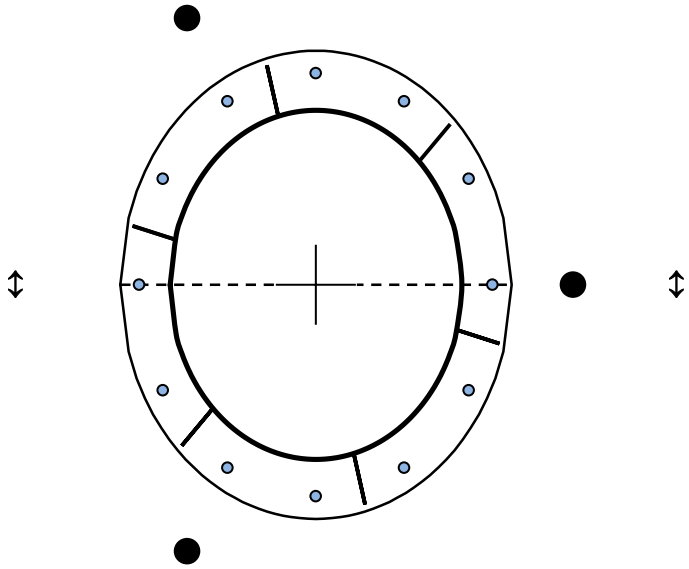


Plate Stress Ratio:

0.09 (Pass)

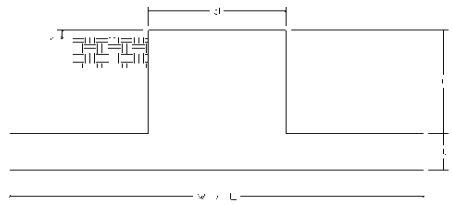
Bolt Stress Ratio:

0.20 (Pass)

Reinforcement Stress Ratio:

0.27 (Pass)

Site Name:	New Milford CT2, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302523		
Engineering Number:	OAA737030		
Engineer:	Felix.Buabeng		
Date:	08/03/18		
Tower Type:	MP		



Design Loads (Factored) - Analysis per TIA-222-G Standards

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	45.0	k	Concrete Strength (f'_c):	3000	psi
Uplift/Leg:	0.0	k	Pad Tension Steel Depth:	32.00	in
Total Shear:	24.0	k	ϕ_{Shear}:	0.75	
Moment:	2578.0	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	45.0	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	8.00	ft	β:	0.85	
Diameter of Pier (d):	12.00	ft	Bottom Pad Rebar Size #:	10	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	36	
Width of Pad (W):	18.00	ft	Pad Bottom Steel Area:	45.72	in^2
Length of Pad (L):	18.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.00	ft	Top Pad Rebar Size #:	5	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	11.16	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	99.00	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	14	
Unit Weight of Soil Above Water Table:	115.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	136.0	in
Unit Weight of Soil Below Water Table:	52.6	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	30.0	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.50		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	37700.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	900.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	2782.0	k-ft
OTM Resistance:	3580.8	k-ft
Design OTM / OTM Resistance:	0.78	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	5149	psf
Factored Nominal Bearing Pressure:	28275	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.18	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

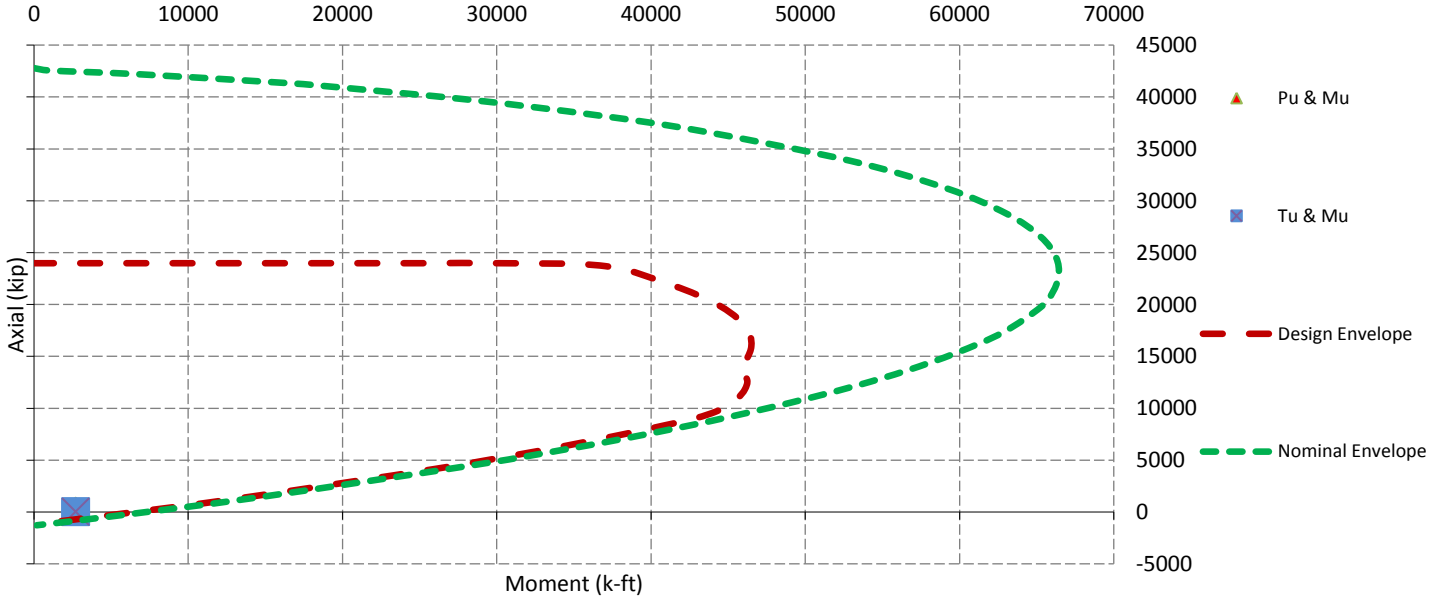
Sliding Factor of Safety

Total Factored Sliding Resistance:	182.0	k
Sliding Design / Sliding Resistance:	0.13	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	67.9	k
One Way Shear Capacity (ϕV_c):	256.3	k - ACI11.3.1.1
V_u / ϕV_c:	0.26	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	392.1	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	4312.7	k-ft - ACI10.3
M_u / ϕM_n:	0.09	Result: OK
Load Direction Controling Flexural Capacity:	Diagonal to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	132.8	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	1581.1	k-ft
M_u / ϕM_n:	0.08	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0066	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0016	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	2907.3	k - ACI11.12.2.1
V_u / ϕV_c:	0.00	Result: OK
Factored Moment in Pier (M_u):	2710.0	k-ft
Pier Moment Capacity (ϕM_n):	6560.9	k-ft
M_u / ϕM_n:	0.41	Result: OK
Factored Shear in Pier (V_u):	24.0	k
Pier Shear Capacity (ϕV_n):	1339.9	k
V_u / ϕV_c:	0.02	Result: OK
Pier Shear Reinforcement Ratio:	0.0001	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	1179.4	k
T_u / ϕT_n:	0.00	Result: OK
Factored Compression in Pier (P_u):	45.0	k
Pier Compression Capacity (ϕP_n):	21566.3	k - ACI10.3.6.2
P_u / ϕP_n:	0.00	Result: OK
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.41	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



July 9, 2018
August 31, 2018 (Rev.1)

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT2155 (LTE 3C/4C/5C)
	FA Number:	10035014
	PACE Number:	MRCTB018291
	PT Number:	2051A0661V
	Site Name:	New Milford (CT2155)
	Site Address:	4 Elkington Farm Road New Milford, CT 06776

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0"– Wt. = 35 lbs. /each)
- (1) 800-10764 Antenna (55.0"x11.8"x6.0"– Wt. = 41 lbs. /each)
- (2) AM-X-CD-16-65-00T-RET Antennas (72.0"x11.8"x5.9"– Wt. = 49 lbs. /each)
- (3) RRUS-11 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (3) RRUS-12 RRH's (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each)
- (3) TT19-08BP111-001 TMA's (9.9"x6.7"x5.4" – Wt. = 16 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(1) 800-10767 Antenna (57.0"x14.8"x6.7"– Wt. = 64 lbs. /each)**
- **(2) 800-10768 Antennas (75.2"x14.8"x6.7"– Wt. = 77 lbs. /each)**
- **(3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)**
- **(3) DBCT108F1V92-1 Diplexers (10.7"x6.8"x7.1" – Wt. = 14 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on June 27, 2018.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2012 with 2005 Connecticut Supplement with 2016 Amendments, and AT&T Mount Technical Directive – R7.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, the max basic wind speed for this site is equal to 100 mph with a max basic wind speed with ice of 40 mph. Per the AT&T Mount Technical Directive and Appendix N of the Connecticut State Building Code, an ultimate wind speed of 115 mph was converted to a nominal wind speed. The minimum wind speed value of 90 mph was used to perform this analysis per the TIA-222-G.
- 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 2; tower is located at the top or crest of an escarpment.
- 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 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new platform reinforcement kit, SitePro1 P/N PRK-1245L (or approved equal).**
- **Reinforce existing 1-1/2"x2-1/2"x1/4" steel angles with new 1-1/2"x2-1/2"x1/4" steel angles (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	56	LC12	248%	**FAIL**
Modified Mount Rating	85	LC1	60%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

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 existing 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

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

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Structural Dept. Head

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FIELD PHOTOS:











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HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 7/9/2018
Project Name: New Milford
Project Number: CT2155
Designed By: JP **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

	z=	153 (ft)
	z_g=	900 (ft)
K_z= 1.384	α=	9.5

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_e K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}= 1.357874917

(If Category 1 then K_{zt} =1.0)

Category= **2**

K_h=	2.601663	
K_e=	1	(from Table 2-4)
K_t=	0.43	(from Table 2-5)
f=	1.25	(from Table 2-5)
z=	153	
H=	200	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	
K_{iz} =	1.17	(from Sec. 2.6.8)

2.6.8 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in

$t_{iz} = 2.0*t_i*I*K_{iz}*(Kzt)^{0.35}$ t_{iz} = 2.33 in

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2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	153	Gh=	0.85

2.6.7.2 Guyed Masts Gh= 0.85

2.6.7.3 Pole Structures Gh= 1.1

2.6.9 Appurtenances Gh= 1.0

2.6.7.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh=	1.35	**Gh=**	**1.00**

2.6.9.2 Design Wind Force on Appurtenances

State Code Ultimate Design Wind Speed: V_{ult} = 115 mph

Nomial Design Wind Speed, $V_{asd} = V_{ult}\sqrt{(0.6)}$ V_{asd} = 89 mph

V_{asd} per the AT&T Mount Technical Directive and Connecticut State Building Code, Latest Edition.

Per TIA-222-G, V_{min} = 90 mph V_{max} = 100 mph

$F = q_z * Gh * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_d * V_{max}^2 * I$

q_z=	**27.27**	K_z=	1.384
$q_{z\,(ice)}$=	**5.39**	K_{zt}=	1.0
$q_{z\,(30)}$=	**3.03**	K_d=	0.95
		V_{asd}=	90 mph
		$V_{max\,(ice)}$=	40 mph
		V_{30}=	30 mph
		I=	1.0

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

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Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 2.33 in | **Angle =** 0 (deg) | **Equivalent Angle =** 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	150	46	17
800-10768 Antenna	75.2	14.8	6.7	7.73	5.08	1.31	277	76	31
AM-X-CD-16-65-00T-RET Antenn	72.0	11.8	5.9	5.90	6.10	1.36	219	64	24
800-10767 Antenna	57.0	14.8	6.7	5.86	3.85	1.26	201	57	22
800-10764 Antenna	55.0	11.8	6.0	4.51	4.66	1.30	159	48	18
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	75	24	8
RRUS-11 RRH	19.7	17.0	7.2	2.33	1.16	1.20	76	24	8
RRUS-11 (Shielded)	19.7	5.2	7.2	0.71	3.79	1.26	24	11	3
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.10	1.20	86	26	10
RRUS-12 RRH (Shielded)	20.4	6.7	7.5	0.95	3.04	1.22	32	13	4
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	1.48	1.20	15	7	2
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	31	11	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	6	5	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	10	6	1
1-1/2x1-1/2 Angle	2.0	12.0		0.17	0.17	2.00	9	8	1
HSS 3x3	3.0	12.0		0.25	0.25	2.00	14	10	2

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WIND LOADS

Angle =	30	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	150	80	133
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	277	147	245
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	219	127	196
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	201	105	177
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	159	92	142
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	75	45	67
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	76	33	65
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	38	33	37
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	86	35	73
RRUS-12 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	43	35	41
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	15	12	14

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.00	3.81	6.17	1.26	1.36	44	29	40
800-10768 Antenna	79.9	19.5	11.4	10.79	6.30	4.10	7.03	1.27	1.40	74	48	67
AM-X-CD-16-65-00T-RET Antenna	76.7	16.5	10.6	8.76	5.62	4.66	7.26	1.30	1.41	61	43	57
800-10767 Antenna	61.7	19.5	11.4	8.33	4.87	3.17	5.43	1.23	1.33	55	35	50
800-10764 Antenna	59.7	16.5	10.7	6.82	4.42	3.62	5.60	1.25	1.34	46	32	42
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	24	17	22
RRUS-11 RRH	24.4	21.7	11.9	3.67	2.01	1.12	2.05	1.20	1.20	24	13	21
RRUS-11 (Shielded)	24.4	10.8	11.9	1.83	2.01	2.25	2.05	1.20	1.20	12	13	12
RRUS-12 RRH	25.1	23.2	12.2	4.03	2.12	1.08	2.06	1.20	1.20	26	14	23
RRUS-12 RRH (Shielded)	25.1	11.6	12.2	2.02	2.12	2.16	2.06	1.20	1.20	13	14	13
TT19-08BP111-001 TMA	14.6	11.4	10.1	1.15	1.02	1.28	1.45	1.20	1.20	7	7	7
Surge Arrestor	28.7	14.4	14.4	2.86	2.86	2.00	2.00	1.20	1.20	18	18	18

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	15
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	31	16	27
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	24	14	22
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	22	12	20
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	18	10	16
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	4	7
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	4	4
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	10	4	8
RRUS-12 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	5	4	5
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	2	1	2

Date: 7/9/2018
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Designed By: JP Checked By: MSC

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WIND LOADS

Angle = 60 (deg) | Ice Thickness = 2.33 in. | Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	150	80	97
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	277	147	180
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	219	127	150
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	201	105	129
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	159	92	109
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	75	45	53
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	76	33	43
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	57	33	39
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	86	35	48
RRUS-12 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	64	35	42
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	15	12	13

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.00	3.81	6.17	1.26	1.36	44	29	33
800-10768 Antenna	79.9	19.5	11.4	10.79	6.30	4.10	7.03	1.27	1.40	74	48	54
AM-X-CD-16-65-00T-RET Antenna	76.7	16.5	10.6	8.76	5.62	4.66	7.26	1.30	1.41	61	43	47
800-10767 Antenna	61.7	19.5	11.4	8.33	4.87	3.17	5.43	1.23	1.33	55	35	40
800-10764 Antenna	59.7	16.5	10.7	6.82	4.42	3.62	5.60	1.25	1.34	46	32	35
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	24	17	19
RRUS-11 RRH	24.4	21.7	11.9	3.67	2.01	1.12	2.05	1.20	1.20	24	13	16
RRUS-11 (Shielded)	24.4	16.2	11.9	2.75	2.01	1.50	2.05	1.20	1.20	18	13	14
RRUS-12 RRH	25.1	23.2	12.2	4.03	2.12	1.08	2.06	1.20	1.20	26	14	17
RRUS-12 RRH (Shielded)	25.1	17.4	12.2	3.02	2.12	1.44	2.06	1.20	1.20	20	14	15
TT19-08BP111-001 TMA	14.6	11.4	10.1	1.15	1.02	1.28	1.45	1.20	1.20	7	7	7
Surge Arrestor	28.7	14.4	14.4	2.86	2.86	2.00	2.00	1.20	1.20	18	18	18

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	11
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	31	16	20
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	24	14	17
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	22	12	14
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	18	10	12
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	6
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	4	5
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	6	4	4
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	10	4	5
RRUS-12 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	7	4	5
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	2	1	1

Date: 7/9/2018
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HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	150	80	80
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	277	147	147
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	219	127	127
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	201	105	105
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	159	92	92
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	75	45	45
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	76	33	33
RRUS-11 (Shielded)	19.7	5.2	7.2	0.71	0.99	3.79	2.74	1.26	1.21	24	33	33
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	86	35	35
RRUS-12 RRH (Shielded)	20.4	6.7	7.5	0.95	1.06	3.04	2.72	1.22	1.21	32	35	35
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	15	12	12

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.00	3.81	6.17	1.26	1.36	44	29	29
800-10768 Antenna	79.9	19.5	11.4	10.79	6.30	4.10	7.03	1.27	1.40	74	48	48
AM-X-CD-16-65-00T-RET Antenna	76.7	16.5	10.6	8.76	5.62	4.66	7.26	1.30	1.41	61	43	43
800-10767 Antenna	61.7	19.5	11.4	8.33	4.87	3.17	5.43	1.23	1.33	55	35	35
800-10764 Antenna	59.7	16.5	10.7	6.82	4.42	3.62	5.60	1.25	1.34	46	32	32
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	24	17	17
RRUS-11 RRH	24.4	21.7	11.9	3.67	2.01	1.12	2.05	1.20	1.20	24	13	13
RRUS-11 (Shielded)	24.4	9.9	11.9	1.67	2.01	2.47	2.05	1.20	1.20	11	13	13
RRUS-12 RRH	25.1	23.2	12.2	4.03	2.12	1.08	2.06	1.20	1.20	26	14	14
RRUS-12 RRH (Shielded)	25.1	11.4	12.2	1.98	2.12	2.21	2.06	1.20	1.20	13	14	14
TT19-08BP111-001 TMA	14.6	11.4	10.1	1.15	1.02	1.28	1.45	1.20	1.20	7	7	7
Surge Arrestor	28.7	14.4	14.4	2.86	2.86	2.00	2.00	1.20	1.20	18	18	18

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	9
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	31	16	16
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	24	14	14
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	22	12	12
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	18	10	10
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	5
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	4	4
RRUS-11 (Shielded)	19.7	5.2	7.2	0.71	0.99	3.79	2.74	1.26	1.21	3	4	4
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	10	4	4
RRUS-12 RRH (Shielded)	20.4	6.7	7.5	0.95	1.06	3.04	2.72	1.22	1.21	4	4	4
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	2	1	1

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Project Name: New Milford
Project Number: CT2155
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	150	80	97
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	277	147	180
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	219	127	150
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	201	105	129
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	159	92	109
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	75	45	53
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	76	33	43
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	57	33	39
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	86	35	48
RRUS-12 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	64	35	42
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	15	12	13

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.00	3.81	6.17	1.26	1.36	44	29	33
800-10768 Antenna	79.9	19.5	11.4	10.79	6.30	4.10	7.03	1.27	1.40	74	48	54
AM-X-CD-16-65-00T-RET Antenna	76.7	16.5	10.6	8.76	5.62	4.66	7.26	1.30	1.41	61	43	47
800-10767 Antenna	61.7	19.5	11.4	8.33	4.87	3.17	5.43	1.23	1.33	55	35	40
800-10764 Antenna	59.7	16.5	10.7	6.82	4.42	3.62	5.60	1.25	1.34	46	32	35
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	24	17	19
RRUS-11 RRH	24.4	21.7	11.9	3.67	2.01	1.12	2.05	1.20	1.20	24	13	16
RRUS-11 (Shielded)	24.4	16.2	11.9	2.75	2.01	1.50	2.05	1.20	1.20	18	13	14
RRUS-12 RRH	25.1	23.2	12.2	4.03	2.12	1.08	2.06	1.20	1.20	26	14	17
RRUS-12 RRH (Shielded)	25.1	17.4	12.2	3.02	2.12	1.44	2.06	1.20	1.20	20	14	15
TT19-08BP111-001 TMA	14.6	11.4	10.1	1.15	1.02	1.28	1.45	1.20	1.20	7	7	7
Surge Arrestor	28.7	14.4	14.4	2.86	2.86	2.00	2.00	1.20	1.20	18	18	18

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	11
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	31	16	20
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	24	14	17
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	22	12	14
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	18	10	12
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	6
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	4	5
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	6	4	4
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	10	4	5
RRUS-12 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	7	4	5
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	2	1	1

Date: 7/9/2018
Project Name: New Milford
Project Number: CT2155
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	150	80	133
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	277	147	245
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	219	127	196
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	201	105	177
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	159	92	142
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	75	45	67
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	76	33	65
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	38	33	37
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	86	35	73
RRUS-12 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	43	35	41
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	15	12	14

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.00	3.81	6.17	1.26	1.36	44	29	40
800-10768 Antenna	79.9	19.5	11.4	10.79	6.30	4.10	7.03	1.27	1.40	74	48	67
AM-X-CD-16-65-00T-RET Antenna	76.7	16.5	10.6	8.76	5.62	4.66	7.26	1.30	1.41	61	43	57
800-10767 Antenna	61.7	19.5	11.4	8.33	4.87	3.17	5.43	1.23	1.33	55	35	50
800-10764 Antenna	59.7	16.5	10.7	6.82	4.42	3.62	5.60	1.25	1.34	46	32	42
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	24	17	22
RRUS-11 RRH	24.4	21.7	11.9	3.67	2.01	1.12	2.05	1.20	1.20	24	13	21
RRUS-11 (Shielded)	24.4	10.8	11.9	1.83	2.01	2.25	2.05	1.20	1.20	12	13	12
RRUS-12 RRH	25.1	23.2	12.2	4.03	2.12	1.08	2.06	1.20	1.20	26	14	23
RRUS-12 RRH (Shielded)	25.1	11.6	12.2	2.02	2.12	2.16	2.06	1.20	1.20	13	14	13
TT19-08BP111-001 TMA	14.6	11.4	10.1	1.15	1.02	1.28	1.45	1.20	1.20	7	7	7
Surge Arrestor	28.7	14.4	14.4	2.86	2.86	2.00	2.00	1.20	1.20	18	18	18

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	15
800-10768 Antenna	75.2	14.8	6.7	7.73	3.50	5.08	11.22	1.31	1.54	31	16	27
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	24	14	22
800-10767 Antenna	57.0	14.8	6.7	5.86	2.65	3.85	8.51	1.26	1.45	22	12	20
800-10764 Antenna	55.0	11.8	6.0	4.51	2.29	4.66	9.17	1.30	1.47	18	10	16
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	4	7
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	4	4
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	10	4	8
RRUS-12 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	5	4	5
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	0.37	1.48	1.83	1.20	1.20	2	1	2

Date: 7/9/2018
Project Name: New Milford
Project Number: CT2155
Designed By: JP **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1 in.
Density of ice: 56 pcf

7770 Antenna Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		70 lbs
Weight of object:	35 lbs	
Combined weight of ice and object:		105 lbs

800-10768 Antenna

Weight of ice based on total radial SF area:

Height (in):	75.2	
Width (in):	14.8	
Depth (in):	6.7	
Total weight of ice on object:		124 lbs
Weight of object:	77 lbs	
Combined weight of ice and object:		201 lbs

AM-X-CD-16-65-00T-RET Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	11.8	
Depth (in):	5.9	
Total weight of ice on object:		99 lbs
Weight of object:	49 lbs	
Combined weight of ice and object:		148 lbs

800-10767 Antenna

Weight of ice based on total radial SF area:

Height (in):	57.0	
Width (in):	14.8	
Depth (in):	6.7	
Total weight of ice on object:		96 lbs
Weight of object:	64 lbs	
Combined weight of ice and object:		160 lbs

800-10764 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.8	
Depth (in):	6.0	
Total weight of ice on object:		78 lbs
Weight of object:	41 lbs	
Combined weight of ice and object:		119 lbs

RRUS-11 RRH

Weight of ice based on total radial SF area:

Height (in):	19.7	
Width (in):	17.0	
Depth (in):	7.2	
Total weight of ice on object:		45 lbs
Weight of object:	51 lbs	
Combined weight of ice and object:		96 lbs

RRUS-12 RRH

Weight of ice based on total radial SF area:

Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		50 lbs
Weight of object:	58 lbs	
Combined weight of ice and object:		108 lbs

RRUS-32 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		45 lbs
Weight of object:	60 lbs	
Combined weight of ice and object:		105 lbs

TT19-08BP111-001 TMA

Weight of ice based on total radial SF area:

Height (in):	9.9	
Width (in):	6.7	
Depth (in):	5.4	
Total weight of ice on object:		13 lbs
Weight of object:	16 lbs	
Combined weight of ice and object:		29 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		35 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		68 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		4 plf

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		5 plf

HSS 3x3

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		6 plf

L 1-1/2x1-1/2x1/4 Angle

Weight of ice based on total radial SF area:

Height (in):	1.5	
Width (in):	1.5	
Per foot weight of ice on object:		4 plf

PL 6x5/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.625	
Per foot weight of ice on object:		7 plf

HUDSON
Design Group LLC

3C/4C/5C Mount Calculations
(Existing Conditions)

Bentley

Current Date: 7/9/2018 11:30 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155.etz\

Bentley

Current Date: 7/9/2018 11:33 AM
Units system: English
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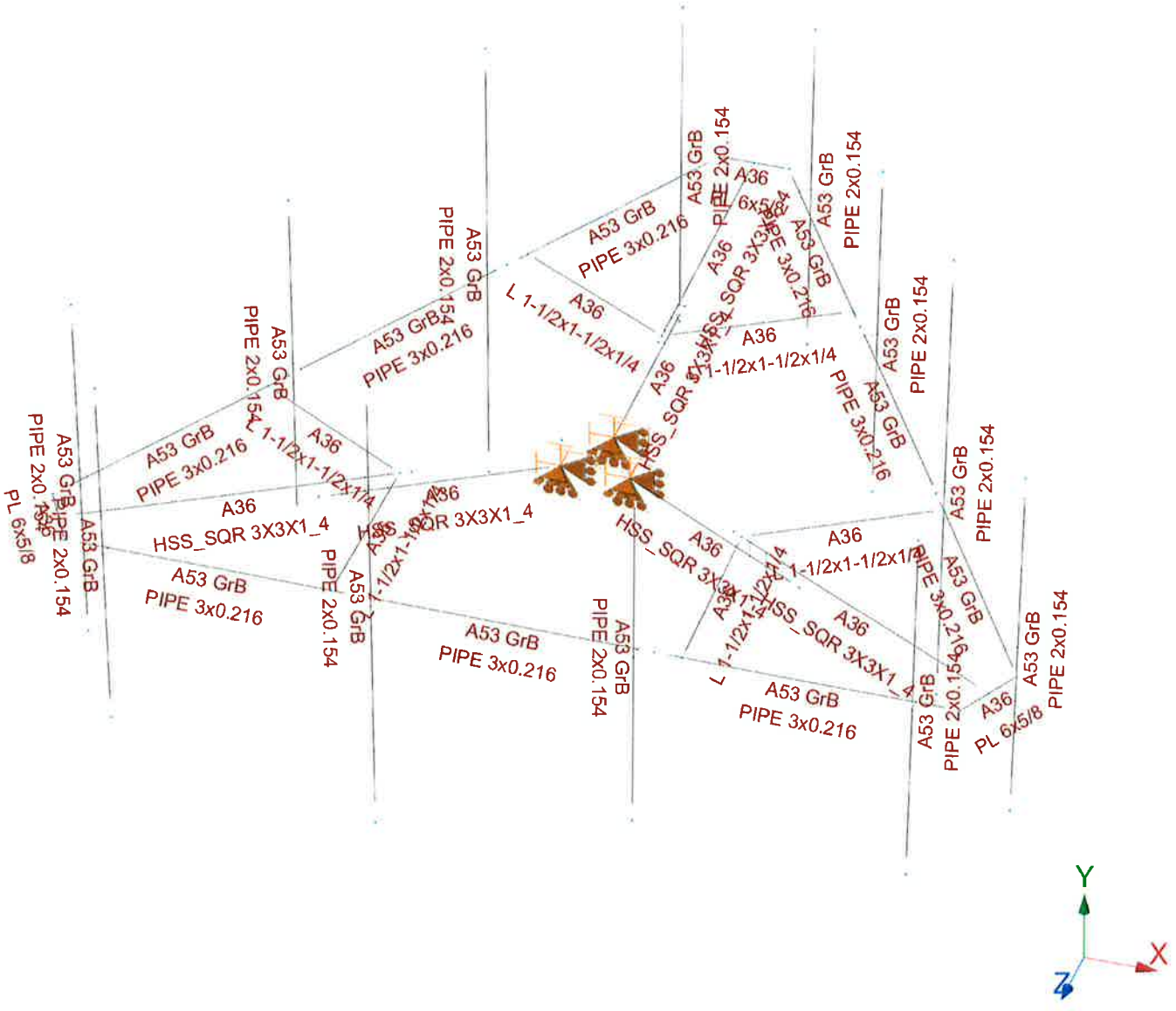

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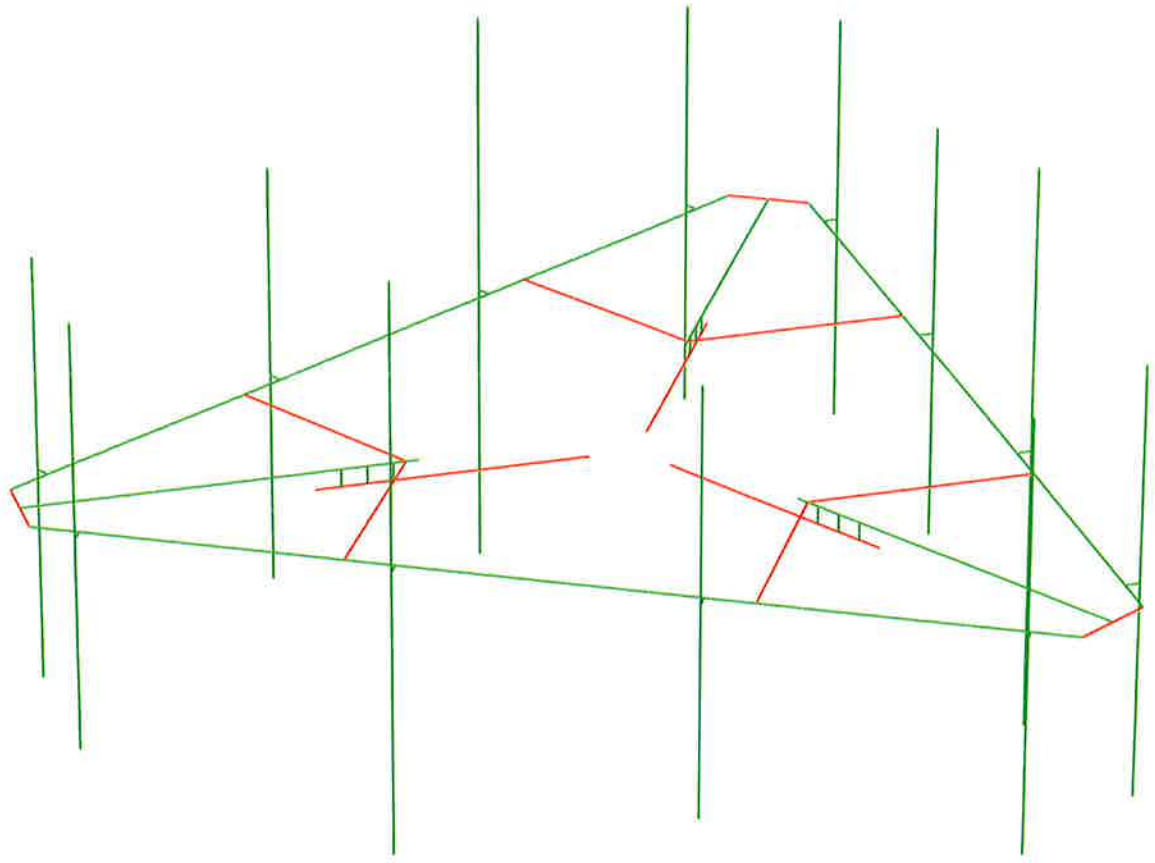
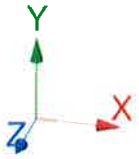
Design status

- Not designed
- Error on design
- Design O.K.
- With warnings





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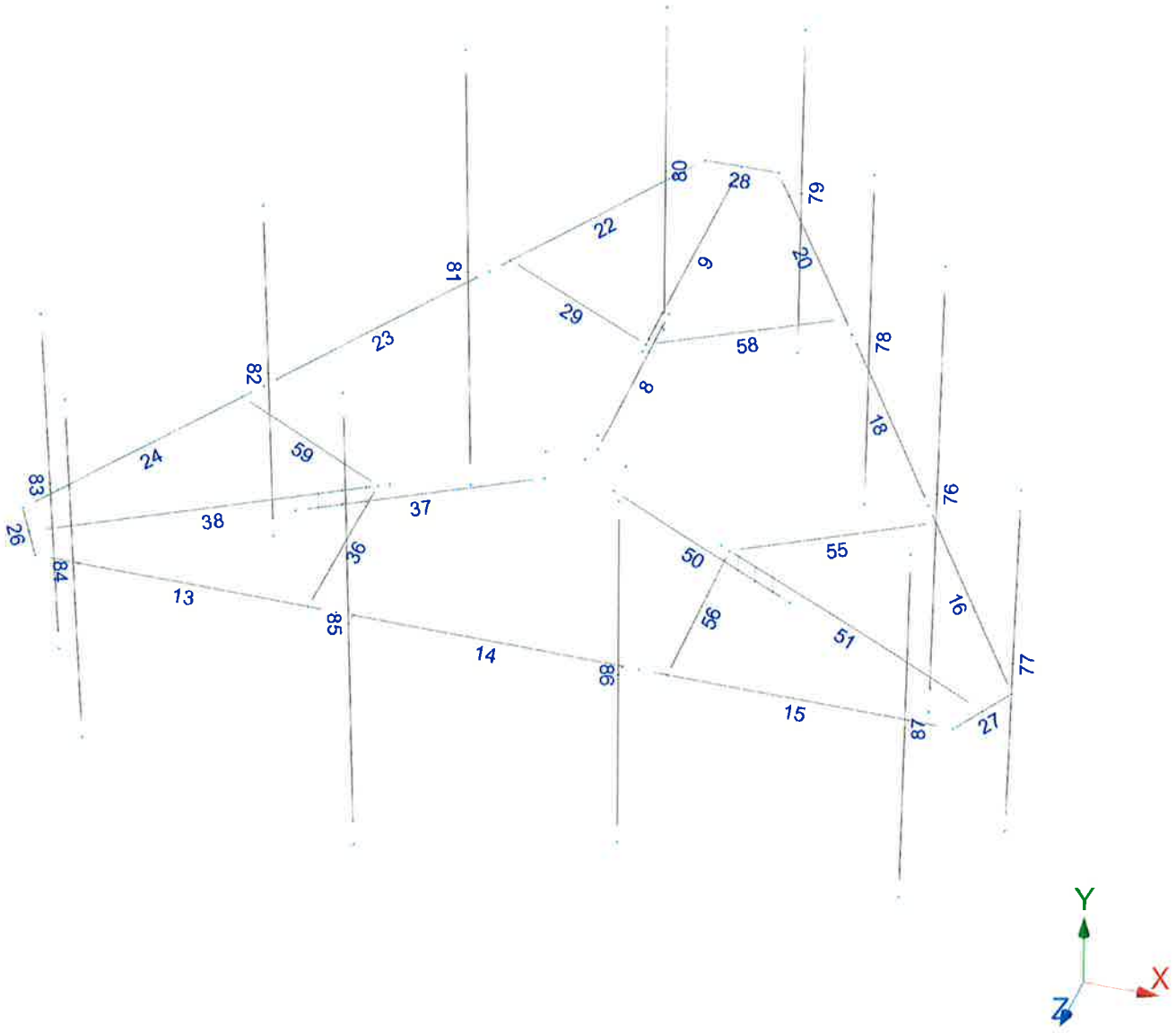

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Current Date: 7/9/2018 11:34 AM
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Load data

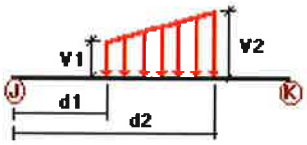
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load on Antenna 1	No	LL
LLa2	500 lb Live Load on Antenna 2	No	LL
LLa3	500 lb Live Load on Antenna 3	No	LL
LLa4	500 lb Live Load on Antenna 4	No	LL
W180	-W0	Yes	
W210	-W30	Yes	
Wi180	-Wi0	Yes	
Wi210	-Wi30	Yes	
WL180	-WL0	Yes	
WL210	-WL30	Yes	

Distributed force on members

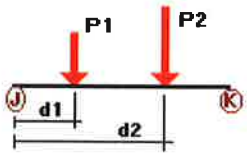


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	9	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	36	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	38	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	51	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	55	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	56	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	58	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	59	Y	-0.01	-0.01	0.00	Yes	100.00	Yes

W0	13	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	14	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	15	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	16	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	18	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	24	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	37	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	38	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	50	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	51	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	55	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	58	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	77	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	78	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	79	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	80	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	81	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	82	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	83	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	84	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	85	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	86	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	87	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
W30	8	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	9	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	16	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	18	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	24	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	36	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	37	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	38	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	50	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	51	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	55	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	56	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	58	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	77	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	78	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	79	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	80	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	81	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	82	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	83	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	84	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	85	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	86	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	87	X	-0.006	-0.006	0.00	Yes	100.00	Yes
Di	8	Y	-0.006	-0.006	0.00	Yes	100.00	Yes

9	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
13	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
14	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
15	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
16	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
18	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
20	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
22	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
23	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
24	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
26	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
27	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
28	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
29	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
36	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
37	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
38	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
50	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
51	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
55	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
56	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
58	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
59	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
76	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
77	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
78	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
79	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
80	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
81	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
82	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
83	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
84	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
85	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
86	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
87	Y	-0.004	-0.004	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	76	y	-0.039	1.00	No
		y	-0.039	7.00	No
		y	-0.06	3.00	No
	77	y	-0.025	1.00	No
		y	-0.025	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	78	y	-0.028	4.00	No
	79	y	-0.018	1.00	No
		y	-0.018	5.00	No

		y	-0.016	3.00	No
	80	y	-0.021	1.00	No
		y	-0.021	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	81	y	-0.032	1.00	No
		y	-0.032	7.00	No
		y	-0.06	3.00	No
	82	y	-0.028	4.00	No
	83	y	-0.018	1.00	No
		y	-0.018	5.00	No
		y	-0.016	3.00	No
	84	y	-0.025	1.00	No
		y	-0.025	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	85	y	-0.039	1.00	No
		y	-0.039	7.00	No
		y	-0.06	3.00	No
	86	y	-0.033	2.00	No
		y	-0.028	4.00	No
	87	y	-0.018	1.00	No
		y	-0.018	5.00	No
		y	-0.016	3.00	No
W0	76	z	-0.09	1.00	No
		z	-0.09	7.00	No
		z	-0.053	3.00	No
	77	z	-0.075	1.00	No
		z	-0.075	5.00	No
		z	-0.039	2.00	No
		z	-0.042	4.00	No
	79	z	-0.049	1.00	No
		z	-0.049	5.00	No
		z	-0.013	3.00	No
	80	z	-0.075	1.00	No
		z	-0.075	5.00	No
		z	-0.039	2.00	No
		z	-0.042	4.00	No
	81	z	-0.09	1.00	No
		z	-0.09	7.00	No
		z	-0.053	3.00	No
	83	z	-0.049	1.00	No
		z	-0.049	5.00	No
		z	-0.013	3.00	No
	84	z	-0.11	1.00	No
		z	-0.11	5.00	No
		z	-0.024	2.00	No
		z	-0.032	4.00	No
	85	z	-0.139	1.00	No
		z	-0.139	7.00	No
	86	z	-0.031	2.00	No
	87	z	-0.076	1.00	No
		z	-0.076	5.00	No
W30	76	2	-0.123	1.00	No
		2	-0.123	7.00	No
		2	-0.067	3.00	No
	77	2	-0.098	1.00	No
		2	-0.098	5.00	No
		2	-0.037	2.00	No
		2	-0.041	4.00	No

	79	2	-0.067	1.00	No
		2	-0.067	5.00	No
		2	-0.014	3.00	No
	80	2	-0.072	1.00	No
		2	-0.072	5.00	No
		2	-0.037	2.00	No
		2	-0.041	4.00	No
	81	2	-0.089	1.00	No
		2	-0.089	7.00	No
		2	-0.067	3.00	No
	83	2	-0.067	1.00	No
		2	-0.067	5.00	No
		2	-0.014	3.00	No
	84	x	-0.064	1.00	No
		x	-0.064	5.00	No
		x	-0.033	2.00	No
		x	-0.035	4.00	No
	85	x	-0.074	1.00	No
		x	-0.074	7.00	No
		x	-0.045	3.00	No
	86	x	-0.031	2.00	No
	87	x	-0.04	1.00	No
		x	-0.04	5.00	No
		x	-0.012	3.00	No
Di	76	y	-0.062	1.00	No
		y	-0.062	7.00	No
		y	-0.045	3.00	No
	77	y	-0.05	1.00	No
		y	-0.05	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	78	y	-0.013	4.00	No
	79	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
	80	y	-0.039	1.00	No
		y	-0.039	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	81	y	-0.048	1.00	No
		y	-0.048	7.00	No
		y	-0.045	3.00	No
	82	y	-0.013	4.00	No
	83	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
	84	y	-0.05	1.00	No
		y	-0.05	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	85	y	-0.062	1.00	No
		y	-0.062	7.00	No
		y	-0.045	3.00	No
	86	y	-0.035	2.00	No
		y	-0.013	4.00	No
	87	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
Wi0	76	z	-0.028	1.00	No
		z	-0.028	7.00	No

		z	-0.019	3.00	No
	77	z	-0.024	1.00	No
		z	-0.024	5.00	No
		z	-0.016	2.00	No
		z	-0.017	4.00	No
	79	z	-0.017	1.00	No
		z	-0.017	5.00	No
		z	-0.019	3.00	No
	80	z	-0.018	1.00	No
		z	-0.018	5.00	No
		z	-0.016	2.00	No
		z	-0.017	4.00	No
	81	z	-0.02	1.00	No
		z	-0.02	7.00	No
		z	-0.019	3.00	No
	83	z	-0.017	1.00	No
		z	-0.017	5.00	No
		z	-0.019	3.00	No
	84	z	-0.033	1.00	No
		z	-0.033	5.00	No
	85	z	-0.039	1.00	No
		z	-0.039	7.00	No
	86	z	-0.011	2.00	No
	87	z	-0.023	1.00	No
		z	-0.023	5.00	No
Wi30	76	2	-0.034	1.00	No
		2	-0.034	7.00	No
		2	-0.022	3.00	No
	77	2	-0.029	1.00	No
		2	-0.029	5.00	No
		2	-0.021	2.00	No
		2	-0.023	4.00	No
	79	2	-0.021	1.00	No
		2	-0.021	5.00	No
		2	-0.007	3.00	No
	80	2	-0.022	1.00	No
		2	-0.022	5.00	No
		2	-0.021	2.00	No
		2	-0.023	4.00	No
	81	2	-0.026	1.00	No
		2	-0.026	7.00	No
		2	-0.022	3.00	No
	83	2	-0.021	1.00	No
		2	-0.021	5.00	No
		2	-0.007	3.00	No
	84	x	-0.022	1.00	No
		x	-0.022	5.00	No
		x	-0.013	2.00	No
		x	-0.014	4.00	No
	85	x	-0.024	1.00	No
		x	-0.024	7.00	No
		x	-0.017	3.00	No
	86	x	-0.011	2.00	No
	87	x	-0.015	1.00	No
		x	-0.015	5.00	No
		x	-0.007	3.00	No
WL0	76	z	-0.01	1.00	No
		z	-0.01	7.00	No
		z	-0.006	3.00	No
	77	z	-0.009	1.00	No

		z	-0.009	5.00	No
		z	-0.005	2.00	No
		z	-0.005	4.00	No
	79	z	-0.006	1.00	No
		z	-0.006	5.00	No
		z	-0.002	3.00	No
	80	z	-0.007	1.00	No
		z	-0.007	5.00	No
		z	-0.005	2.00	No
		z	-0.005	4.00	No
	81	z	-0.008	1.00	No
		z	-0.008	7.00	No
		z	-0.006	3.00	No
	83	z	-0.006	1.00	No
		z	-0.006	5.00	No
		z	-0.002	3.00	No
	84	z	-0.013	1.00	No
		z	-0.013	5.00	No
		z	-0.003	2.00	No
		z	-0.004	4.00	No
	85	z	-0.016	1.00	No
		z	-0.016	7.00	No
	86	z	-0.003	2.00	No
	87	z	-0.009	1.00	No
		z	-0.009	5.00	No
WL30	76	2	-0.014	1.00	No
		2	-0.014	7.00	No
		2	-0.008	3.00	No
	77	2	-0.011	1.00	No
		2	-0.011	5.00	No
		2	-0.005	2.00	No
		2	-0.005	4.00	No
	79	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.002	3.00	No
	80	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.005	2.00	No
		2	-0.005	4.00	No
	81	2	-0.01	1.00	No
		2	-0.01	7.00	No
		2	-0.008	3.00	No
	83	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.002	3.00	No
	84	x	-0.008	1.00	No
		x	-0.008	5.00	No
		x	-0.004	2.00	No
		x	-0.004	4.00	No
	85	x	-0.009	1.00	No
		x	-0.009	7.00	No
		x	-0.006	3.00	No
	86	x	-0.003	2.00	No
	87	x	-0.005	1.00	No
		x	-0.005	5.00	No
		x	-0.002	3.00	No
LL1	14	y	-0.25	2.25	No
LL2	13	y	-0.25	0.00	No
LLa1	87	y	-0.50	3.00	No
LLa2	86	y	-0.50	3.00	No

LLa3	85	y	-0.50	4.00	No
LLa4	84	y	-0.50	3.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load on Antenna 4	No	0.00	0.00	0.00
W180	-W0	Yes	0.00	0.00	0.00
W210	-W30	Yes	0.00	0.00	0.00
Wi180	-Wi0	Yes	0.00	0.00	0.00
Wi210	-Wi30	Yes	0.00	0.00	0.00
WL180	-WL0	Yes	0.00	0.00	0.00
WL210	-WL30	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00
W180	0.00	0.00	0.00
W210	0.00	0.00	0.00
Wi180	0.00	0.00	0.00
Wi210	0.00	0.00	0.00
WL180	0.00	0.00	0.00

WL210	0.00	0.00	0.00

Bentley

Current Date: 7/9/2018 11:34 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155.etz\

Steel Code Check

Report: Summary - For all selected load conditions

Load conditions to be included in design :

LC1=1.2DL+1.6W0
LC2=1.2DL+1.6W30
LC3=1.2DL-1.6W0
LC4=1.2DL-1.6W30
LC5=0.9DL+1.6W0
LC6=0.9DL+1.6W30
LC7=0.9DL-1.6W0
LC8=0.9DL-1.6W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC14=0.9DL
LC15=1.2DL+1.6LL1
LC16=1.2DL+1.6LL2
LC17=1.2DL+WL0+LLa1
LC18=1.2DL+WL30+LLa1
LC19=1.2DL-WL0+LLa1
LC20=1.2DL-WL30+LLa1
LC21=1.2DL+WL0+LLa2
LC22=1.2DL+WL30+LLa2
LC23=1.2DL-WL0+LLa2
LC24=1.2DL-WL30+LLa2
LC25=1.2DL+WL0+LLa3
LC26=1.2DL+WL30+LLa3
LC27=1.2DL-WL0+LLa3
LC28=1.2DL-WL30+LLa3
LC29=1.2DL+WL0+LLa4
LC30=1.2DL+WL30+LLa4
LC31=1.2DL-WL0+LLa4
LC32=1.2DL-WL30+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**8**	LC1 at 0.00%	0.89	OK	
			LC10 at 0.00%	**1.28**	**N.G.**	Eq. H1-1b
			LC11 at 0.00%	1.24	N.G.	
			LC12 at 0.00%	1.28	N.G.	
			LC13 at 0.00%	0.71	OK	Eq. H1-1b
			LC14 at 0.00%	0.53	OK	
			LC15 at 0.00%	0.62	OK	
			LC16 at 0.00%	0.62	OK	
			LC17 at 0.00%	0.60	OK	
			LC18 at 0.00%	0.59	OK	
			LC19 at 0.00%	0.59	OK	
			LC2 at 0.00%	1.14	N.G.	
			LC20 at 0.00%	0.59	OK	
			LC21 at 0.00%	0.60	OK	
			LC22 at 0.00%	0.60	OK	
			LC23 at 0.00%	0.59	OK	
			LC24 at 0.00%	0.60	OK	

	LC25 at 0.00%	0.60	OK	
	LC26 at 0.00%	0.60	OK	
	LC27 at 0.00%	0.59	OK	
	LC28 at 0.00%	0.60	OK	
	LC29 at 0.00%	0.60	OK	
	LC3 at 0.00%	0.64	OK	
	LC30 at 0.00%	0.59	OK	
	LC31 at 0.00%	0.59	OK	
	LC32 at 0.00%	0.59	OK	
	LC4 at 0.00%	1.13	N.G.	
	LC5 at 0.00%	0.71	OK	
	LC6 at 0.00%	0.96	OK	
	LC7 at 0.00%	0.46	OK	
	LC8 at 0.00%	0.95	OK	
	LC9 at 0.00%	1.27	N.G.	
9	LC1 at 20.00%	0.22	OK	
	LC10 at 20.00%	0.45	OK	
	LC11 at 20.00%	**0.45**	**OK**	Eq. H1-1b
	LC12 at 20.00%	0.45	OK	
	LC13 at 20.00%	0.25	OK	
	LC14 at 20.00%	0.18	OK	
	LC15 at 20.00%	0.22	OK	
	LC16 at 20.00%	0.23	OK	
	LC17 at 20.00%	0.22	OK	
	LC18 at 20.00%	0.22	OK	
	LC19 at 20.00%	0.22	OK	
	LC2 at 20.00%	0.33	OK	
	LC20 at 20.00%	0.22	OK	
	LC21 at 20.00%	0.22	OK	
	LC22 at 20.00%	0.22	OK	
	LC23 at 20.00%	0.22	OK	
	LC24 at 20.00%	0.22	OK	
	LC25 at 20.00%	0.22	OK	
	LC26 at 20.00%	0.22	OK	
	LC27 at 20.00%	0.22	OK	
	LC28 at 20.00%	0.22	OK	
	LC29 at 20.00%	0.22	OK	
	LC3 at 20.00%	0.28	OK	
	LC30 at 20.00%	0.22	OK	
	LC31 at 20.00%	0.22	OK	
	LC32 at 20.00%	0.22	OK	
	LC4 at 20.00%	0.34	OK	Eq. H1-1b
	LC5 at 20.00%	0.17	OK	
	LC6 at 20.00%	0.27	OK	
	LC7 at 20.00%	0.22	OK	
	LC8 at 20.00%	0.28	OK	
	LC9 at 20.00%	0.45	OK	
37	LC1 at 0.00%	0.99	OK	
	LC10 at 0.00%	1.36	N.G.	
	LC11 at 0.00%	1.37	N.G.	
	LC12 at 0.00%	1.32	N.G.	
	LC13 at 0.00%	0.75	OK	
	LC14 at 0.00%	0.56	OK	
	LC15 at 0.00%	0.93	OK	Eq. H1-1b
	LC16 at 0.00%	1.27	N.G.	
	LC17 at 0.00%	0.70	OK	
	LC18 at 0.00%	0.71	OK	
	LC19 at 0.00%	0.71	OK	
	LC2 at 0.00%	0.86	OK	
	LC20 at 0.00%	0.70	OK	
	LC21 at 0.00%	0.88	OK	
	LC22 at 0.00%	0.89	OK	

	LC23 at 0.00%	0.88	OK	
	LC24 at 0.00%	0.87	OK	
	LC25 at 0.00%	1.12	N.G.	
	LC26 at 0.00%	1.11	N.G.	
	LC27 at 0.00%	1.11	N.G.	
	LC28 at 0.00%	1.10	N.G.	
	LC29 at 0.00%	1.38	N.G.	
	LC3 at 0.00%	1.12	N.G.	
	LC30 at 0.00%	1.38	N.G.	
	LC31 at 0.00%	**1.38**	**N.G.**	Eq. H1-1b
	LC32 at 0.00%	1.37	N.G.	
	LC4 at 0.00%	0.64	OK	
	LC5 at 0.00%	0.81	OK	
	LC6 at 0.00%	0.67	OK	
	LC7 at 0.00%	0.94	OK	
	LC8 at 0.00%	0.45	OK	
	LC9 at 0.00%	1.35	N.G.	
38	LC1 at 20.00%	0.38	OK	Eq. H1-1b
	LC10 at 20.00%	0.48	OK	
	LC11 at 20.00%	0.48	OK	
	LC12 at 20.00%	0.49	OK	
	LC13 at 20.00%	0.26	OK	
	LC14 at 20.00%	0.19	OK	
	LC15 at 20.00%	0.30	OK	
	LC16 at 20.00%	0.49	OK	
	LC17 at 20.00%	0.25	OK	
	LC18 at 20.00%	0.25	OK	
	LC19 at 20.00%	0.25	OK	
	LC2 at 20.00%	0.25	OK	
	LC20 at 20.00%	0.25	OK	
	LC21 at 20.00%	0.28	OK	
	LC22 at 20.00%	0.28	OK	
	LC23 at 20.00%	0.28	OK	
	LC24 at 20.00%	0.28	OK	
	LC25 at 20.00%	0.36	OK	
	LC26 at 20.00%	0.36	OK	
	LC27 at 20.00%	0.36	OK	
	LC28 at 20.00%	0.36	OK	
	LC29 at 20.00%	**0.52**	**OK**	Eq. H1-1b
	LC3 at 20.00%	0.33	OK	
	LC30 at 20.00%	0.52	OK	
	LC31 at 20.00%	0.52	OK	
	LC32 at 20.00%	0.52	OK	
	LC4 at 20.00%	0.28	OK	
	LC5 at 20.00%	0.31	OK	
	LC6 at 20.00%	0.20	OK	
	LC7 at 20.00%	0.27	OK	
	LC8 at 20.00%	0.22	OK	
	LC9 at 20.00%	0.49	OK	
50	LC1 at 0.00%	0.96	OK	
	LC10 at 0.00%	1.40	N.G.	
	LC11 at 0.00%	**1.44**	**N.G.**	Eq. H1-1b
	LC12 at 0.00%	1.44	N.G.	
	LC13 at 0.00%	0.77	OK	
	LC14 at 0.00%	0.58	OK	
	LC15 at 0.00%	0.96	OK	Eq. H1-1b
	LC16 at 0.00%	0.72	OK	
	LC17 at 0.00%	1.41	N.G.	
	LC18 at 0.00%	1.40	N.G.	
	LC19 at 0.00%	1.41	N.G.	
	LC2 at 0.00%	0.78	OK	
	LC20 at 0.00%	1.41	N.G.	

		LC21 at 0.00%	1.14	N.G.	
		LC22 at 0.00%	1.12	N.G.	
		LC23 at 0.00%	1.13	N.G.	
		LC24 at 0.00%	1.15	N.G.	
		LC25 at 0.00%	0.90	OK	
		LC26 at 0.00%	0.90	OK	
		LC27 at 0.00%	0.91	OK	
		LC28 at 0.00%	0.91	OK	
		LC29 at 0.00%	0.73	OK	
		LC3 at 0.00%	1.08	N.G.	
		LC30 at 0.00%	0.72	OK	
		LC31 at 0.00%	0.73	OK	
		LC32 at 0.00%	0.74	OK	
		LC4 at 0.00%	1.02	N.G.	
		LC5 at 0.00%	0.76	OK	
		LC6 at 0.00%	0.58	OK	
		LC7 at 0.00%	0.88	OK	
		LC8 at 0.00%	0.83	OK	
		LC9 at 0.00%	1.42	N.G.	
	51	LC1 at 20.00%	0.36	OK	
		LC10 at 20.00%	0.50	OK	
		LC11 at 20.00%	0.50	OK	
		LC12 at 20.00%	0.50	OK	
		LC13 at 20.00%	0.27	OK	
		LC14 at 20.00%	0.20	OK	
		LC15 at 20.00%	0.30	OK	
		LC16 at 20.00%	0.26	OK	
		LC17 at 20.00%	0.53	OK	
		LC18 at 20.00%	**0.53**	**OK**	Eq. H1-1b
		LC19 at 20.00%	0.53	OK	
		LC2 at 20.00%	0.37	OK	Eq. H1-1b
		LC20 at 20.00%	0.53	OK	
		LC21 at 20.00%	0.37	OK	
		LC22 at 20.00%	0.37	OK	
		LC23 at 20.00%	0.37	OK	
		LC24 at 20.00%	0.36	OK	
		LC25 at 20.00%	0.29	OK	
		LC26 at 20.00%	0.29	OK	
		LC27 at 20.00%	0.29	OK	
		LC28 at 20.00%	0.29	OK	
		LC29 at 20.00%	0.26	OK	
		LC3 at 20.00%	0.33	OK	
		LC30 at 20.00%	0.26	OK	
		LC31 at 20.00%	0.26	OK	
		LC32 at 20.00%	0.26	OK	
		LC4 at 20.00%	0.33	OK	
		LC5 at 20.00%	0.29	OK	
		LC6 at 20.00%	0.31	OK	
		LC7 at 20.00%	0.26	OK	
		LC8 at 20.00%	0.26	OK	
		LC9 at 20.00%	0.50	OK	
L 1-1/2x1-1/2x1/4	**29**	LC1 at 0.00%	1.34	N.G.	
		LC10 at 0.00%	2.22	N.G.	
		LC11 at 0.00%	2.20	N.G.	
		LC12 at 0.00%	2.21	N.G.	
		LC13 at 0.00%	1.25	N.G.	
		LC14 at 0.00%	0.94	OK	
		LC15 at 0.00%	1.18	N.G.	
		LC16 at 0.00%	1.32	N.G.	
		LC17 at 0.00%	1.10	N.G.	
		LC18 at 0.00%	1.10	N.G.	
		LC19 at 0.00%	1.09	N.G.	

	LC2 at 0.00%	1.27	N.G.	
	LC20 at 0.00%	1.10	N.G.	
	LC21 at 0.00%	1.13	N.G.	
	LC22 at 0.00%	1.13	N.G.	
	LC23 at 0.00%	1.12	N.G.	
	LC24 at 0.00%	1.13	N.G.	
	LC25 at 0.00%	1.19	N.G.	
	LC26 at 0.00%	1.19	N.G.	
	LC27 at 0.00%	1.19	N.G.	
	LC28 at 0.00%	1.19	N.G.	
	LC29 at 0.00%	1.31	N.G.	
	LC3 at 0.00%	1.23	N.G.	
	LC30 at 0.00%	1.31	N.G.	
	LC31 at 0.00%	1.30	N.G.	
	LC32 at 0.00%	1.31	N.G.	
	LC4 at 0.00%	1.32	N.G.	
	LC5 at 0.00%	1.03	N.G.	
	LC6 at 0.00%	0.95	OK	
	LC7 at 0.00%	0.93	OK	
	LC8 at 0.00%	1.02	N.G.	
	LC9 at 0.00%	**2.22**	**N.G.**	Sec. F1
36	LC1 at 0.00%	1.37	N.G.	
	LC10 at 0.00%	2.45	N.G.	
	LC11 at 0.00%	**2.46**	**N.G.**	Sec. F1
	LC12 at 0.00%	2.43	N.G.	
	LC13 at 0.00%	1.35	N.G.	
	LC14 at 0.00%	1.01	N.G.	
	LC15 at 0.00%	2.01	N.G.	
	LC16 at 0.00%	1.82	N.G.	
	LC17 at 0.00%	1.57	N.G.	
	LC18 at 0.00%	1.58	N.G.	
	LC19 at 0.00%	1.59	N.G.	
	LC2 at 0.00%	1.38	N.G.	
	LC20 at 0.00%	1.58	N.G.	
	LC21 at 0.00%	1.99	N.G.	
	LC22 at 0.00%	2.00	N.G.	
	LC23 at 0.00%	2.00	N.G.	
	LC24 at 0.00%	2.00	N.G.	
	LC25 at 0.00%	2.25	N.G.	
	LC26 at 0.00%	2.26	N.G.	
	LC27 at 0.00%	2.26	N.G.	
	LC28 at 0.00%	2.25	N.G.	
	LC29 at 0.00%	1.97	N.G.	
	LC3 at 0.00%	1.46	N.G.	
	LC30 at 0.00%	1.98	N.G.	
	LC31 at 0.00%	1.98	N.G.	
	LC32 at 0.00%	1.97	N.G.	
	LC4 at 0.00%	1.32	N.G.	
	LC5 at 0.00%	1.05	N.G.	
	LC6 at 0.00%	1.04	N.G.	
	LC7 at 0.00%	1.12	N.G.	
	LC8 at 0.00%	0.98	OK	
	LC9 at 0.00%	2.43	N.G.	
55	LC1 at 0.00%	1.33	N.G.	
	LC10 at 0.00%	2.39	N.G.	
	LC11 at 0.00%	2.41	N.G.	
	LC12 at 0.00%	**2.43**	**N.G.**	Sec. F1
	LC13 at 0.00%	1.33	N.G.	
	LC14 at 0.00%	1.00	OK	
	LC15 at 0.00%	1.51	N.G.	
	LC16 at 0.00%	1.25	N.G.	
	LC17 at 0.00%	1.91	N.G.	

	LC18 at 0.00%	1.91	N.G.	
	LC19 at 0.00%	1.91	N.G.	
	LC2 at 0.00%	1.32	N.G.	
	LC20 at 0.00%	1.92	N.G.	
	LC21 at 0.00%	1.68	N.G.	
	LC22 at 0.00%	1.67	N.G.	
	LC23 at 0.00%	1.68	N.G.	
	LC24 at 0.00%	1.69	N.G.	
	LC25 at 0.00%	1.46	N.G.	
	LC26 at 0.00%	1.45	N.G.	
	LC27 at 0.00%	1.46	N.G.	
	LC28 at 0.00%	1.47	N.G.	
	LC29 at 0.00%	1.26	N.G.	
	LC3 at 0.00%	1.33	N.G.	
	LC30 at 0.00%	1.25	N.G.	
	LC31 at 0.00%	1.26	N.G.	
	LC32 at 0.00%	1.27	N.G.	
	LC4 at 0.00%	1.47	N.G.	
	LC5 at 0.00%	1.00	OK	
	LC6 at 0.00%	1.01	N.G.	
	LC7 at 0.00%	1.01	N.G.	
	LC8 at 0.00%	1.14	N.G.	
	LC9 at 0.00%	2.40	N.G.	
56	LC1 at 0.00%	1.33	N.G.	
	LC10 at 0.00%	2.46	N.G.	
	LC11 at 0.00%	2.48	N.G.	
	LC12 at 0.00%	**2.48**	**N.G.**	Sec. F1
	LC13 at 0.00%	1.36	N.G.	
	LC14 at 0.00%	1.02	N.G.	
	LC15 at 0.00%	2.03	N.G.	
	LC16 at 0.00%	1.50	N.G.	
	LC17 at 0.00%	1.99	N.G.	
	LC18 at 0.00%	1.99	N.G.	
	LC19 at 0.00%	2.00	N.G.	
	LC2 at 0.00%	1.32	N.G.	
	LC20 at 0.00%	2.00	N.G.	
	LC21 at 0.00%	2.26	N.G.	
	LC22 at 0.00%	2.26	N.G.	
	LC23 at 0.00%	2.27	N.G.	
	LC24 at 0.00%	2.27	N.G.	
	LC25 at 0.00%	2.01	N.G.	
	LC26 at 0.00%	2.01	N.G.	
	LC27 at 0.00%	2.02	N.G.	
	LC28 at 0.00%	2.02	N.G.	
	LC29 at 0.00%	1.59	N.G.	
	LC3 at 0.00%	1.46	N.G.	
	LC30 at 0.00%	1.59	N.G.	
	LC31 at 0.00%	1.60	N.G.	
	LC32 at 0.00%	1.60	N.G.	
	LC4 at 0.00%	1.41	N.G.	
	LC5 at 0.00%	1.00	N.G.	
	LC6 at 0.00%	0.97	OK	
	LC7 at 0.00%	1.12	N.G.	
	LC8 at 0.00%	1.07	N.G.	
	LC9 at 0.00%	2.46	N.G.	
58	LC1 at 0.00%	1.37	N.G.	
	LC10 at 0.00%	2.24	N.G.	
	LC11 at 0.00%	2.22	N.G.	
	LC12 at 0.00%	2.24	N.G.	
	LC13 at 0.00%	1.26	N.G.	
	LC14 at 0.00%	0.94	OK	
	LC15 at 0.00%	1.19	N.G.	

		LC16 at 0.00%	1.14	N.G.	
		LC17 at 0.00%	1.32	N.G.	
		LC18 at 0.00%	1.32	N.G.	
		LC19 at 0.00%	1.31	N.G.	
		LC2 at 0.00%	1.28	N.G.	
		LC20 at 0.00%	1.32	N.G.	
		LC21 at 0.00%	1.20	N.G.	
		LC22 at 0.00%	1.20	N.G.	
		LC23 at 0.00%	1.19	N.G.	
		LC24 at 0.00%	1.20	N.G.	
		LC25 at 0.00%	1.14	N.G.	
		LC26 at 0.00%	1.13	N.G.	
		LC27 at 0.00%	1.13	N.G.	
		LC28 at 0.00%	1.14	N.G.	
		LC29 at 0.00%	1.11	N.G.	
		LC3 at 0.00%	1.16	N.G.	
		LC30 at 0.00%	1.10	N.G.	
		LC31 at 0.00%	1.10	N.G.	
		LC32 at 0.00%	1.11	N.G.	
		LC4 at 0.00%	1.27	N.G.	
		LC5 at 0.00%	1.06	N.G.	
		LC6 at 0.00%	0.99	OK	
		LC7 at 0.00%	0.86	OK	
		LC8 at 0.00%	0.95	OK	
		LC9 at 0.00%	**2.26**	**N.G.**	Sec. F1
	59	LC1 at 0.00%	1.25	N.G.	
		LC10 at 0.00%	**2.28**	**N.G.**	Sec. F1
		LC11 at 0.00%	2.26	N.G.	
		LC12 at 0.00%	2.24	N.G.	
		LC13 at 0.00%	1.27	N.G.	
		LC14 at 0.00%	0.95	OK	
		LC15 at 0.00%	1.45	N.G.	
		LC16 at 0.00%	1.76	N.G.	
		LC17 at 0.00%	1.20	N.G.	
		LC18 at 0.00%	1.21	N.G.	
		LC19 at 0.00%	1.20	N.G.	
		LC2 at 0.00%	1.43	N.G.	
		LC20 at 0.00%	1.19	N.G.	
		LC21 at 0.00%	1.40	N.G.	
		LC22 at 0.00%	1.41	N.G.	
		LC23 at 0.00%	1.40	N.G.	
		LC24 at 0.00%	1.39	N.G.	
		LC25 at 0.00%	1.62	N.G.	
		LC26 at 0.00%	1.63	N.G.	
		LC27 at 0.00%	1.62	N.G.	
		LC28 at 0.00%	1.61	N.G.	
		LC29 at 0.00%	1.85	N.G.	
		LC3 at 0.00%	1.28	N.G.	
		LC30 at 0.00%	1.86	N.G.	
		LC31 at 0.00%	1.85	N.G.	
		LC32 at 0.00%	1.85	N.G.	
		LC4 at 0.00%	1.16	N.G.	
		LC5 at 0.00%	0.94	OK	
		LC6 at 0.00%	1.12	N.G.	
		LC7 at 0.00%	0.97	OK	
		LC8 at 0.00%	0.86	OK	
		LC9 at 0.00%	2.26	N.G.	
PIPE 2x0.154	**76**	LC1 at 46.88%	0.43	OK	
		LC10 at 46.88%	0.10	OK	
		LC11 at 46.88%	0.09	OK	
		LC12 at 46.88%	0.10	OK	
		LC13 at 46.88%	0.01	OK	

	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 46.88%	0.03	OK	
	LC18 at 46.88%	0.04	OK	
	LC19 at 46.88%	0.03	OK	
	LC2 at 46.88%	**0.56**	**OK**	Eq. H1-1b
	LC20 at 46.88%	0.04	OK	
	LC21 at 46.88%	0.03	OK	
	LC22 at 46.88%	0.04	OK	
	LC23 at 46.88%	0.03	OK	
	LC24 at 46.88%	0.04	OK	
	LC25 at 46.88%	0.03	OK	
	LC26 at 46.88%	0.04	OK	
	LC27 at 46.88%	0.03	OK	
	LC28 at 46.88%	0.04	OK	
	LC29 at 46.88%	0.03	OK	
	LC3 at 46.88%	0.43	OK	
	LC30 at 46.88%	0.04	OK	
	LC31 at 46.88%	0.03	OK	
	LC32 at 46.88%	0.04	OK	
	LC4 at 46.88%	0.56	OK	
	LC5 at 46.88%	0.43	OK	
	LC6 at 46.88%	0.56	OK	
	LC7 at 46.88%	0.43	OK	
	LC8 at 46.88%	0.56	OK	
	LC9 at 46.88%	0.09	OK	
77	LC1 at 50.00%	0.28	OK	
	LC10 at 50.00%	0.07	OK	
	LC11 at 50.00%	0.06	OK	
	LC12 at 50.00%	0.07	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	0.34	OK	
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.28	OK	
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	**0.34**	**OK**	Eq. H1-1b
	LC5 at 50.00%	0.28	OK	
	LC6 at 50.00%	0.34	OK	
	LC7 at 50.00%	0.28	OK	
	LC8 at 50.00%	0.34	OK	
	LC9 at 50.00%	0.06	OK	
78	LC1 at 50.00%	0.04	OK	
	LC10 at 50.00%	0.00	OK	
	LC11 at 50.00%	0.00	OK	

	LC12 at 50.00%	0.00	OK	
	LC13 at 50.00%	0.00	OK	
	LC14 at 50.00%	0.00	OK	
	LC15 at 50.00%	0.00	OK	
	LC16 at 50.00%	0.00	OK	
	LC17 at 50.00%	0.00	OK	
	LC18 at 50.00%	0.00	OK	
	LC19 at 50.00%	0.00	OK	
	LC2 at 50.00%	0.04	OK	
	LC20 at 50.00%	0.00	OK	
	LC21 at 50.00%	0.00	OK	
	LC22 at 50.00%	0.00	OK	
	LC23 at 50.00%	0.00	OK	
	LC24 at 50.00%	0.00	OK	
	LC25 at 50.00%	0.00	OK	
	LC26 at 50.00%	0.00	OK	
	LC27 at 50.00%	0.00	OK	
	LC28 at 50.00%	0.00	OK	
	LC29 at 50.00%	0.00	OK	
	LC3 at 50.00%	**0.04**	**OK**	Eq. H1-1b
	LC30 at 50.00%	0.00	OK	
	LC31 at 50.00%	0.00	OK	
	LC32 at 50.00%	0.00	OK	
	LC4 at 50.00%	0.04	OK	
	LC5 at 50.00%	0.04	OK	
	LC6 at 50.00%	0.04	OK	
	LC7 at 50.00%	0.04	OK	
	LC8 at 50.00%	0.04	OK	
	LC9 at 50.00%	0.00	OK	Eq. Sec. D2
79	LC1 at 50.00%	0.16	OK	
	LC10 at 50.00%	0.04	OK	
	LC11 at 50.00%	0.03	OK	
	LC12 at 50.00%	0.04	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.01	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.01	OK	
	LC2 at 50.00%	0.21	OK	
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.01	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.01	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.01	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.01	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.01	OK	
	LC3 at 50.00%	0.16	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.01	OK	
	LC32 at 50.00%	0.01	OK	
	LC4 at 50.00%	**0.21**	**OK**	Eq. H1-1b
	LC5 at 50.00%	0.16	OK	
	LC6 at 50.00%	0.21	OK	
	LC7 at 50.00%	0.16	OK	
	LC8 at 50.00%	0.21	OK	
	LC9 at 50.00%	0.03	OK	
80	LC1 at 50.00%	**0.28**	**OK**	Eq. H1-1b

	LC10 at 50.00%	0.06	OK	
	LC11 at 50.00%	0.05	OK	
	LC12 at 50.00%	0.06	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	0.27	OK	
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.28	OK	
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	0.27	OK	
	LC5 at 50.00%	0.28	OK	
	LC6 at 50.00%	0.27	OK	
	LC7 at 50.00%	0.28	OK	
	LC8 at 50.00%	0.27	OK	
	LC9 at 50.00%	0.05	OK	
81	LC1 at 46.88%	0.43	OK	
	LC10 at 46.88%	0.08	OK	
	LC11 at 46.88%	0.07	OK	
	LC12 at 46.88%	0.08	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 46.88%	0.03	OK	
	LC18 at 46.88%	0.03	OK	
	LC19 at 46.88%	0.03	OK	
	LC2 at 46.88%	**0.44**	**OK**	Eq. H1-1b
	LC20 at 46.88%	0.03	OK	
	LC21 at 46.88%	0.03	OK	
	LC22 at 46.88%	0.03	OK	
	LC23 at 46.88%	0.03	OK	
	LC24 at 46.88%	0.03	OK	
	LC25 at 46.88%	0.03	OK	
	LC26 at 46.88%	0.03	OK	
	LC27 at 46.88%	0.03	OK	
	LC28 at 46.88%	0.03	OK	
	LC29 at 46.88%	0.03	OK	
	LC3 at 46.88%	0.43	OK	
	LC30 at 46.88%	0.03	OK	
	LC31 at 46.88%	0.03	OK	
	LC32 at 46.88%	0.03	OK	
	LC4 at 46.88%	0.44	OK	
	LC5 at 46.88%	0.43	OK	
	LC6 at 46.88%	0.44	OK	
	LC7 at 46.88%	0.43	OK	
	LC8 at 46.88%	0.44	OK	
	LC9 at 46.88%	0.07	OK	

82	LC1 at 50.00%	0.04	OK	
	LC10 at 50.00%	0.00	OK	
	LC11 at 50.00%	0.00	OK	
	LC12 at 50.00%	0.00	OK	
	LC13 at 50.00%	0.00	OK	
	LC14 at 50.00%	0.00	OK	
	LC15 at 50.00%	0.00	OK	
	LC16 at 50.00%	0.00	OK	
	LC17 at 50.00%	0.00	OK	
	LC18 at 50.00%	0.00	OK	
	LC19 at 50.00%	0.00	OK	
	LC2 at 50.00%	0.04	OK	
	LC20 at 50.00%	0.00	OK	
	LC21 at 50.00%	0.00	OK	
	LC22 at 50.00%	0.00	OK	
	LC23 at 50.00%	0.00	OK	
	LC24 at 50.00%	0.00	OK	
	LC25 at 50.00%	0.00	OK	
	LC26 at 50.00%	0.00	OK	
	LC27 at 50.00%	0.00	OK	
	LC28 at 50.00%	0.00	OK	
	LC29 at 50.00%	0.00	OK	
	LC3 at 50.00%	0.04	OK	
	LC30 at 50.00%	0.00	OK	
	LC31 at 50.00%	0.00	OK	
	LC32 at 50.00%	0.00	OK	
	LC4 at 50.00%	**0.04**	**OK**	Eq. H1-1b
	LC5 at 50.00%	0.04	OK	
	LC6 at 50.00%	0.04	OK	
	LC7 at 50.00%	0.04	OK	
	LC8 at 50.00%	0.04	OK	
	LC9 at 50.00%	0.00	OK	Eq. Sec. D2
83	LC1 at 50.00%	0.16	OK	
	LC10 at 50.00%	0.04	OK	
	LC11 at 50.00%	0.03	OK	
	LC12 at 50.00%	0.04	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.01	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.01	OK	
	LC2 at 50.00%	0.21	OK	
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.01	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.01	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.01	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.01	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.01	OK	
	LC3 at 50.00%	0.16	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.01	OK	
	LC32 at 50.00%	0.01	OK	
	LC4 at 50.00%	**0.21**	**OK**	Eq. H1-1b
	LC5 at 50.00%	0.16	OK	
	LC6 at 50.00%	0.21	OK	
	LC7 at 50.00%	0.16	OK	

	LC8 at 50.00%	0.21	OK	
	LC9 at 50.00%	0.03	OK	
84	LC1 at 50.00%	**0.36**	**OK**	Eq. H1-1b
	LC10 at 50.00%	0.05	OK	
	LC11 at 50.00%	0.06	OK	
	LC12 at 50.00%	0.05	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.03	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.03	OK	
	LC2 at 50.00%	0.25	OK	
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.03	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.03	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.03	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.03	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.03	OK	
	LC3 at 50.00%	0.36	OK	
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.03	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	0.25	OK	
	LC5 at 50.00%	0.36	OK	
	LC6 at 50.00%	0.25	OK	
	LC7 at 50.00%	0.36	OK	
	LC8 at 50.00%	0.25	OK	
	LC9 at 50.00%	0.06	OK	
85	LC1 at 50.00%	0.60	OK	
	LC10 at 46.88%	0.08	OK	
	LC11 at 46.88%	0.10	OK	
	LC12 at 46.88%	0.08	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 46.88%	0.04	OK	
	LC18 at 46.88%	0.03	OK	
	LC19 at 46.88%	0.04	OK	
	LC2 at 46.88%	0.37	OK	
	LC20 at 46.88%	0.03	OK	
	LC21 at 46.88%	0.04	OK	
	LC22 at 46.88%	0.03	OK	
	LC23 at 46.88%	0.04	OK	
	LC24 at 46.88%	0.03	OK	
	LC25 at 46.88%	0.04	OK	
	LC26 at 46.88%	0.03	OK	
	LC27 at 46.88%	0.04	OK	
	LC28 at 46.88%	0.03	OK	
	LC29 at 46.88%	0.04	OK	
	LC3 at 50.00%	**0.60**	**OK**	Eq. H1-1b
	LC30 at 46.88%	0.03	OK	
	LC31 at 46.88%	0.04	OK	
	LC32 at 46.88%	0.03	OK	
	LC4 at 46.88%	0.37	OK	
	LC5 at 50.00%	0.60	OK	

	LC6 at 46.88%	0.36	OK	
	LC7 at 50.00%	0.60	OK	
	LC8 at 46.88%	0.36	OK	
	LC9 at 46.88%	0.10	OK	
86	LC1 at 46.88%	0.06	OK	
	LC10 at 46.88%	0.01	OK	
	LC11 at 46.88%	0.01	OK	
	LC12 at 46.88%	0.01	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 46.88%	0.00	OK	
	LC18 at 46.88%	0.00	OK	
	LC19 at 46.88%	0.00	OK	
	LC2 at 46.88%	0.06	OK	
	LC20 at 46.88%	0.00	OK	
	LC21 at 46.88%	0.00	OK	
	LC22 at 46.88%	0.00	OK	
	LC23 at 46.88%	0.00	OK	
	LC24 at 46.88%	0.00	OK	
	LC25 at 46.88%	0.00	OK	
	LC26 at 46.88%	0.00	OK	
	LC27 at 46.88%	0.00	OK	
	LC28 at 46.88%	0.00	OK	
	LC29 at 46.88%	0.00	OK	
	LC3 at 46.88%	**0.06**	**OK**	Eq. H1-1b
	LC30 at 46.88%	0.00	OK	
	LC31 at 46.88%	0.00	OK	
	LC32 at 46.88%	0.00	OK	
	LC4 at 46.88%	0.06	OK	
	LC5 at 46.88%	0.06	OK	
	LC6 at 46.88%	0.06	OK	
	LC7 at 46.88%	0.06	OK	
	LC8 at 46.88%	0.06	OK	
	LC9 at 46.88%	0.01	OK	
87	LC1 at 50.00%	**0.23**	**OK**	Eq. H1-1b
	LC10 at 50.00%	0.03	OK	
	LC11 at 50.00%	0.04	OK	
	LC12 at 50.00%	0.03	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	0.14	OK	
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.23	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.01	OK	

		LC4 at 50.00%	0.14	OK	
		LC5 at 50.00%	0.23	OK	
		LC6 at 50.00%	0.14	OK	
		LC7 at 50.00%	0.23	OK	
		LC8 at 50.00%	0.14	OK	
		LC9 at 50.00%	0.04	OK	
PIPE 3x0.216	**13**	LC1 at 0.00%	0.37	OK	
		LC10 at 0.00%	0.51	OK	
		LC11 at 0.00%	0.50	OK	
		LC12 at 0.00%	0.52	OK	
		LC13 at 0.00%	0.28	OK	
		LC14 at 0.00%	0.21	OK	
		LC15 at 0.00%	0.36	OK	
		LC16 at 0.00%	0.33	OK	
		LC17 at 0.00%	0.35	OK	
		LC18 at 0.00%	0.35	OK	
		LC19 at 0.00%	0.35	OK	
		LC2 at 0.00%	0.25	OK	
		LC20 at 0.00%	0.35	OK	
		LC21 at 0.00%	0.38	OK	
		LC22 at 0.00%	0.37	OK	
		LC23 at 0.00%	0.37	OK	
		LC24 at 0.00%	0.37	OK	
		LC25 at 0.00%	0.40	OK	
		LC26 at 0.00%	0.39	OK	
		LC27 at 0.00%	0.39	OK	
		LC28 at 0.00%	0.39	OK	
		LC29 at 0.00%	0.37	OK	
		LC3 at 89.58%	0.21	OK	
		LC30 at 0.00%	0.36	OK	
		LC31 at 0.00%	0.36	OK	
		LC32 at 0.00%	0.36	OK	
		LC4 at 0.00%	0.31	OK	
		LC5 at 14.58%	0.31	OK	
		LC6 at 89.58%	0.19	OK	
		LC7 at 89.58%	0.18	OK	
		LC8 at 91.67%	0.24	OK	
		LC9 at 0.00%	**0.53**	**OK**	Eq. H1-1b
	14	LC1 at 100.00%	0.24	OK	
		LC10 at 100.00%	**0.39**	**OK**	Eq. H1-1b
		LC11 at 100.00%	0.37	OK	
		LC12 at 100.00%	0.37	OK	
		LC13 at 100.00%	0.20	OK	
		LC14 at 100.00%	0.15	OK	
		LC15 at 50.00%	0.16	OK	
		LC16 at 0.00%	0.26	OK	
		LC17 at 100.00%	0.30	OK	
		LC18 at 100.00%	0.30	OK	
		LC19 at 100.00%	0.30	OK	
		LC2 at 100.00%	0.30	OK	
		LC20 at 100.00%	0.30	OK	
		LC21 at 93.75%	0.15	OK	
		LC22 at 93.75%	0.15	OK	
		LC23 at 0.00%	0.15	OK	
		LC24 at 0.00%	0.15	OK	
		LC25 at 100.00%	0.20	OK	
		LC26 at 100.00%	0.20	OK	
		LC27 at 6.25%	0.20	OK	
		LC28 at 6.25%	0.20	OK	
		LC29 at 100.00%	0.26	OK	
		LC3 at 41.67%	0.17	OK	
		LC30 at 100.00%	0.26	OK	

	LC31 at 100.00%	0.25	OK	
	LC32 at 0.00%	0.25	OK	
	LC4 at 0.00%	0.26	OK	
	LC5 at 100.00%	0.19	OK	
	LC6 at 100.00%	0.25	OK	
	LC7 at 16.67%	0.13	OK	
	LC8 at 0.00%	0.22	OK	
	LC9 at 100.00%	0.39	OK	
15	LC1 at 100.00%	0.38	OK	
	LC10 at 100.00%	0.54	OK	
	LC11 at 100.00%	0.52	OK	
	LC12 at 100.00%	0.53	OK	
	LC13 at 100.00%	0.29	OK	
	LC14 at 100.00%	0.22	OK	
	LC15 at 100.00%	0.37	OK	
	LC16 at 100.00%	0.34	OK	
	LC17 at 100.00%	0.37	OK	
	LC18 at 100.00%	0.37	OK	
	LC19 at 100.00%	0.37	OK	
	LC2 at 8.33%	0.32	OK	
	LC20 at 100.00%	0.37	OK	
	LC21 at 100.00%	0.41	OK	
	LC22 at 100.00%	0.40	OK	
	LC23 at 100.00%	0.40	OK	
	LC24 at 100.00%	0.40	OK	
	LC25 at 100.00%	0.39	OK	
	LC26 at 100.00%	0.38	OK	
	LC27 at 100.00%	0.38	OK	
	LC28 at 100.00%	0.38	OK	
	LC29 at 100.00%	0.36	OK	
	LC3 at 10.42%	0.25	OK	
	LC30 at 100.00%	0.36	OK	
	LC31 at 100.00%	0.36	OK	
	LC32 at 100.00%	0.36	OK	
	LC4 at 100.00%	0.28	OK	
	LC5 at 100.00%	0.30	OK	
	LC6 at 8.33%	0.27	OK	
	LC7 at 10.42%	0.20	OK	
	LC8 at 10.42%	0.23	OK	
	LC9 at 100.00%	**0.55**	**OK**	Eq. H1-1b
16	LC1 at 100.00%	0.27	OK	
	LC10 at 100.00%	**0.53**	**OK**	Eq. H1-1b
	LC11 at 100.00%	0.52	OK	
	LC12 at 100.00%	0.50	OK	
	LC13 at 100.00%	0.28	OK	
	LC14 at 100.00%	0.21	OK	
	LC15 at 100.00%	0.33	OK	
	LC16 at 100.00%	0.32	OK	
	LC17 at 100.00%	0.38	OK	
	LC18 at 100.00%	0.39	OK	
	LC19 at 100.00%	0.39	OK	
	LC2 at 100.00%	0.38	OK	
	LC20 at 100.00%	0.38	OK	
	LC21 at 100.00%	0.36	OK	
	LC22 at 100.00%	0.37	OK	
	LC23 at 100.00%	0.36	OK	
	LC24 at 100.00%	0.36	OK	
	LC25 at 100.00%	0.34	OK	
	LC26 at 100.00%	0.35	OK	
	LC27 at 100.00%	0.34	OK	
	LC28 at 100.00%	0.34	OK	
	LC29 at 100.00%	0.33	OK	

	LC3 at 100.00%	0.29	OK	
	LC30 at 100.00%	0.33	OK	
	LC31 at 100.00%	0.33	OK	
	LC32 at 100.00%	0.32	OK	
	LC4 at 10.42%	0.19	OK	
	LC5 at 100.00%	0.20	OK	
	LC6 at 85.42%	0.32	OK	
	LC7 at 100.00%	0.22	OK	
	LC8 at 10.42%	0.16	OK	
	LC9 at 100.00%	0.52	OK	
18	LC1 at 95.83%	0.22	OK	
	LC10 at 0.00%	**0.39**	**OK**	Eq. H1-1b
	LC11 at 0.00%	0.39	OK	
	LC12 at 0.00%	0.38	OK	
	LC13 at 0.00%	0.21	OK	
	LC14 at 0.00%	0.16	OK	
	LC15 at 0.00%	0.22	OK	
	LC16 at 0.00%	0.21	OK	
	LC17 at 100.00%	0.32	OK	Eq. H1-1b
	LC18 at 100.00%	0.32	OK	
	LC19 at 100.00%	0.32	OK	
	LC2 at 0.00%	0.26	OK	
	LC20 at 100.00%	0.32	OK	
	LC21 at 100.00%	0.26	OK	
	LC22 at 100.00%	0.26	OK	
	LC23 at 100.00%	0.26	OK	
	LC24 at 100.00%	0.26	OK	
	LC25 at 0.00%	0.21	OK	
	LC26 at 0.00%	0.22	OK	
	LC27 at 0.00%	0.22	OK	
	LC28 at 0.00%	0.21	OK	
	LC29 at 0.00%	0.20	OK	
	LC3 at 0.00%	0.27	OK	
	LC30 at 0.00%	0.21	OK	
	LC31 at 0.00%	0.21	OK	
	LC32 at 0.00%	0.20	OK	
	LC4 at 93.75%	0.21	OK	
	LC5 at 95.83%	0.18	OK	
	LC6 at 0.00%	0.21	OK	
	LC7 at 0.00%	0.22	OK	
	LC8 at 93.75%	0.18	OK	
	LC9 at 0.00%	0.38	OK	
20	LC1 at 89.58%	0.26	OK	
	LC10 at 0.00%	0.52	OK	
	LC11 at 0.00%	**0.52**	**OK**	Eq. H1-1b
	LC12 at 0.00%	0.50	OK	
	LC13 at 0.00%	0.28	OK	
	LC14 at 0.00%	0.21	OK	
	LC15 at 0.00%	0.28	OK	
	LC16 at 0.00%	0.30	OK	
	LC17 at 0.00%	0.32	OK	
	LC18 at 0.00%	0.32	OK	
	LC19 at 0.00%	0.32	OK	
	LC2 at 0.00%	0.33	OK	
	LC20 at 0.00%	0.32	OK	
	LC21 at 0.00%	0.28	OK	
	LC22 at 0.00%	0.29	OK	
	LC23 at 0.00%	0.29	OK	
	LC24 at 0.00%	0.28	OK	
	LC25 at 0.00%	0.28	OK	
	LC26 at 0.00%	0.28	OK	
	LC27 at 0.00%	0.28	OK	

	LC28 at 0.00%	0.28	OK	
	LC29 at 0.00%	0.30	OK	
	LC3 at 0.00%	0.35	OK	
	LC30 at 0.00%	0.30	OK	
	LC31 at 0.00%	0.30	OK	
	LC32 at 0.00%	0.30	OK	
	LC4 at 89.58%	0.25	OK	
	LC5 at 89.58%	0.22	OK	
	LC6 at 0.00%	0.26	OK	
	LC7 at 0.00%	0.28	OK	
	LC8 at 89.58%	0.21	OK	
	LC9 at 0.00%	0.50	OK	
22	LC1 at 89.58%	0.22	OK	
	LC10 at 0.00%	0.49	OK	
	LC11 at 0.00%	**0.50**	**OK**	Eq. H1-1b
	LC12 at 0.00%	0.50	OK	
	LC13 at 0.00%	0.27	OK	
	LC14 at 0.00%	0.20	OK	
	LC15 at 0.00%	0.27	OK	
	LC16 at 0.00%	0.31	OK	
	LC17 at 0.00%	0.29	OK	
	LC18 at 0.00%	0.29	OK	
	LC19 at 0.00%	0.30	OK	
	LC2 at 0.00%	0.22	OK	
	LC20 at 0.00%	0.30	OK	
	LC21 at 0.00%	0.27	OK	
	LC22 at 0.00%	0.27	OK	
	LC23 at 0.00%	0.28	OK	
	LC24 at 0.00%	0.28	OK	
	LC25 at 0.00%	0.28	OK	
	LC26 at 0.00%	0.28	OK	
	LC27 at 0.00%	0.28	OK	
	LC28 at 0.00%	0.28	OK	
	LC29 at 0.00%	0.31	OK	
	LC3 at 0.00%	0.36	OK	
	LC30 at 0.00%	0.31	OK	
	LC31 at 0.00%	0.31	OK	
	LC32 at 0.00%	0.31	OK	
	LC4 at 0.00%	0.33	OK	
	LC5 at 89.58%	0.18	OK	
	LC6 at 89.58%	0.16	OK	
	LC7 at 0.00%	0.29	OK	
	LC8 at 0.00%	0.26	OK	
	LC9 at 0.00%	0.48	OK	
23	LC1 at 100.00%	0.24	OK	
	LC10 at 100.00%	0.40	OK	
	LC11 at 100.00%	0.40	OK	
	LC12 at 100.00%	**0.41**	**OK**	Eq. H1-1b
	LC13 at 100.00%	0.21	OK	
	LC14 at 100.00%	0.16	OK	
	LC15 at 100.00%	0.27	OK	
	LC16 at 100.00%	0.34	OK	
	LC17 at 100.00%	0.23	OK	
	LC18 at 100.00%	0.23	OK	
	LC19 at 100.00%	0.23	OK	
	LC2 at 100.00%	0.20	OK	
	LC20 at 100.00%	0.23	OK	
	LC21 at 100.00%	0.26	OK	
	LC22 at 100.00%	0.26	OK	
	LC23 at 100.00%	0.26	OK	
	LC24 at 100.00%	0.26	OK	
	LC25 at 100.00%	0.31	OK	

		LC26 at 100.00%	0.31	OK	
		LC27 at 100.00%	0.31	OK	
		LC28 at 100.00%	0.31	OK	
		LC29 at 100.00%	0.37	OK	
		LC3 at 0.00%	0.22	OK	
		LC30 at 100.00%	0.37	OK	
		LC31 at 100.00%	0.37	OK	
		LC32 at 100.00%	0.37	OK	
		LC4 at 100.00%	0.23	OK	
		LC5 at 100.00%	0.19	OK	
		LC6 at 93.75%	0.14	OK	
		LC7 at 0.00%	0.18	OK	
		LC8 at 100.00%	0.18	OK	
		LC9 at 100.00%	0.41	OK	
	24	LC1 at 100.00%	0.27	OK	
		LC10 at 100.00%	0.50	OK	
		LC11 at 100.00%	0.52	OK	
		LC12 at 100.00%	**0.53**	**OK**	Eq. H1-1b
		LC13 at 100.00%	0.28	OK	
		LC14 at 100.00%	0.21	OK	
		LC15 at 100.00%	0.33	OK	
		LC16 at 8.33%	0.36	OK	
		LC17 at 100.00%	0.33	OK	
		LC18 at 100.00%	0.32	OK	
		LC19 at 100.00%	0.33	OK	
		LC2 at 10.42%	0.24	OK	
		LC20 at 100.00%	0.33	OK	
		LC21 at 100.00%	0.34	OK	
		LC22 at 100.00%	0.34	OK	
		LC23 at 100.00%	0.34	OK	
		LC24 at 100.00%	0.35	OK	
		LC25 at 100.00%	0.36	OK	
		LC26 at 100.00%	0.36	OK	
		LC27 at 100.00%	0.36	OK	
		LC28 at 100.00%	0.37	OK	
		LC29 at 8.33%	0.40	OK	
		LC3 at 100.00%	0.30	OK	
		LC30 at 8.33%	0.39	OK	
		LC31 at 8.33%	0.39	OK	
		LC32 at 8.33%	0.40	OK	
		LC4 at 100.00%	0.37	OK	
		LC5 at 100.00%	0.20	OK	
		LC6 at 10.42%	0.19	OK	
		LC7 at 100.00%	0.23	OK	
		LC8 at 85.42%	0.30	OK	
		LC9 at 100.00%	0.51	OK	
PL 6x5/8	**26**	LC1 at 50.00%	1.04	N.G.	
		LC10 at 50.00%	1.57	N.G.	
		LC11 at 50.00%	1.55	N.G.	
		LC12 at 50.00%	1.62	N.G.	
		LC13 at 50.00%	0.75	OK	
		LC14 at 50.00%	0.54	OK	
		LC15 at 50.00%	0.99	OK	
		LC16 at 50.00%	0.99	OK	
		LC17 at 50.00%	0.92	OK	
		LC18 at 50.00%	0.90	OK	
		LC19 at 50.00%	0.89	OK	
		LC2 at 50.00%	0.61	OK	
		LC20 at 50.00%	0.92	OK	
		LC21 at 50.00%	1.01	N.G.	
		LC22 at 50.00%	0.98	OK	
		LC23 at 50.00%	0.98	OK	

	LC24 at 50.00%	1.00	OK	
	LC25 at 50.00%	1.14	N.G.	
	LC26 at 50.00%	1.12	N.G.	
	LC27 at 50.00%	1.11	N.G.	
	LC28 at 50.00%	1.13	N.G.	
	LC29 at 50.00%	1.10	N.G.	
	LC3 at 0.00%	0.73	OK	
	LC30 at 50.00%	1.08	N.G.	
	LC31 at 50.00%	1.07	N.G.	
	LC32 at 50.00%	1.10	N.G.	
	LC4 at 0.00%	0.97	OK	
	LC5 at 50.00%	0.82	OK	
	LC6 at 50.00%	0.39	OK	
	LC7 at 0.00%	0.54	OK	
	LC8 at 0.00%	0.77	OK	
	LC9 at 50.00%	**1.64**	**N.G.**	Eq. H3-6
27	LC1 at 0.00%	0.99	OK	
	LC10 at 50.00%	**1.67**	**N.G.**	Eq. H3-6
	LC11 at 50.00%	1.61	N.G.	
	LC12 at 50.00%	1.56	N.G.	
	LC13 at 50.00%	0.76	OK	
	LC14 at 50.00%	0.54	OK	
	LC15 at 46.88%	0.93	OK	
	LC16 at 50.00%	0.88	OK	
	LC17 at 50.00%	1.13	N.G.	
	LC18 at 50.00%	1.15	N.G.	
	LC19 at 50.00%	1.13	N.G.	
	LC2 at 50.00%	1.11	N.G.	
	LC20 at 50.00%	1.11	N.G.	
	LC21 at 46.88%	1.07	N.G.	
	LC22 at 46.88%	1.06	N.G.	
	LC23 at 46.88%	1.05	N.G.	
	LC24 at 46.88%	1.05	N.G.	
	LC25 at 46.88%	0.94	OK	
	LC26 at 50.00%	0.95	OK	
	LC27 at 50.00%	0.93	OK	
	LC28 at 46.88%	0.92	OK	
	LC29 at 50.00%	0.91	OK	
	LC3 at 50.00%	0.74	OK	
	LC30 at 50.00%	0.93	OK	
	LC31 at 50.00%	0.91	OK	
	LC32 at 50.00%	0.89	OK	
	LC4 at 0.00%	0.64	OK	
	LC5 at 0.00%	0.78	OK	
	LC6 at 50.00%	0.89	OK	
	LC7 at 100.00%	0.51	OK	
	LC8 at 0.00%	0.43	OK	
	LC9 at 50.00%	1.62	N.G.	
28	LC1 at 50.00%	0.44	OK	
	LC10 at 50.00%	1.53	N.G.	
	LC11 at 50.00%	**1.54**	**N.G.**	Eq. H3-6
	LC12 at 50.00%	1.48	N.G.	
	LC13 at 50.00%	0.73	OK	
	LC14 at 50.00%	0.52	OK	
	LC15 at 50.00%	0.76	OK	
	LC16 at 50.00%	0.82	OK	
	LC17 at 50.00%	0.83	OK	
	LC18 at 50.00%	0.85	OK	
	LC19 at 50.00%	0.85	OK	
	LC2 at 50.00%	0.84	OK	
	LC20 at 50.00%	0.83	OK	
	LC21 at 50.00%	0.77	OK	

LC22 at 50.00%	0.79	OK
LC23 at 50.00%	0.79	OK
LC24 at 50.00%	0.77	OK
LC25 at 50.00%	0.76	OK
LC26 at 50.00%	0.78	OK
LC27 at 50.00%	0.79	OK
LC28 at 50.00%	0.77	OK
LC29 at 50.00%	0.82	OK
LC3 at 50.00%	1.01	N.G.
LC30 at 50.00%	0.84	OK
LC31 at 50.00%	0.84	OK
LC32 at 50.00%	0.82	OK
LC4 at 0.00%	0.84	OK
LC5 at 50.00%	0.26	OK
LC6 at 100.00%	0.65	OK
LC7 at 50.00%	0.81	OK
LC8 at 0.00%	0.65	OK
LC9 at 50.00%	1.46	N.G.

Bentley

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
3	0.00	0.00	-0.625	0
4	0.625	0.00	0.00	0
5	-0.625	0.00	0.00	0
13	7.422	0.00	3.6053	0
14	0.5887	0.00	-8.2303	0
15	0.00	0.00	-8.2303	0
21	0.00	-0.25	-0.625	0
22	0.00	0.00	-2.9166	0
23	0.00	-0.25	-4.3333	0
33	5.1304	0.00	-0.364	0
34	2.8804	0.00	-4.2611	0
39	-0.5887	0.00	-8.2303	0
40	-2.8804	0.00	-4.261	0
41	-5.1304	0.00	-0.3639	0
42	-7.422	0.00	3.6053	0
43	-6.8333	0.00	4.625	0
44	-2.25	0.00	4.625	0
45	2.25	0.00	4.625	0
46	6.8333	0.00	4.625	0
50	0.00	0.00	-3.0937	0
51	-2.6658	0.00	-4.6328	0

64	-2.6792	0.00	4.625	0
65	-7.1277	0.00	4.1152	0
66	-0.5413	-0.25	0.3125	0
67	-2.5258	0.00	1.4583	0
68	-3.7527	-0.25	2.1666	0
75	-2.6792	0.00	1.5468	0
76	-5.345	0.00	0.0078	0
90	2.5258	0.00	1.4583	0
91	3.7527	-0.25	2.1666	0
98	2.6792	0.00	1.5468	0
99	5.345	0.00	0.0078	0
100	7.1277	0.00	4.1152	0
101	2.6792	0.00	4.625	0
102	0.5413	-0.25	0.3125	0
105	2.6658	0.00	-4.6328	0
138	5.1789	4.00	-0.6798	0
139	3.1782	3.00	-4.1452	0
140	1.0949	3.00	-7.7535	0
141	-1.0949	3.00	-7.7535	0
142	-3.1782	4.00	-4.1452	0
143	-5.1789	3.00	-0.6798	0
144	-7.2622	3.00	2.9285	0
145	-6.1673	3.00	4.825	0
146	-2.0007	4.00	4.825	0
147	2.0007	3.00	4.825	0
148	6.1673	3.00	4.825	0
149	7.2622	3.00	2.9285	0
150	5.1789	-4.00	-0.6798	0
151	3.1782	-3.00	-4.1452	0
152	1.0949	-3.00	-7.7535	0
153	-1.0949	-3.00	-7.7535	0
154	-3.1782	-4.00	-4.1452	0
155	-5.1789	-3.00	-0.6798	0
156	-7.2622	-3.00	2.9285	0
157	-6.1673	-3.00	4.825	0
158	-2.0007	-4.00	4.825	0
159	2.0007	-3.00	4.825	0
160	6.1673	-3.00	4.825	0
161	7.2622	-3.00	2.9285	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
21	1	1	1	1	1	1
66	1	1	1	1	1	1
102	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
8	21	23		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
9	22	15		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
13	43	44		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
14	44	45		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
15	45	46		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
16	33	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
18	34	33		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
20	14	34		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
22	39	40		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
23	40	41		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
24	41	42		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
26	42	43		PL 6x5/8	A36	0.00	0.00	0.00
27	46	13		PL 6x5/8	A36	0.00	0.00	0.00
28	39	14		PL 6x5/8	A36	0.00	0.00	0.00
29	50	51		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
36	75	64		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
37	66	68		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
38	67	65		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
50	102	91		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
51	90	100		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
55	98	99		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
56	98	101		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
58	50	105		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
59	75	76		L 1-1/2x1-1/2x1/4	A36	0.00	0.00	0.00
76	138	150		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
77	149	161		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	139	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	140	152		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	141	153		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	142	154		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
82	143	155		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
83	144	156		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
84	145	157		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
85	146	158		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
86	147	159		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	148	160		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
56	270.00	0	0.00	0.00	0.00
58	270.00	0	0.00	0.00	0.00
59	270.00	0	0.00	0.00	0.00

HUDSON
Design Group LLC

3C/4C/5C Mount Calculations
(Proposed Conditions)

Bentley

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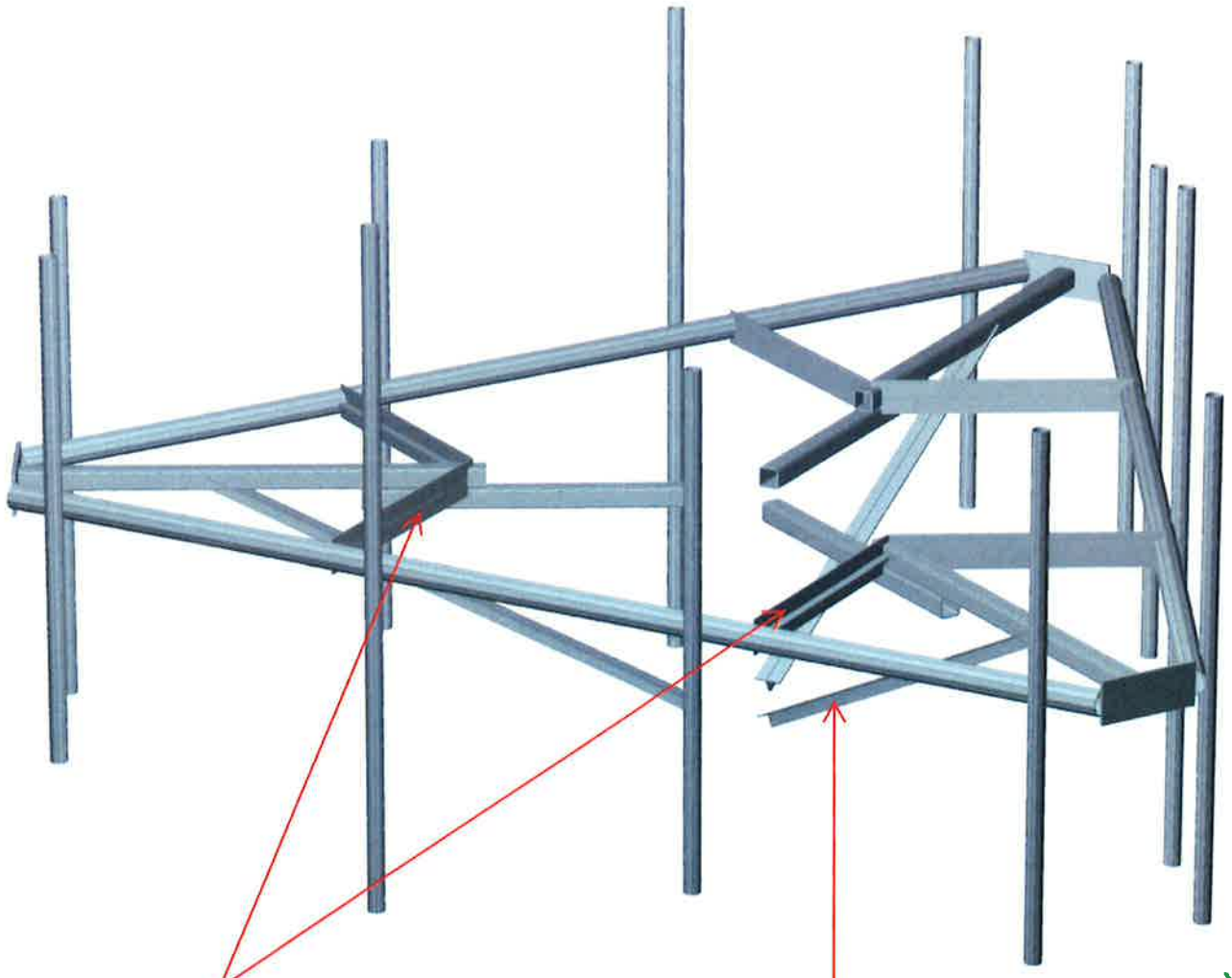
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155 (MOD).etz\



Reinforce existing 1-1/2"x2-1/2"x1/4" steel angles with new 1-1/2"x2-1/2"x1/4" steel angles (typ. of 2 per sector, total of 6).

Install new platform reinforcement kit, SitePro1 P/N PRK-1245L (or approved equal).

Bentley

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Units system: English
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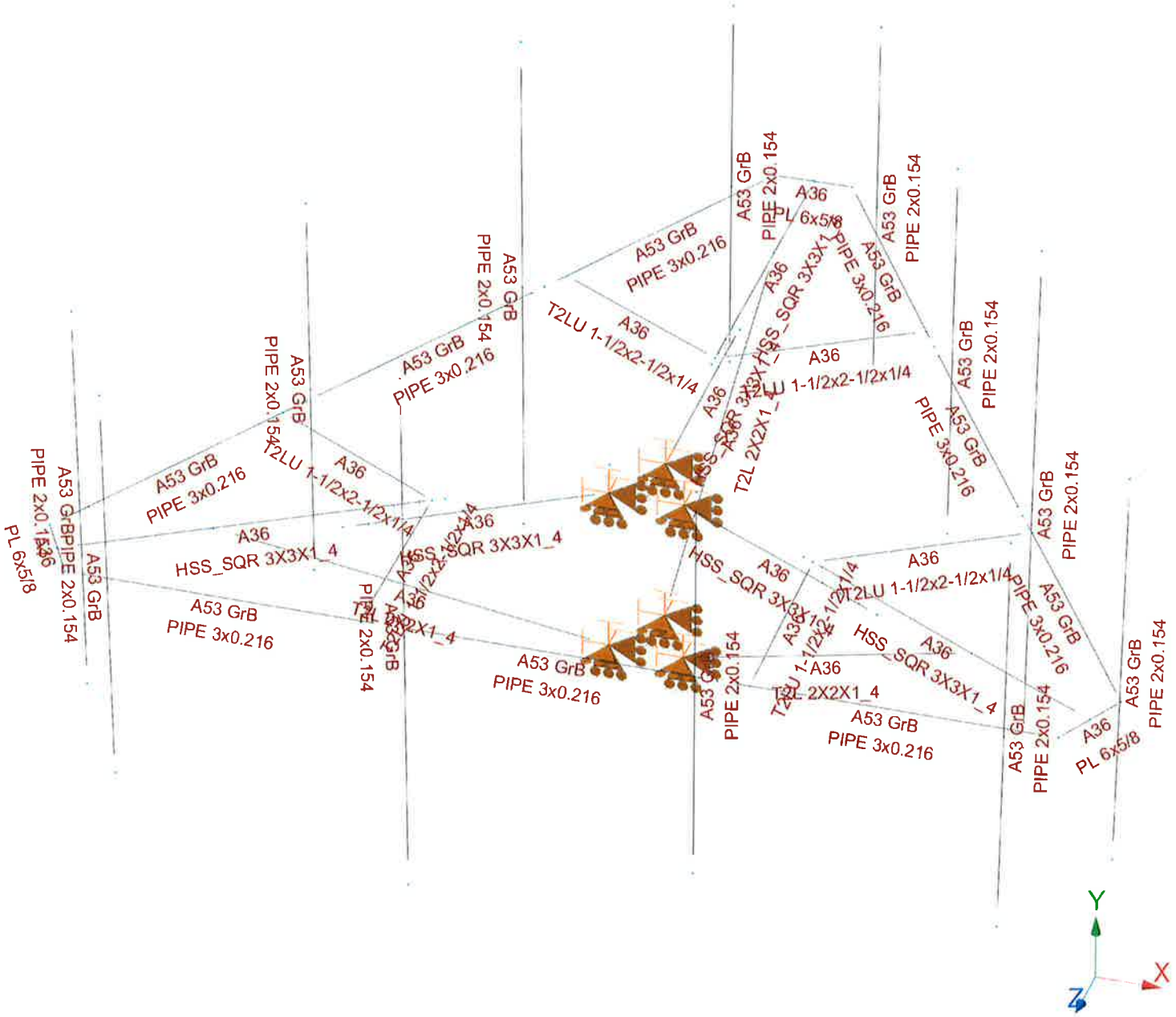

Bentley

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Units system: English
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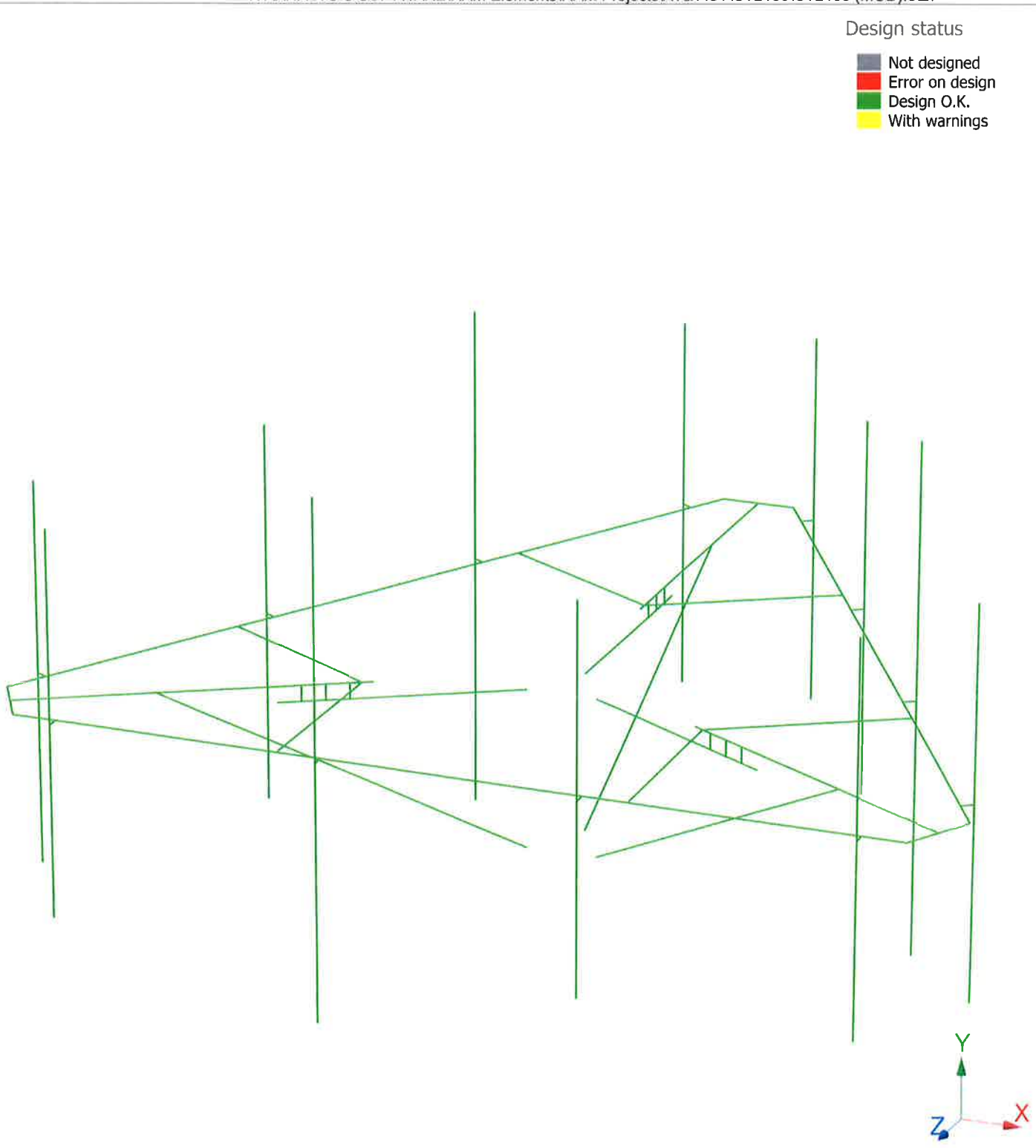

Bentley

Current Date: 7/9/2018 11:27 AM
Units system: English
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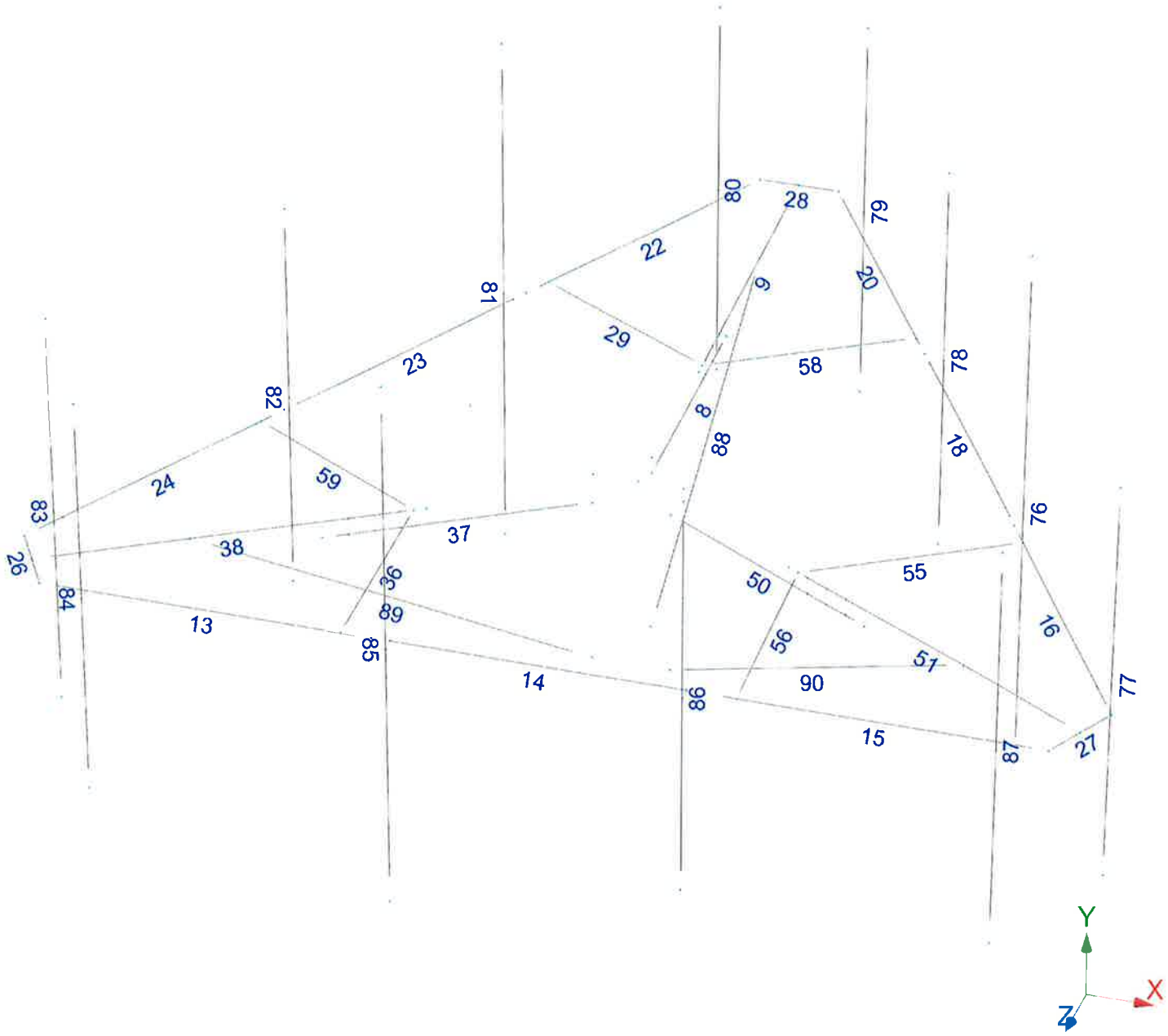

Bentley

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Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155 (MOD).etz\

Load data

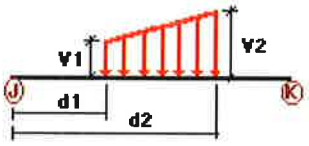
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load on Antenna 1	No	LL
LLa2	500 lb Live Load on Antenna 2	No	LL
LLa3	500 lb Live Load on Antenna 3	No	LL
LLa4	500 lb Live Load on Antenna 4	No	LL
W180	-W0	Yes	
W210	-W30	Yes	
Wi180	-Wi0	Yes	
Wi210	-Wi30	Yes	
WL180	-WL0	Yes	
WL210	-WL30	Yes	

Distributed force on members

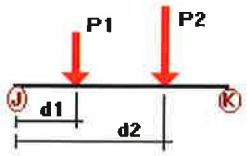


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	9	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	36	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	38	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	51	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	55	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	56	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	58	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	59	Y	-0.01	-0.01	0.00	Yes	100.00	Yes

W0	13	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	14	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	15	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	16	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	18	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	24	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	37	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	38	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	50	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	51	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	55	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	58	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	77	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	78	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	79	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	80	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	81	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	82	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	83	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	84	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	85	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	86	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	87	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
W30	8	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	9	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	16	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	18	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	24	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	29	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	36	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	37	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	38	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	50	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	51	X	-0.014	-0.014	0.00	Yes	100.00	Yes
	55	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	56	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	58	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	77	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	78	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	79	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	80	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	81	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	82	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	83	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	84	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	85	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	86	X	-0.006	-0.006	0.00	Yes	100.00	Yes
	87	X	-0.006	-0.006	0.00	Yes	100.00	Yes
Di	8	Y	-0.006	-0.006	0.00	Yes	100.00	Yes

9	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
13	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
14	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
15	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
16	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
18	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
20	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
22	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
23	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
24	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
26	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
27	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
28	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
29	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
36	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
37	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
38	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
50	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
51	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
55	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
56	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
58	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
59	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
76	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
77	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
78	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
79	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
80	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
81	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
82	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
83	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
84	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
85	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
86	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
87	Y	-0.004	-0.004	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	76	y	-0.039	1.00	No
		y	-0.039	7.00	No
		y	-0.06	3.00	No
	77	y	-0.025	1.00	No
		y	-0.025	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	78	y	-0.028	4.00	No
	79	y	-0.018	1.00	No
		y	-0.018	5.00	No

		y	-0.016	3.00	No
	80	y	-0.021	1.00	No
		y	-0.021	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	81	y	-0.032	1.00	No
		y	-0.032	7.00	No
		y	-0.06	3.00	No
	82	y	-0.028	4.00	No
	83	y	-0.018	1.00	No
		y	-0.018	5.00	No
		y	-0.016	3.00	No
	84	y	-0.025	1.00	No
		y	-0.025	5.00	No
		y	-0.051	2.00	No
		y	-0.058	4.00	No
	85	y	-0.039	1.00	No
		y	-0.039	7.00	No
		y	-0.06	3.00	No
	86	y	-0.033	2.00	No
		y	-0.028	4.00	No
	87	y	-0.018	1.00	No
		y	-0.018	5.00	No
		y	-0.016	3.00	No
W0	76	z	-0.09	1.00	No
		z	-0.09	7.00	No
		z	-0.053	3.00	No
	77	z	-0.075	1.00	No
		z	-0.075	5.00	No
		z	-0.039	2.00	No
		z	-0.042	4.00	No
	79	z	-0.049	1.00	No
		z	-0.049	5.00	No
		z	-0.013	3.00	No
	80	z	-0.075	1.00	No
		z	-0.075	5.00	No
		z	-0.039	2.00	No
		z	-0.042	4.00	No
	81	z	-0.09	1.00	No
		z	-0.09	7.00	No
		z	-0.053	3.00	No
	83	z	-0.049	1.00	No
		z	-0.049	5.00	No
		z	-0.013	3.00	No
	84	z	-0.11	1.00	No
		z	-0.11	5.00	No
		z	-0.024	2.00	No
		z	-0.032	4.00	No
	85	z	-0.139	1.00	No
		z	-0.139	7.00	No
	86	z	-0.031	2.00	No
	87	z	-0.076	1.00	No
		z	-0.076	5.00	No
W30	76	2	-0.123	1.00	No
		2	-0.123	7.00	No
		2	-0.067	3.00	No
	77	2	-0.098	1.00	No
		2	-0.098	5.00	No
		2	-0.037	2.00	No
		2	-0.041	4.00	No

	79	2	-0.067	1.00	No
		2	-0.067	5.00	No
		2	-0.014	3.00	No
	80	2	-0.072	1.00	No
		2	-0.072	5.00	No
		2	-0.037	2.00	No
		2	-0.041	4.00	No
	81	2	-0.089	1.00	No
		2	-0.089	7.00	No
		2	-0.067	3.00	No
	83	2	-0.067	1.00	No
		2	-0.067	5.00	No
		2	-0.014	3.00	No
	84	x	-0.064	1.00	No
		x	-0.064	5.00	No
		x	-0.033	2.00	No
		x	-0.035	4.00	No
	85	x	-0.074	1.00	No
		x	-0.074	7.00	No
		x	-0.045	3.00	No
	86	x	-0.031	2.00	No
	87	x	-0.04	1.00	No
		x	-0.04	5.00	No
		x	-0.012	3.00	No
Di	76	y	-0.062	1.00	No
		y	-0.062	7.00	No
		y	-0.045	3.00	No
	77	y	-0.05	1.00	No
		y	-0.05	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	78	y	-0.013	4.00	No
	79	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
	80	y	-0.039	1.00	No
		y	-0.039	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	81	y	-0.048	1.00	No
		y	-0.048	7.00	No
		y	-0.045	3.00	No
	82	y	-0.013	4.00	No
	83	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
	84	y	-0.05	1.00	No
		y	-0.05	5.00	No
		y	-0.045	2.00	No
		y	-0.05	4.00	No
	85	y	-0.062	1.00	No
		y	-0.062	7.00	No
		y	-0.045	3.00	No
	86	y	-0.035	2.00	No
		y	-0.013	4.00	No
	87	y	-0.035	1.00	No
		y	-0.035	5.00	No
		y	-0.013	3.00	No
Wi0	76	z	-0.028	1.00	No
		z	-0.028	7.00	No

		z	-0.019	3.00	No
	77	z	-0.024	1.00	No
		z	-0.024	5.00	No
		z	-0.016	2.00	No
		z	-0.017	4.00	No
	79	z	-0.017	1.00	No
		z	-0.017	5.00	No
		z	-0.019	3.00	No
	80	z	-0.018	1.00	No
		z	-0.018	5.00	No
		z	-0.016	2.00	No
		z	-0.017	4.00	No
	81	z	-0.02	1.00	No
		z	-0.02	7.00	No
		z	-0.019	3.00	No
	83	z	-0.017	1.00	No
		z	-0.017	5.00	No
		z	-0.019	3.00	No
	84	z	-0.033	1.00	No
		z	-0.033	5.00	No
	85	z	-0.039	1.00	No
		z	-0.039	7.00	No
	86	z	-0.011	2.00	No
	87	z	-0.023	1.00	No
		z	-0.023	5.00	No
Wi30	76	2	-0.034	1.00	No
		2	-0.034	7.00	No
		2	-0.022	3.00	No
	77	2	-0.029	1.00	No
		2	-0.029	5.00	No
		2	-0.021	2.00	No
		2	-0.023	4.00	No
	79	2	-0.021	1.00	No
		2	-0.021	5.00	No
		2	-0.007	3.00	No
	80	2	-0.022	1.00	No
		2	-0.022	5.00	No
		2	-0.021	2.00	No
		2	-0.023	4.00	No
	81	2	-0.026	1.00	No
		2	-0.026	7.00	No
		2	-0.022	3.00	No
	83	2	-0.021	1.00	No
		2	-0.021	5.00	No
		2	-0.007	3.00	No
	84	x	-0.022	1.00	No
		x	-0.022	5.00	No
		x	-0.013	2.00	No
		x	-0.014	4.00	No
	85	x	-0.024	1.00	No
		x	-0.024	7.00	No
		x	-0.017	3.00	No
	86	x	-0.011	2.00	No
	87	x	-0.015	1.00	No
		x	-0.015	5.00	No
		x	-0.007	3.00	No
WL0	76	z	-0.01	1.00	No
		z	-0.01	7.00	No
		z	-0.006	3.00	No
	77	z	-0.009	1.00	No

		z	-0.009	5.00	No
		z	-0.005	2.00	No
		z	-0.005	4.00	No
	79	z	-0.006	1.00	No
		z	-0.006	5.00	No
		z	-0.002	3.00	No
	80	z	-0.007	1.00	No
		z	-0.007	5.00	No
		z	-0.005	2.00	No
		z	-0.005	4.00	No
	81	z	-0.008	1.00	No
		z	-0.008	7.00	No
		z	-0.006	3.00	No
	83	z	-0.006	1.00	No
		z	-0.006	5.00	No
		z	-0.002	3.00	No
	84	z	-0.013	1.00	No
		z	-0.013	5.00	No
		z	-0.003	2.00	No
		z	-0.004	4.00	No
	85	z	-0.016	1.00	No
		z	-0.016	7.00	No
	86	z	-0.003	2.00	No
	87	z	-0.009	1.00	No
		z	-0.009	5.00	No
WL30	76	2	-0.014	1.00	No
		2	-0.014	7.00	No
		2	-0.008	3.00	No
	77	2	-0.011	1.00	No
		2	-0.011	5.00	No
		2	-0.005	2.00	No
		2	-0.005	4.00	No
	79	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.002	3.00	No
	80	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.005	2.00	No
		2	-0.005	4.00	No
	81	2	-0.01	1.00	No
		2	-0.01	7.00	No
		2	-0.008	3.00	No
	83	2	-0.008	1.00	No
		2	-0.008	5.00	No
		2	-0.002	3.00	No
	84	x	-0.008	1.00	No
		x	-0.008	5.00	No
		x	-0.004	2.00	No
		x	-0.004	4.00	No
	85	x	-0.009	1.00	No
		x	-0.009	7.00	No
		x	-0.006	3.00	No
	86	x	-0.003	2.00	No
	87	x	-0.005	1.00	No
		x	-0.005	5.00	No
		x	-0.002	3.00	No
LL1	14	y	-0.25	2.25	No
LL2	13	y	-0.25	0.00	No
LLa1	87	y	-0.50	3.00	No
LLa2	86	y	-0.50	3.00	No

LLa3	85	y	-0.50	4.00	No
LLa4	84	y	-0.50	3.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load on Antenna 4	No	0.00	0.00	0.00
W180	-W0	Yes	0.00	0.00	0.00
W210	-W30	Yes	0.00	0.00	0.00
Wi180	-Wi0	Yes	0.00	0.00	0.00
Wi210	-Wi30	Yes	0.00	0.00	0.00
WL180	-WL0	Yes	0.00	0.00	0.00
WL210	-WL30	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00
W180	0.00	0.00	0.00
W210	0.00	0.00	0.00
Wi180	0.00	0.00	0.00
Wi210	0.00	0.00	0.00
WL180	0.00	0.00	0.00

WL210	0.00	0.00	0.00

Bentley

Current Date: 7/9/2018 11:27 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155 (MOD).etz\

Steel Code Check

Report: Summary - For all selected load conditions

Load conditions to be included in design :

LC1=1.2DL+1.6W0
LC2=1.2DL+1.6W30
LC3=1.2DL-1.6W0
LC4=1.2DL-1.6W30
LC5=0.9DL+1.6W0
LC6=0.9DL+1.6W30
LC7=0.9DL-1.6W0
LC8=0.9DL-1.6W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC14=0.9DL
LC15=1.2DL+1.6LL1
LC16=1.2DL+1.6LL2
LC17=1.2DL+WL0+LLa1
LC18=1.2DL+WL30+LLa1
LC19=1.2DL-WL0+LLa1
LC20=1.2DL-WL30+LLa1
LC21=1.2DL+WL0+LLa2
LC22=1.2DL+WL30+LLa2
LC23=1.2DL-WL0+LLa2
LC24=1.2DL-WL30+LLa2
LC25=1.2DL+WL0+LLa3
LC26=1.2DL+WL30+LLa3
LC27=1.2DL-WL0+LLa3
LC28=1.2DL-WL30+LLa3
LC29=1.2DL+WL0+LLa4
LC30=1.2DL+WL30+LLa4
LC31=1.2DL-WL0+LLa4
LC32=1.2DL-WL30+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**8**	LC1 at 70.31%	0.15	OK	
			LC10 at 0.00%	0.09	OK	
			LC11 at 0.00%	0.06	OK	
			LC12 at 0.00%	0.08	OK	
			LC13 at 0.00%	0.04	OK	
			LC14 at 0.00%	0.03	OK	
			LC15 at 0.00%	0.03	OK	
			LC16 at 0.00%	0.04	OK	
			LC17 at 0.00%	0.03	OK	
			LC18 at 0.00%	0.04	OK	
			LC19 at 0.00%	0.03	OK	
			LC2 at 0.00%	0.41	OK	
			LC20 at 0.00%	0.04	OK	
			LC21 at 70.31%	0.03	OK	
			LC22 at 0.00%	0.04	OK	
			LC23 at 89.06%	0.03	OK	
			LC24 at 0.00%	0.03	OK	

	LC25 at 0.00%	0.03	OK	
	LC26 at 0.00%	0.04	OK	
	LC27 at 89.06%	0.03	OK	
	LC28 at 0.00%	0.03	OK	
	LC29 at 0.00%	0.04	OK	
	LC3 at 0.00%	0.09	OK	
	LC30 at 0.00%	0.05	OK	
	LC31 at 89.06%	0.03	OK	
	LC32 at 0.00%	0.04	OK	
	LC4 at 0.00%	**0.41**	**OK**	Eq. H1-1b
	LC5 at 70.31%	0.14	OK	
	LC6 at 0.00%	0.40	OK	
	LC7 at 70.31%	0.09	OK	
	LC8 at 0.00%	0.40	OK	
	LC9 at 70.31%	0.07	OK	
9	LC1 at 20.83%	0.20	OK	Eq. H1-1b
	LC10 at 59.38%	**0.28**	**OK**	Eq. H1-1b
	LC11 at 60.42%	0.28	OK	Eq. H1-1b
	LC12 at 60.42%	0.28	OK	Eq. H1-1b
	LC13 at 60.42%	0.15	OK	
	LC14 at 60.42%	0.11	OK	
	LC15 at 60.42%	0.16	OK	
	LC16 at 60.42%	0.15	OK	
	LC17 at 59.38%	0.15	OK	
	LC18 at 59.38%	0.15	OK	
	LC19 at 60.42%	0.15	OK	
	LC2 at 60.42%	0.22	OK	
	LC20 at 60.42%	0.15	OK	
	LC21 at 60.42%	0.16	OK	
	LC22 at 60.42%	0.16	OK	
	LC23 at 60.42%	0.16	OK	
	LC24 at 60.42%	0.16	OK	
	LC25 at 60.42%	0.16	OK	
	LC26 at 60.42%	0.16	OK	
	LC27 at 60.42%	0.16	OK	
	LC28 at 60.42%	0.16	OK	
	LC29 at 60.42%	0.15	OK	
	LC3 at 60.42%	0.17	OK	
	LC30 at 60.42%	0.15	OK	
	LC31 at 60.42%	0.15	OK	
	LC32 at 60.42%	0.15	OK	
	LC4 at 60.42%	0.22	OK	Eq. H1-1b
	LC5 at 20.83%	0.18	OK	
	LC6 at 60.42%	0.18	OK	
	LC7 at 60.42%	0.13	OK	
	LC8 at 60.42%	0.18	OK	
	LC9 at 59.38%	0.28	OK	
37	LC1 at 0.00%	0.31	OK	Eq. H1-1b
	LC10 at 70.31%	0.07	OK	
	LC11 at 0.00%	0.09	OK	
	LC12 at 89.06%	0.07	OK	
	LC13 at 0.00%	0.05	OK	
	LC14 at 0.00%	0.04	OK	
	LC15 at 0.00%	0.09	OK	
	LC16 at 70.31%	0.09	OK	
	LC17 at 0.00%	0.06	OK	
	LC18 at 0.00%	0.05	OK	
	LC19 at 0.00%	0.06	OK	
	LC2 at 70.31%	0.15	OK	
	LC20 at 0.00%	0.05	OK	
	LC21 at 0.00%	0.08	OK	
	LC22 at 0.00%	0.09	OK	

	LC23 at 0.00%	0.10	OK	
	LC24 at 0.00%	0.08	OK	
	LC25 at 0.00%	0.10	OK	
	LC26 at 0.00%	0.10	OK	
	LC27 at 0.00%	0.11	OK	
	LC28 at 0.00%	0.10	OK	
	LC29 at 70.31%	0.09	OK	
	LC3 at 0.00%	**0.33**	**OK**	Eq. H1-1b
	LC30 at 70.31%	0.10	OK	
	LC31 at 70.31%	0.10	OK	
	LC32 at 70.31%	0.09	OK	
	LC4 at 70.31%	0.10	OK	
	LC5 at 0.00%	0.31	OK	
	LC6 at 70.31%	0.14	OK	
	LC7 at 0.00%	0.31	OK	
	LC8 at 70.31%	0.10	OK	
	LC9 at 0.00%	0.07	OK	
38	LC1 at 60.42%	0.24	OK	Eq. H1-1b
	LC10 at 59.38%	0.30	OK	
	LC11 at 59.38%	0.31	OK	
	LC12 at 59.38%	0.30	OK	
	LC13 at 59.38%	0.16	OK	
	LC14 at 59.38%	0.12	OK	
	LC15 at 59.38%	0.19	OK	
	LC16 at 59.38%	0.30	OK	
	LC17 at 59.38%	0.16	OK	
	LC18 at 59.38%	0.16	OK	
	LC19 at 59.38%	0.16	OK	
	LC2 at 20.83%	0.21	OK	
	LC20 at 59.38%	0.16	OK	
	LC21 at 59.38%	0.18	OK	
	LC22 at 59.38%	0.18	OK	
	LC23 at 59.38%	0.18	OK	
	LC24 at 59.38%	0.18	OK	
	LC25 at 59.38%	0.22	OK	
	LC26 at 59.38%	0.23	OK	
	LC27 at 59.38%	0.23	OK	
	LC28 at 59.38%	0.23	OK	
	LC29 at 59.38%	0.32	OK	
	LC3 at 60.42%	0.23	OK	
	LC30 at 59.38%	0.33	OK	
	LC31 at 59.38%	**0.33**	**OK**	Eq. H1-1b
	LC32 at 59.38%	0.33	OK	
	LC4 at 60.42%	0.18	OK	
	LC5 at 60.42%	0.20	OK	
	LC6 at 20.83%	0.18	OK	
	LC7 at 20.83%	0.20	OK	
	LC8 at 60.42%	0.14	OK	
	LC9 at 60.42%	0.30	OK	
50	LC1 at 0.00%	0.26	OK	
	LC10 at 0.00%	0.08	OK	
	LC11 at 0.00%	0.09	OK	
	LC12 at 0.00%	0.09	OK	
	LC13 at 0.00%	0.05	OK	
	LC14 at 0.00%	0.04	OK	
	LC15 at 0.00%	0.09	OK	
	LC16 at 0.00%	0.05	OK	
	LC17 at 70.31%	0.09	OK	
	LC18 at 70.31%	0.10	OK	
	LC19 at 70.31%	0.10	OK	
	LC2 at 70.31%	0.18	OK	
	LC20 at 70.31%	0.10	OK	

		LC21 at 0.00%	0.09	OK	
		LC22 at 0.00%	0.10	OK	
		LC23 at 0.00%	0.11	OK	
		LC24 at 0.00%	0.09	OK	
		LC25 at 0.00%	0.09	OK	
		LC26 at 0.00%	0.09	OK	
		LC27 at 0.00%	0.09	OK	
		LC28 at 0.00%	0.09	OK	
		LC29 at 0.00%	0.06	OK	
		LC3 at 0.00%	**0.26**	**OK**	Eq. H1-1b
		LC30 at 0.00%	0.06	OK	
		LC31 at 0.00%	0.06	OK	
		LC32 at 0.00%	0.06	OK	
		LC4 at 70.31%	0.23	OK	Eq. H1-1b
		LC5 at 0.00%	0.25	OK	
		LC6 at 70.31%	0.19	OK	
		LC7 at 0.00%	0.25	OK	
		LC8 at 70.31%	0.22	OK	
		LC9 at 0.00%	0.10	OK	
	51	LC1 at 60.42%	0.23	OK	
		LC10 at 60.42%	0.30	OK	
		LC11 at 59.38%	0.30	OK	
		LC12 at 59.38%	0.31	OK	
		LC13 at 60.42%	0.16	OK	
		LC14 at 60.42%	0.12	OK	
		LC15 at 59.38%	0.18	OK	
		LC16 at 60.42%	0.16	OK	
		LC17 at 59.38%	0.32	OK	
		LC18 at 59.38%	0.32	OK	
		LC19 at 59.38%	**0.32**	**OK**	Eq. H1-1b
		LC2 at 60.42%	0.23	OK	Eq. H1-1b
		LC20 at 59.38%	0.32	OK	
		LC21 at 59.38%	0.22	OK	
		LC22 at 59.38%	0.22	OK	
		LC23 at 59.38%	0.22	OK	
		LC24 at 59.38%	0.22	OK	
		LC25 at 4.17%	0.17	OK	
		LC26 at 4.17%	0.17	OK	
		LC27 at 4.17%	0.17	OK	
		LC28 at 59.38%	0.17	OK	
		LC29 at 60.42%	0.16	OK	
		LC3 at 60.42%	0.22	OK	
		LC30 at 60.42%	0.16	OK	
		LC31 at 60.42%	0.16	OK	
		LC32 at 59.38%	0.16	OK	
		LC4 at 20.83%	0.25	OK	Eq. H1-1b
		LC5 at 60.42%	0.19	OK	
		LC6 at 60.42%	0.19	OK	
		LC7 at 60.42%	0.19	OK	
		LC8 at 20.83%	0.22	OK	
		LC9 at 59.38%	0.30	OK	
PIPE 2x0.154	**76**	LC1 at 46.88%	0.43	OK	
		LC10 at 46.88%	0.10	OK	
		LC11 at 46.88%	0.09	OK	
		LC12 at 46.88%	0.10	OK	
		LC13 at 46.88%	0.01	OK	
		LC14 at 46.88%	0.01	OK	
		LC15 at 46.88%	0.01	OK	
		LC16 at 46.88%	0.01	OK	
		LC17 at 46.88%	0.03	OK	
		LC18 at 46.88%	0.04	OK	
		LC19 at 46.88%	0.03	OK	

	LC2 at 46.88%	0.56	OK	
	LC20 at 46.88%	0.04	OK	
	LC21 at 46.88%	0.03	OK	
	LC22 at 46.88%	0.04	OK	
	LC23 at 46.88%	0.03	OK	
	LC24 at 46.88%	0.04	OK	
	LC25 at 46.88%	0.03	OK	
	LC26 at 46.88%	0.04	OK	
	LC27 at 46.88%	0.03	OK	
	LC28 at 46.88%	0.04	OK	
	LC29 at 46.88%	0.03	OK	
	LC3 at 46.88%	0.43	OK	
	LC30 at 46.88%	0.04	OK	
	LC31 at 46.88%	0.03	OK	
	LC32 at 46.88%	0.04	OK	
	LC4 at 46.88%	**0.56**	**OK**	Eq. H1-1b
	LC5 at 46.88%	0.43	OK	
	LC6 at 46.88%	0.56	OK	
	LC7 at 46.88%	0.43	OK	
	LC8 at 46.88%	0.56	OK	
	LC9 at 46.88%	0.09	OK	
77	LC1 at 50.00%	0.28	OK	
	LC10 at 50.00%	0.07	OK	
	LC11 at 50.00%	0.06	OK	
	LC12 at 50.00%	0.07	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	**0.34**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.28	OK	
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	0.34	OK	
	LC5 at 50.00%	0.28	OK	
	LC6 at 50.00%	0.34	OK	
	LC7 at 50.00%	0.28	OK	
	LC8 at 50.00%	0.34	OK	
	LC9 at 50.00%	0.06	OK	
78	LC1 at 50.00%	0.04	OK	
	LC10 at 50.00%	0.00	OK	
	LC11 at 50.00%	0.00	OK	
	LC12 at 50.00%	0.00	OK	
	LC13 at 50.00%	0.00	OK	
	LC14 at 50.00%	0.00	OK	
	LC15 at 50.00%	0.00	OK	
	LC16 at 50.00%	0.00	OK	
	LC17 at 50.00%	0.00	OK	

	LC18 at 50.00%	0.00	OK	
	LC19 at 50.00%	0.00	OK	
	LC2 at 50.00%	**0.04**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.00	OK	
	LC21 at 50.00%	0.00	OK	
	LC22 at 50.00%	0.00	OK	
	LC23 at 50.00%	0.00	OK	
	LC24 at 50.00%	0.00	OK	
	LC25 at 50.00%	0.00	OK	
	LC26 at 50.00%	0.00	OK	
	LC27 at 50.00%	0.00	OK	
	LC28 at 50.00%	0.00	OK	
	LC29 at 50.00%	0.00	OK	
	LC3 at 50.00%	0.04	OK	
	LC30 at 50.00%	0.00	OK	
	LC31 at 50.00%	0.00	OK	
	LC32 at 50.00%	0.00	OK	
	LC4 at 50.00%	0.04	OK	
	LC5 at 50.00%	0.04	OK	
	LC6 at 50.00%	0.04	OK	
	LC7 at 50.00%	0.04	OK	
	LC8 at 50.00%	0.04	OK	
	LC9 at 50.00%	0.00	OK	Eq. Sec. D2
79	LC1 at 50.00%	0.16	OK	
	LC10 at 50.00%	0.04	OK	
	LC11 at 50.00%	0.03	OK	
	LC12 at 50.00%	0.04	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.01	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.01	OK	
	LC2 at 50.00%	**0.21**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.01	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.01	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.01	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.01	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.01	OK	
	LC3 at 50.00%	0.16	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.01	OK	
	LC32 at 50.00%	0.01	OK	
	LC4 at 50.00%	0.21	OK	
	LC5 at 50.00%	0.16	OK	
	LC6 at 50.00%	0.21	OK	
	LC7 at 50.00%	0.16	OK	
	LC8 at 50.00%	0.21	OK	
	LC9 at 50.00%	0.03	OK	
80	LC1 at 50.00%	**0.28**	**OK**	Eq. H1-1b
	LC10 at 50.00%	0.06	OK	
	LC11 at 50.00%	0.05	OK	
	LC12 at 50.00%	0.06	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	

	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	0.27	OK	
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.28	OK	
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	0.27	OK	
	LC5 at 50.00%	0.28	OK	
	LC6 at 50.00%	0.27	OK	
	LC7 at 50.00%	0.28	OK	
	LC8 at 50.00%	0.27	OK	
	LC9 at 50.00%	0.05	OK	
81	LC1 at 46.88%	0.43	OK	
	LC10 at 46.88%	0.08	OK	
	LC11 at 46.88%	0.07	OK	
	LC12 at 46.88%	0.08	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 46.88%	0.03	OK	
	LC18 at 46.88%	0.03	OK	
	LC19 at 46.88%	0.03	OK	
	LC2 at 46.88%	**0.44**	**OK**	Eq. H1-1b
	LC20 at 46.88%	0.03	OK	
	LC21 at 46.88%	0.03	OK	
	LC22 at 46.88%	0.03	OK	
	LC23 at 46.88%	0.03	OK	
	LC24 at 46.88%	0.03	OK	
	LC25 at 46.88%	0.03	OK	
	LC26 at 46.88%	0.03	OK	
	LC27 at 46.88%	0.03	OK	
	LC28 at 46.88%	0.03	OK	
	LC29 at 46.88%	0.03	OK	
	LC3 at 46.88%	0.43	OK	
	LC30 at 46.88%	0.03	OK	
	LC31 at 46.88%	0.03	OK	
	LC32 at 46.88%	0.03	OK	
	LC4 at 46.88%	0.44	OK	
	LC5 at 46.88%	0.43	OK	
	LC6 at 46.88%	0.44	OK	
	LC7 at 46.88%	0.43	OK	
	LC8 at 46.88%	0.44	OK	
	LC9 at 46.88%	0.07	OK	
82	LC1 at 50.00%	0.04	OK	
	LC10 at 50.00%	0.00	OK	
	LC11 at 50.00%	0.00	OK	
	LC12 at 50.00%	0.00	OK	
	LC13 at 50.00%	0.00	OK	

	LC14 at 50.00%	0.00	OK	
	LC15 at 50.00%	0.00	OK	
	LC16 at 50.00%	0.00	OK	
	LC17 at 50.00%	0.00	OK	
	LC18 at 50.00%	0.00	OK	
	LC19 at 50.00%	0.00	OK	
	LC2 at 50.00%	**0.04**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.00	OK	
	LC21 at 50.00%	0.00	OK	
	LC22 at 50.00%	0.00	OK	
	LC23 at 50.00%	0.00	OK	
	LC24 at 50.00%	0.00	OK	
	LC25 at 50.00%	0.00	OK	
	LC26 at 50.00%	0.00	OK	
	LC27 at 50.00%	0.00	OK	
	LC28 at 50.00%	0.00	OK	
	LC29 at 50.00%	0.00	OK	
	LC3 at 50.00%	0.04	OK	
	LC30 at 50.00%	0.00	OK	
	LC31 at 50.00%	0.00	OK	
	LC32 at 50.00%	0.00	OK	
	LC4 at 50.00%	0.04	OK	
	LC5 at 50.00%	0.04	OK	
	LC6 at 50.00%	0.04	OK	
	LC7 at 50.00%	0.04	OK	
	LC8 at 50.00%	0.04	OK	
	LC9 at 50.00%	0.00	OK	Eq. Sec. D2
83	LC1 at 50.00%	0.16	OK	
	LC10 at 50.00%	0.04	OK	
	LC11 at 50.00%	0.03	OK	
	LC12 at 50.00%	0.04	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.01	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.01	OK	
	LC2 at 50.00%	**0.21**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.01	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.01	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.01	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.01	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.01	OK	
	LC3 at 50.00%	0.16	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.01	OK	
	LC32 at 50.00%	0.01	OK	
	LC4 at 50.00%	0.21	OK	
	LC5 at 50.00%	0.16	OK	
	LC6 at 50.00%	0.21	OK	
	LC7 at 50.00%	0.16	OK	
	LC8 at 50.00%	0.21	OK	
	LC9 at 50.00%	0.03	OK	
84	LC1 at 50.00%	0.36	OK	
	LC10 at 50.00%	0.05	OK	
	LC11 at 50.00%	0.06	OK	

	LC12 at 50.00%	0.05	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 50.00%	0.03	OK	
	LC18 at 50.00%	0.02	OK	
	LC19 at 50.00%	0.03	OK	
	LC2 at 50.00%	0.25	OK	
	LC20 at 50.00%	0.02	OK	
	LC21 at 50.00%	0.03	OK	
	LC22 at 50.00%	0.02	OK	
	LC23 at 50.00%	0.03	OK	
	LC24 at 50.00%	0.02	OK	
	LC25 at 50.00%	0.03	OK	
	LC26 at 50.00%	0.02	OK	
	LC27 at 50.00%	0.03	OK	
	LC28 at 50.00%	0.02	OK	
	LC29 at 50.00%	0.03	OK	
	LC3 at 50.00%	**0.36**	**OK**	Eq. H1-1b
	LC30 at 50.00%	0.02	OK	
	LC31 at 50.00%	0.03	OK	
	LC32 at 50.00%	0.02	OK	
	LC4 at 50.00%	0.25	OK	
	LC5 at 50.00%	0.36	OK	
	LC6 at 50.00%	0.25	OK	
	LC7 at 50.00%	0.36	OK	
	LC8 at 50.00%	0.25	OK	
	LC9 at 50.00%	0.06	OK	
85	LC1 at 50.00%	**0.60**	**OK**	Eq. H1-1b
	LC10 at 46.88%	0.08	OK	
	LC11 at 46.88%	0.10	OK	
	LC12 at 46.88%	0.08	OK	
	LC13 at 46.88%	0.01	OK	
	LC14 at 46.88%	0.01	OK	
	LC15 at 46.88%	0.01	OK	
	LC16 at 46.88%	0.01	OK	
	LC17 at 46.88%	0.04	OK	
	LC18 at 46.88%	0.03	OK	
	LC19 at 46.88%	0.04	OK	
	LC2 at 46.88%	0.37	OK	
	LC20 at 46.88%	0.03	OK	
	LC21 at 46.88%	0.04	OK	
	LC22 at 46.88%	0.03	OK	
	LC23 at 46.88%	0.04	OK	
	LC24 at 46.88%	0.03	OK	
	LC25 at 46.88%	0.04	OK	
	LC26 at 46.88%	0.03	OK	
	LC27 at 46.88%	0.04	OK	
	LC28 at 46.88%	0.03	OK	
	LC29 at 46.88%	0.04	OK	
	LC3 at 50.00%	0.60	OK	
	LC30 at 46.88%	0.03	OK	
	LC31 at 46.88%	0.04	OK	
	LC32 at 46.88%	0.03	OK	
	LC4 at 46.88%	0.37	OK	
	LC5 at 50.00%	0.60	OK	
	LC6 at 46.88%	0.36	OK	
	LC7 at 50.00%	0.60	OK	
	LC8 at 46.88%	0.36	OK	
	LC9 at 46.88%	0.10	OK	
86	LC1 at 46.88%	0.06	OK	

	LC10 at 46.88%	0.01	OK	
	LC11 at 46.88%	0.01	OK	
	LC12 at 46.88%	0.01	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 46.88%	0.00	OK	
	LC18 at 46.88%	0.00	OK	
	LC19 at 46.88%	0.00	OK	
	LC2 at 46.88%	**0.06**	**OK**	Eq. H1-1b
	LC20 at 46.88%	0.00	OK	
	LC21 at 46.88%	0.00	OK	
	LC22 at 46.88%	0.00	OK	
	LC23 at 46.88%	0.00	OK	
	LC24 at 46.88%	0.00	OK	
	LC25 at 46.88%	0.00	OK	
	LC26 at 46.88%	0.00	OK	
	LC27 at 46.88%	0.00	OK	
	LC28 at 46.88%	0.00	OK	
	LC29 at 46.88%	0.00	OK	
	LC3 at 46.88%	0.06	OK	
	LC30 at 46.88%	0.00	OK	
	LC31 at 46.88%	0.00	OK	
	LC32 at 46.88%	0.00	OK	
	LC4 at 46.88%	0.06	OK	
	LC5 at 46.88%	0.06	OK	
	LC6 at 46.88%	0.06	OK	
	LC7 at 46.88%	0.06	OK	
	LC8 at 46.88%	0.06	OK	
	LC9 at 46.88%	0.01	OK	
87	LC1 at 50.00%	**0.23**	**OK**	Eq. H1-1b
	LC10 at 50.00%	0.03	OK	
	LC11 at 50.00%	0.04	OK	
	LC12 at 50.00%	0.03	OK	
	LC13 at 46.88%	0.00	OK	
	LC14 at 46.88%	0.00	OK	
	LC15 at 46.88%	0.00	OK	
	LC16 at 46.88%	0.00	OK	
	LC17 at 50.00%	0.02	OK	
	LC18 at 50.00%	0.01	OK	
	LC19 at 50.00%	0.02	OK	
	LC2 at 50.00%	0.14	OK	
	LC20 at 50.00%	0.01	OK	
	LC21 at 50.00%	0.02	OK	
	LC22 at 50.00%	0.01	OK	
	LC23 at 50.00%	0.02	OK	
	LC24 at 50.00%	0.01	OK	
	LC25 at 50.00%	0.02	OK	
	LC26 at 50.00%	0.01	OK	
	LC27 at 50.00%	0.02	OK	
	LC28 at 50.00%	0.01	OK	
	LC29 at 50.00%	0.02	OK	
	LC3 at 50.00%	0.23	OK	
	LC30 at 50.00%	0.01	OK	
	LC31 at 50.00%	0.02	OK	
	LC32 at 50.00%	0.01	OK	
	LC4 at 50.00%	0.14	OK	
	LC5 at 50.00%	0.23	OK	
	LC6 at 50.00%	0.14	OK	
	LC7 at 50.00%	0.23	OK	
	LC8 at 50.00%	0.14	OK	
	LC9 at 50.00%	0.04	OK	

PIPE 3x0.216	**13**	LC1 at 14.58%	0.16	OK	Eq. H1-1b
		LC10 at 0.00%	0.11	OK	
		LC11 at 0.00%	0.10	OK	
		LC12 at 0.00%	0.12	OK	
		LC13 at 0.00%	0.06	OK	
		LC14 at 0.00%	0.05	OK	
		LC15 at 100.00%	0.09	OK	
		LC16 at 0.00%	0.06	OK	
		LC17 at 0.00%	0.08	OK	
		LC18 at 0.00%	0.07	OK	
		LC19 at 0.00%	0.07	OK	
		LC2 at 100.00%	0.13	OK	
		LC20 at 0.00%	0.07	OK	
		LC21 at 0.00%	0.09	OK	
		LC22 at 0.00%	0.09	OK	
		LC23 at 0.00%	0.08	OK	
		LC24 at 0.00%	0.09	OK	
		LC25 at 100.00%	0.20	OK	
		LC26 at 100.00%	0.20	OK	
		LC27 at 100.00%	0.20	OK	
		LC28 at 100.00%	**0.20**	**OK**	Eq. H1-1b
		LC29 at 14.58%	0.08	OK	
		LC3 at 14.58%	0.13	OK	
		LC30 at 0.00%	0.08	OK	
		LC31 at 0.00%	0.08	OK	
		LC32 at 0.00%	0.08	OK	
		LC4 at 100.00%	0.14	OK	
		LC5 at 14.58%	0.15	OK	
		LC6 at 100.00%	0.12	OK	
		LC7 at 14.58%	0.13	OK	
		LC8 at 91.67%	0.13	OK	
		LC9 at 0.00%	0.12	OK	
	14	LC1 at 100.00%	0.08	OK	
		LC10 at 6.25%	0.09	OK	
		LC11 at 6.25%	0.10	OK	
		LC12 at 6.25%	0.11	OK	
		LC13 at 6.25%	0.05	OK	
		LC14 at 6.25%	0.04	OK	
		LC15 at 50.00%	0.20	OK	Eq. H1-1b
		LC16 at 95.83%	0.04	OK	
		LC17 at 6.25%	0.04	OK	
		LC18 at 4.17%	0.04	OK	
		LC19 at 6.25%	0.04	OK	
		LC2 at 4.17%	0.13	OK	
		LC20 at 6.25%	0.05	OK	
		LC21 at 93.75%	0.18	OK	
		LC22 at 93.75%	0.19	OK	Eq. H1-1b
		LC23 at 93.75%	0.18	OK	
		LC24 at 93.75%	0.18	OK	
		LC25 at 6.25%	0.23	OK	
		LC26 at 6.25%	0.23	OK	
		LC27 at 6.25%	0.23	OK	
		LC28 at 6.25%	**0.23**	**OK**	Eq. H1-1b
		LC29 at 6.25%	0.05	OK	
		LC3 at 6.25%	0.09	OK	
		LC30 at 6.25%	0.05	OK	
		LC31 at 6.25%	0.06	OK	
		LC32 at 6.25%	0.06	OK	
		LC4 at 4.17%	0.14	OK	
		LC5 at 100.00%	0.07	OK	
		LC6 at 4.17%	0.12	OK	
		LC7 at 6.25%	0.08	OK	

	LC8 at 0.00%	0.12	OK	
	LC9 at 6.25%	0.09	OK	
15	LC1 at 85.42%	**0.16**	**OK**	Eq. H1-1b
	LC10 at 100.00%	0.13	OK	
	LC11 at 100.00%	0.12	OK	
	LC12 at 100.00%	0.13	OK	
	LC13 at 100.00%	0.07	OK	
	LC14 at 100.00%	0.05	OK	
	LC15 at 100.00%	0.09	OK	
	LC16 at 100.00%	0.08	OK	
	LC17 at 100.00%	0.09	OK	
	LC18 at 100.00%	0.09	OK	
	LC19 at 100.00%	0.08	OK	
	LC2 at 8.33%	0.13	OK	
	LC20 at 100.00%	0.09	OK	
	LC21 at 0.00%	0.15	OK	
	LC22 at 0.00%	0.15	OK	Eq. H1-1b
	LC23 at 0.00%	0.15	OK	
	LC24 at 0.00%	0.15	OK	
	LC25 at 100.00%	0.10	OK	
	LC26 at 100.00%	0.10	OK	
	LC27 at 100.00%	0.09	OK	
	LC28 at 100.00%	0.09	OK	
	LC29 at 100.00%	0.08	OK	
	LC3 at 85.42%	0.13	OK	
	LC30 at 100.00%	0.08	OK	
	LC31 at 100.00%	0.08	OK	
	LC32 at 100.00%	0.08	OK	
	LC4 at 8.33%	0.14	OK	Eq. H1-1b
	LC5 at 85.42%	0.15	OK	
	LC6 at 8.33%	0.12	OK	
	LC7 at 85.42%	0.12	OK	
	LC8 at 8.33%	0.14	OK	
	LC9 at 100.00%	0.14	OK	
16	LC1 at 0.00%	0.09	OK	Eq. H1-1b
	LC10 at 100.00%	0.13	OK	
	LC11 at 100.00%	0.12	OK	
	LC12 at 100.00%	0.10	OK	
	LC13 at 100.00%	0.06	OK	
	LC14 at 100.00%	0.05	OK	
	LC15 at 100.00%	0.08	OK	
	LC16 at 100.00%	0.07	OK	
	LC17 at 100.00%	0.10	OK	
	LC18 at 100.00%	0.11	OK	
	LC19 at 100.00%	0.10	OK	
	LC2 at 85.42%	**0.17**	**OK**	Eq. H1-1b
	LC20 at 100.00%	0.10	OK	
	LC21 at 100.00%	0.09	OK	
	LC22 at 100.00%	0.10	OK	
	LC23 at 100.00%	0.09	OK	
	LC24 at 100.00%	0.09	OK	
	LC25 at 100.00%	0.08	OK	
	LC26 at 100.00%	0.09	OK	
	LC27 at 100.00%	0.08	OK	
	LC28 at 100.00%	0.08	OK	
	LC29 at 100.00%	0.07	OK	
	LC3 at 0.00%	0.07	OK	
	LC30 at 100.00%	0.08	OK	
	LC31 at 100.00%	0.07	OK	
	LC32 at 100.00%	0.07	OK	
	LC4 at 85.42%	0.14	OK	
	LC5 at 0.00%	0.08	OK	

	LC6 at 85.42%	0.16	OK	
	LC7 at 0.00%	0.07	OK	
	LC8 at 85.42%	0.15	OK	
	LC9 at 100.00%	0.12	OK	
18	LC1 at 93.75%	**0.11**	**OK**	Eq. H1-1b
	LC10 at 93.75%	0.08	OK	
	LC11 at 93.75%	0.08	OK	
	LC12 at 93.75%	0.09	OK	
	LC13 at 93.75%	0.04	OK	
	LC14 at 93.75%	0.03	OK	
	LC15 at 0.00%	0.02	OK	
	LC16 at 93.75%	0.04	OK	
	LC17 at 100.00%	0.04	OK	
	LC18 at 100.00%	0.04	OK	
	LC19 at 100.00%	0.04	OK	
	LC2 at 0.00%	0.09	OK	
	LC20 at 100.00%	0.04	OK	
	LC21 at 100.00%	0.04	OK	
	LC22 at 100.00%	0.04	OK	
	LC23 at 100.00%	0.04	OK	
	LC24 at 100.00%	0.04	OK	
	LC25 at 95.83%	0.02	OK	
	LC26 at 0.00%	0.02	OK	
	LC27 at 0.00%	0.02	OK	
	LC28 at 95.83%	0.02	OK	
	LC29 at 93.75%	0.04	OK	
	LC3 at 0.00%	0.09	OK	Eq. H1-1b
	LC30 at 93.75%	0.04	OK	
	LC31 at 93.75%	0.03	OK	
	LC32 at 93.75%	0.04	OK	
	LC4 at 93.75%	0.10	OK	
	LC5 at 93.75%	0.10	OK	
	LC6 at 0.00%	0.08	OK	
	LC7 at 0.00%	0.09	OK	
	LC8 at 93.75%	0.09	OK	
	LC9 at 93.75%	0.09	OK	
20	LC1 at 91.67%	0.12	OK	Eq. H1-1b
	LC10 at 0.00%	0.12	OK	
	LC11 at 0.00%	0.13	OK	
	LC12 at 0.00%	0.11	OK	
	LC13 at 0.00%	0.06	OK	
	LC14 at 0.00%	0.05	OK	
	LC15 at 0.00%	0.06	OK	
	LC16 at 0.00%	0.07	OK	
	LC17 at 0.00%	0.06	OK	
	LC18 at 0.00%	0.06	OK	
	LC19 at 0.00%	0.07	OK	
	LC2 at 89.58%	**0.14**	**OK**	Eq. H1-1b
	LC20 at 0.00%	0.06	OK	
	LC21 at 0.00%	0.05	OK	
	LC22 at 0.00%	0.06	OK	
	LC23 at 0.00%	0.06	OK	
	LC24 at 0.00%	0.05	OK	
	LC25 at 0.00%	0.05	OK	
	LC26 at 0.00%	0.06	OK	
	LC27 at 0.00%	0.06	OK	
	LC28 at 0.00%	0.05	OK	
	LC29 at 0.00%	0.06	OK	
	LC3 at 0.00%	0.13	OK	Eq. H1-1b
	LC30 at 0.00%	0.07	OK	
	LC31 at 0.00%	0.07	OK	
	LC32 at 0.00%	0.06	OK	

	LC4 at 89.58%	0.08	OK	
	LC5 at 91.67%	0.11	OK	
	LC6 at 89.58%	0.13	OK	
	LC7 at 0.00%	0.12	OK	
	LC8 at 89.58%	0.07	OK	
	LC9 at 0.00%	0.11	OK	
22	LC1 at 0.00%	0.12	OK	
	LC10 at 0.00%	0.10	OK	
	LC11 at 0.00%	0.12	OK	
	LC12 at 0.00%	0.11	OK	
	LC13 at 0.00%	0.06	OK	
	LC14 at 0.00%	0.04	OK	
	LC15 at 0.00%	0.05	OK	
	LC16 at 0.00%	0.06	OK	
	LC17 at 0.00%	0.05	OK	
	LC18 at 0.00%	0.06	OK	
	LC19 at 0.00%	0.06	OK	
	LC2 at 89.58%	0.10	OK	
	LC20 at 0.00%	0.06	OK	
	LC21 at 100.00%	0.05	OK	
	LC22 at 100.00%	0.06	OK	
	LC23 at 100.00%	0.06	OK	
	LC24 at 100.00%	0.06	OK	
	LC25 at 0.00%	0.05	OK	
	LC26 at 0.00%	0.05	OK	
	LC27 at 0.00%	0.05	OK	
	LC28 at 0.00%	0.05	OK	
	LC29 at 0.00%	0.05	OK	
	LC3 at 0.00%	**0.14**	**OK**	Eq. H1-1b
	LC30 at 0.00%	0.05	OK	
	LC31 at 0.00%	0.06	OK	
	LC32 at 0.00%	0.06	OK	
	LC4 at 0.00%	0.11	OK	
	LC5 at 0.00%	0.11	OK	
	LC6 at 89.58%	0.10	OK	
	LC7 at 0.00%	0.13	OK	
	LC8 at 12.50%	0.10	OK	
	LC9 at 0.00%	0.10	OK	
23	LC1 at 0.00%	0.10	OK	Eq. H1-1b
	LC10 at 6.25%	0.08	OK	
	LC11 at 6.25%	0.08	OK	Eq. H1-1b
	LC12 at 100.00%	0.08	OK	
	LC13 at 6.25%	0.04	OK	
	LC14 at 6.25%	0.03	OK	
	LC15 at 100.00%	0.07	OK	
	LC16 at 100.00%	0.07	OK	
	LC17 at 6.25%	0.06	OK	
	LC18 at 6.25%	0.06	OK	
	LC19 at 6.25%	0.06	OK	
	LC2 at 6.25%	0.08	OK	
	LC20 at 6.25%	0.05	OK	
	LC21 at 100.00%	0.07	OK	
	LC22 at 100.00%	0.07	OK	
	LC23 at 100.00%	0.07	OK	
	LC24 at 100.00%	0.07	OK	
	LC25 at 100.00%	0.10	OK	
	LC26 at 100.00%	0.10	OK	
	LC27 at 100.00%	**0.10**	**OK**	Eq. H1-1b
	LC28 at 100.00%	0.10	OK	
	LC29 at 100.00%	0.09	OK	
	LC3 at 0.00%	0.09	OK	
	LC30 at 100.00%	0.10	OK	

		LC31 at 100.00%	0.10	OK	
		LC32 at 100.00%	0.09	OK	
		LC4 at 100.00%	0.07	OK	
		LC5 at 0.00%	0.09	OK	
		LC6 at 6.25%	0.07	OK	
		LC7 at 0.00%	0.08	OK	
		LC8 at 100.00%	0.06	OK	
		LC9 at 6.25%	0.07	OK	
	24	LC1 at 100.00%	0.05	OK	
		LC10 at 100.00%	0.11	OK	
		LC11 at 100.00%	0.12	OK	
		LC12 at 100.00%	0.13	OK	
		LC13 at 100.00%	0.07	OK	
		LC14 at 100.00%	0.05	OK	
		LC15 at 8.33%	0.09	OK	
		LC16 at 10.42%	0.09	OK	
		LC17 at 100.00%	0.08	OK	
		LC18 at 100.00%	0.07	OK	
		LC19 at 100.00%	0.08	OK	
		LC2 at 85.42%	0.14	OK	
		LC20 at 100.00%	0.08	OK	
		LC21 at 8.33%	0.09	OK	
		LC22 at 8.33%	0.09	OK	
		LC23 at 8.33%	0.09	OK	
		LC24 at 100.00%	0.09	OK	
		LC25 at 8.33%	0.12	OK	
		LC26 at 8.33%	0.12	OK	
		LC27 at 8.33%	0.12	OK	Eq. H1-1b
		LC28 at 8.33%	0.12	OK	
		LC29 at 10.42%	0.11	OK	
		LC3 at 8.33%	0.09	OK	
		LC30 at 8.33%	0.11	OK	
		LC31 at 8.33%	0.11	OK	
		LC32 at 10.42%	0.12	OK	Eq. H1-1b
		LC4 at 85.42%	**0.16**	**OK**	Eq. H1-1b
		LC5 at 8.33%	0.04	OK	
		LC6 at 85.42%	0.14	OK	
		LC7 at 8.33%	0.08	OK	
		LC8 at 85.42%	0.15	OK	
		LC9 at 100.00%	0.12	OK	
PL 6x5/8	**26**	LC1 at 50.00%	0.36	OK	Eq. H1-1b
		LC10 at 50.00%	0.19	OK	Eq. H3-1
		LC11 at 50.00%	0.19	OK	
		LC12 at 50.00%	0.21	OK	
		LC13 at 50.00%	0.10	OK	
		LC14 at 50.00%	0.07	OK	
		LC15 at 50.00%	0.12	OK	
		LC16 at 0.00%	0.17	OK	
		LC17 at 50.00%	0.13	OK	
		LC18 at 50.00%	0.11	OK	
		LC19 at 50.00%	0.10	OK	
		LC2 at 0.00%	0.26	OK	
		LC20 at 50.00%	0.13	OK	
		LC21 at 50.00%	0.14	OK	
		LC22 at 50.00%	0.12	OK	
		LC23 at 50.00%	0.11	OK	
		LC24 at 50.00%	0.14	OK	
		LC25 at 50.00%	0.16	OK	
		LC26 at 50.00%	0.16	OK	
		LC27 at 50.00%	0.16	OK	
		LC28 at 50.00%	0.16	OK	
		LC29 at 0.00%	0.19	OK	

	LC3 at 100.00%	0.25	OK	
	LC30 at 0.00%	0.19	OK	Eq. H3-1
	LC31 at 0.00%	0.19	OK	
	LC32 at 0.00%	0.19	OK	
	LC4 at 0.00%	**0.36**	**OK**	Eq. H1-1b
	LC5 at 100.00%	0.34	OK	
	LC6 at 0.00%	0.27	OK	
	LC7 at 100.00%	0.26	OK	
	LC8 at 0.00%	0.34	OK	
	LC9 at 50.00%	0.21	OK	
27	LC1 at 0.00%	0.35	OK	Eq. H1-1b
	LC10 at 50.00%	0.23	OK	
	LC11 at 0.00%	0.19	OK	
	LC12 at 0.00%	0.19	OK	Eq. H3-1
	LC13 at 0.00%	0.10	OK	
	LC14 at 0.00%	0.08	OK	
	LC15 at 0.00%	0.13	OK	
	LC16 at 50.00%	0.11	OK	
	LC17 at 50.00%	0.19	OK	
	LC18 at 50.00%	0.19	OK	
	LC19 at 50.00%	0.19	OK	
	LC2 at 50.00%	**0.42**	**OK**	Eq. H1-1b
	LC20 at 50.00%	0.19	OK	Eq. H3-1
	LC21 at 0.00%	0.16	OK	
	LC22 at 0.00%	0.16	OK	
	LC23 at 0.00%	0.16	OK	
	LC24 at 0.00%	0.16	OK	
	LC25 at 46.88%	0.13	OK	
	LC26 at 50.00%	0.14	OK	
	LC27 at 50.00%	0.12	OK	
	LC28 at 0.00%	0.12	OK	
	LC29 at 50.00%	0.12	OK	
	LC3 at 0.00%	0.24	OK	
	LC30 at 50.00%	0.13	OK	
	LC31 at 50.00%	0.11	OK	
	LC32 at 50.00%	0.10	OK	
	LC4 at 50.00%	0.31	OK	
	LC5 at 0.00%	0.33	OK	
	LC6 at 50.00%	0.40	OK	
	LC7 at 0.00%	0.25	OK	
	LC8 at 50.00%	0.32	OK	
	LC9 at 0.00%	0.19	OK	
28	LC1 at 50.00%	0.26	OK	
	LC10 at 50.00%	0.18	OK	
	LC11 at 50.00%	0.20	OK	
	LC12 at 0.00%	0.18	OK	
	LC13 at 0.00%	0.09	OK	
	LC14 at 0.00%	0.07	OK	
	LC15 at 50.00%	0.09	OK	
	LC16 at 50.00%	0.10	OK	
	LC17 at 0.00%	0.09	OK	
	LC18 at 50.00%	0.10	OK	
	LC19 at 50.00%	0.11	OK	
	LC2 at 100.00%	0.23	OK	
	LC20 at 46.88%	0.10	OK	
	LC21 at 0.00%	0.09	OK	
	LC22 at 50.00%	0.10	OK	
	LC23 at 50.00%	0.11	OK	
	LC24 at 46.88%	0.10	OK	
	LC25 at 50.00%	0.09	OK	
	LC26 at 50.00%	0.10	OK	
	LC27 at 50.00%	0.11	OK	

		LC28 at 46.88%	0.09	OK	
		LC29 at 50.00%	0.09	OK	
		LC3 at 50.00%	**0.37**	**OK**	Eq. H1-1b
		LC30 at 50.00%	0.11	OK	
		LC31 at 50.00%	0.11	OK	
		LC32 at 46.88%	0.10	OK	
		LC4 at 0.00%	0.23	OK	
		LC5 at 50.00%	0.26	OK	
		LC6 at 100.00%	0.21	OK	
		LC7 at 50.00%	0.35	OK	
		LC8 at 0.00%	0.21	OK	
		LC9 at 0.00%	0.18	OK	Eq. H3-1
T2L 2X2X1_4	**88**	LC1 at 100.00%	0.18	OK	
		LC10 at 0.00%	0.32	OK	
		LC11 at 0.00%	0.33	OK	
		LC12 at 0.00%	**0.34**	**OK**	Eq. H2-1
		LC13 at 0.00%	0.18	OK	
		LC14 at 0.00%	0.14	OK	
		LC15 at 0.00%	0.20	OK	
		LC16 at 0.00%	0.18	OK	
		LC17 at 0.00%	0.20	OK	
		LC18 at 0.00%	0.20	OK	
		LC19 at 0.00%	0.21	OK	
		LC2 at 100.00%	0.27	OK	
		LC20 at 0.00%	0.21	OK	
		LC21 at 0.00%	0.21	OK	
		LC22 at 0.00%	0.21	OK	
		LC23 at 0.00%	0.21	OK	
		LC24 at 0.00%	0.21	OK	
		LC25 at 0.00%	0.19	OK	
		LC26 at 0.00%	0.19	OK	
		LC27 at 0.00%	0.19	OK	
		LC28 at 0.00%	0.19	OK	
		LC29 at 0.00%	0.18	OK	
		LC3 at 0.00%	0.20	OK	
		LC30 at 0.00%	0.18	OK	
		LC31 at 0.00%	0.18	OK	
		LC32 at 0.00%	0.18	OK	
		LC4 at 100.00%	0.28	OK	Eq. H2-1
		LC5 at 100.00%	0.15	OK	
		LC6 at 100.00%	0.24	OK	
		LC7 at 0.00%	0.16	OK	
		LC8 at 100.00%	0.25	OK	
		LC9 at 0.00%	0.33	OK	
	89	LC1 at 100.00%	0.28	OK	
		LC10 at 100.00%	0.36	OK	
		LC11 at 100.00%	0.35	OK	
		LC12 at 100.00%	0.36	OK	
		LC13 at 100.00%	0.20	OK	
		LC14 at 100.00%	0.15	OK	
		LC15 at 100.00%	0.23	OK	
		LC16 at 100.00%	0.40	OK	
		LC17 at 100.00%	0.20	OK	
		LC18 at 100.00%	0.20	OK	
		LC19 at 100.00%	0.19	OK	
		LC2 at 100.00%	0.21	OK	
		LC20 at 100.00%	0.20	OK	
		LC21 at 100.00%	0.23	OK	
		LC22 at 100.00%	0.22	OK	
		LC23 at 100.00%	0.22	OK	
		LC24 at 100.00%	0.22	OK	
		LC25 at 100.00%	0.30	OK	

		LC26 at 100.00%	0.29	OK	
		LC27 at 100.00%	0.29	OK	
		LC28 at 100.00%	0.29	OK	
		LC29 at 100.00%	**0.45**	**OK**	Eq. H2-1
		LC3 at 0.00%	0.25	OK	
		LC30 at 100.00%	0.44	OK	
		LC31 at 100.00%	0.44	OK	
		LC32 at 100.00%	0.44	OK	
		LC4 at 100.00%	0.18	OK	
		LC5 at 100.00%	0.23	OK	
		LC6 at 100.00%	0.16	OK	
		LC7 at 0.00%	0.21	OK	
		LC8 at 100.00%	0.14	OK	
		LC9 at 100.00%	0.37	OK	
	90	LC1 at 100.00%	0.23	OK	
		LC10 at 100.00%	0.34	OK	
		LC11 at 100.00%	0.34	OK	
		LC12 at 100.00%	0.33	OK	
		LC13 at 100.00%	0.18	OK	
		LC14 at 100.00%	0.14	OK	
		LC15 at 100.00%	0.20	OK	
		LC16 at 100.00%	0.18	OK	
		LC17 at 100.00%	0.41	OK	
		LC18 at 100.00%	0.41	OK	
		LC19 at 100.00%	0.41	OK	
		LC2 at 100.00%	0.24	OK	
		LC20 at 100.00%	**0.41**	**OK**	Eq. H2-1
		LC21 at 100.00%	0.26	OK	
		LC22 at 100.00%	0.26	OK	
		LC23 at 100.00%	0.26	OK	
		LC24 at 100.00%	0.27	OK	
		LC25 at 100.00%	0.19	OK	
		LC26 at 100.00%	0.19	OK	
		LC27 at 100.00%	0.19	OK	
		LC28 at 100.00%	0.20	OK	
		LC29 at 100.00%	0.17	OK	
		LC3 at 100.00%	0.24	OK	
		LC30 at 100.00%	0.17	OK	
		LC31 at 100.00%	0.17	OK	
		LC32 at 100.00%	0.17	OK	
		LC4 at 100.00%	0.22	OK	
		LC5 at 100.00%	0.19	OK	
		LC6 at 100.00%	0.19	OK	
		LC7 at 0.00%	0.20	OK	
		LC8 at 100.00%	0.18	OK	
		LC9 at 100.00%	0.33	OK	
T2LU 1-1/2x2-1/2x1/4	**29**	LC1 at 0.00%	0.28	OK	
		LC10 at 0.00%	0.28	OK	
		LC11 at 0.00%	0.31	OK	
		LC12 at 0.00%	**0.32**	**OK**	Eq. H2-1
		LC13 at 0.00%	0.17	OK	
		LC14 at 0.00%	0.13	OK	
		LC15 at 0.00%	0.12	OK	
		LC16 at 0.00%	0.15	OK	
		LC17 at 0.00%	0.14	OK	
		LC18 at 0.00%	0.14	OK	
		LC19 at 0.00%	0.15	OK	
		LC2 at 0.00%	0.30	OK	
		LC20 at 0.00%	0.15	OK	
		LC21 at 0.00%	0.11	OK	
		LC22 at 0.00%	0.11	OK	
		LC23 at 0.00%	0.12	OK	

	LC24 at 0.00%	0.12	OK	
	LC25 at 0.00%	0.11	OK	
	LC26 at 0.00%	0.10	OK	
	LC27 at 0.00%	0.11	OK	
	LC28 at 0.00%	0.12	OK	
	LC29 at 0.00%	0.13	OK	
	LC3 at 0.00%	0.25	OK	
	LC30 at 0.00%	0.13	OK	
	LC31 at 0.00%	0.14	OK	
	LC32 at 0.00%	0.14	OK	
	LC4 at 0.00%	0.31	OK	
	LC5 at 0.00%	0.24	OK	
	LC6 at 0.00%	0.26	OK	
	LC7 at 0.00%	0.21	OK	
	LC8 at 0.00%	0.27	OK	
	LC9 at 0.00%	0.29	OK	
36	LC1 at 0.00%	0.37	OK	
	LC10 at 0.00%	0.34	OK	
	LC11 at 0.00%	0.34	OK	
	LC12 at 0.00%	0.33	OK	
	LC13 at 0.00%	0.18	OK	
	LC14 at 0.00%	0.14	OK	
	LC15 at 0.00%	0.31	OK	
	LC16 at 0.00%	0.22	OK	
	LC17 at 0.00%	0.22	OK	
	LC18 at 0.00%	0.21	OK	
	LC19 at 0.00%	0.21	OK	
	LC2 at 0.00%	0.25	OK	
	LC20 at 0.00%	0.21	OK	
	LC21 at 0.00%	0.31	OK	
	LC22 at 0.00%	0.30	OK	
	LC23 at 0.00%	0.31	OK	
	LC24 at 0.00%	0.30	OK	
	LC25 at 0.00%	0.37	OK	
	LC26 at 0.00%	0.38	OK	
	LC27 at 0.00%	0.39	OK	
	LC28 at 0.00%	0.38	OK	
	LC29 at 0.00%	0.26	OK	
	LC3 at 0.00%	**0.41**	**OK**	Eq. H2-1
	LC30 at 0.00%	0.26	OK	
	LC31 at 0.00%	0.27	OK	
	LC32 at 0.00%	0.26	OK	
	LC4 at 0.00%	0.23	OK	
	LC5 at 0.00%	0.33	OK	
	LC6 at 0.00%	0.20	OK	
	LC7 at 0.00%	0.37	OK	
	LC8 at 0.00%	0.19	OK	
	LC9 at 0.00%	0.36	OK	
55	LC1 at 0.00%	0.28	OK	
	LC10 at 0.00%	0.37	OK	
	LC11 at 0.00%	0.35	OK	
	LC12 at 0.00%	0.34	OK	
	LC13 at 0.00%	0.19	OK	
	LC14 at 0.00%	0.14	OK	
	LC15 at 0.00%	0.25	OK	
	LC16 at 0.00%	0.20	OK	
	LC17 at 0.00%	0.25	OK	
	LC18 at 0.00%	0.26	OK	
	LC19 at 0.00%	0.25	OK	
	LC2 at 0.00%	0.37	OK	
	LC20 at 0.00%	0.24	OK	
	LC21 at 0.00%	0.28	OK	

	LC22 at 0.00%	0.29	OK	
	LC23 at 0.00%	0.28	OK	
	LC24 at 0.00%	0.27	OK	
	LC25 at 0.00%	0.25	OK	
	LC26 at 0.00%	0.26	OK	
	LC27 at 0.00%	0.26	OK	
	LC28 at 0.00%	0.25	OK	
	LC29 at 0.00%	0.21	OK	
	LC3 at 0.00%	0.29	OK	
	LC30 at 0.00%	0.22	OK	
	LC31 at 0.00%	0.21	OK	
	LC32 at 0.00%	0.20	OK	
	LC4 at 0.00%	**0.44**	**OK**	Eq. H2-1
	LC5 at 0.00%	0.24	OK	
	LC6 at 0.00%	0.33	OK	
	LC7 at 0.00%	0.24	OK	
	LC8 at 0.00%	0.40	OK	
	LC9 at 0.00%	0.34	OK	
56	LC1 at 0.00%	0.33	OK	
	LC10 at 0.00%	0.34	OK	
	LC11 at 0.00%	0.34	OK	
	LC12 at 0.00%	0.36	OK	
	LC13 at 0.00%	0.19	OK	
	LC14 at 0.00%	0.14	OK	
	LC15 at 0.00%	0.31	OK	
	LC16 at 0.00%	0.20	OK	
	LC17 at 0.00%	0.26	OK	
	LC18 at 0.00%	0.26	OK	
	LC19 at 0.00%	0.26	OK	
	LC2 at 0.00%	0.28	OK	
	LC20 at 0.00%	0.26	OK	
	LC21 at 0.00%	0.37	OK	
	LC22 at 0.00%	0.38	OK	
	LC23 at 0.00%	**0.38**	**OK**	Eq. H2-1
	LC24 at 0.00%	0.37	OK	
	LC25 at 0.00%	0.31	OK	
	LC26 at 0.00%	0.30	OK	
	LC27 at 0.00%	0.31	OK	
	LC28 at 0.00%	0.31	OK	
	LC29 at 0.00%	0.22	OK	
	LC3 at 0.00%	0.36	OK	
	LC30 at 0.00%	0.22	OK	
	LC31 at 0.00%	0.21	OK	
	LC32 at 0.00%	0.22	OK	
	LC4 at 0.00%	0.30	OK	
	LC5 at 0.00%	0.29	OK	
	LC6 at 0.00%	0.24	OK	
	LC7 at 0.00%	0.32	OK	
	LC8 at 0.00%	0.25	OK	
	LC9 at 0.00%	0.36	OK	
58	LC1 at 0.00%	0.21	OK	
	LC10 at 0.00%	**0.31**	**OK**	Eq. H2-1
	LC11 at 0.00%	0.30	OK	
	LC12 at 0.00%	0.28	OK	
	LC13 at 0.00%	0.17	OK	
	LC14 at 0.00%	0.13	OK	
	LC15 at 0.00%	0.13	OK	
	LC16 at 0.00%	0.16	OK	
	LC17 at 0.00%	0.14	OK	
	LC18 at 0.00%	0.14	OK	
	LC19 at 0.00%	0.14	OK	
	LC2 at 0.00%	0.29	OK	

	LC20 at 0.00%	0.13	OK	
	LC21 at 0.00%	0.11	OK	
	LC22 at 0.00%	0.12	OK	
	LC23 at 0.00%	0.11	OK	
	LC24 at 0.00%	0.11	OK	
	LC25 at 0.00%	0.12	OK	
	LC26 at 0.00%	0.12	OK	
	LC27 at 0.00%	0.12	OK	
	LC28 at 0.00%	0.11	OK	
	LC29 at 0.00%	0.15	OK	
	LC3 at 0.00%	0.19	OK	
	LC30 at 0.00%	0.15	OK	
	LC31 at 0.00%	0.15	OK	
	LC32 at 0.00%	0.14	OK	
	LC4 at 0.00%	0.28	OK	
	LC5 at 0.00%	0.18	OK	
	LC6 at 0.00%	0.25	OK	
	LC7 at 0.00%	0.15	OK	
	LC8 at 0.00%	0.24	OK	
	LC9 at 0.00%	0.30	OK	
59	LC1 at 0.00%	0.27	OK	
	LC10 at 0.00%	0.31	OK	
	LC11 at 0.00%	0.33	OK	
	LC12 at 0.00%	0.33	OK	
	LC13 at 0.00%	0.18	OK	
	LC14 at 0.00%	0.13	OK	
	LC15 at 0.00%	0.24	OK	
	LC16 at 0.00%	0.22	OK	
	LC17 at 0.00%	0.19	OK	
	LC18 at 0.00%	0.20	OK	
	LC19 at 0.00%	0.20	OK	
	LC2 at 0.00%	**0.35**	**OK**	Eq. H2-1
	LC20 at 0.00%	0.20	OK	
	LC21 at 0.00%	0.24	OK	
	LC22 at 0.00%	0.24	OK	
	LC23 at 0.00%	0.25	OK	
	LC24 at 0.00%	0.25	OK	
	LC25 at 0.00%	0.26	OK	
	LC26 at 0.00%	0.27	OK	
	LC27 at 0.00%	0.28	OK	
	LC28 at 0.00%	0.27	OK	
	LC29 at 0.00%	0.23	OK	
	LC3 at 0.00%	0.29	OK	
	LC30 at 0.00%	0.24	OK	
	LC31 at 0.00%	0.25	OK	
	LC32 at 0.00%	0.24	OK	
	LC4 at 0.00%	0.29	OK	
	LC5 at 0.00%	0.24	OK	
	LC6 at 0.00%	0.32	OK	
	LC7 at 0.00%	0.25	OK	
	LC8 at 0.00%	0.24	OK	
	LC9 at 0.00%	0.30	OK	

Bentley

Current Date: 7/9/2018 11:27 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2155\CT2155 (MOD).etz\

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
3	0.00	0.00	-0.625	0
4	0.625	0.00	0.00	0
5	-0.625	0.00	0.00	0
13	7.422	0.00	3.6053	0
14	0.5887	0.00	-8.2303	0
15	0.00	0.00	-8.2303	0
21	0.00	-0.25	-0.625	0
22	0.00	0.00	-2.9166	0
23	0.00	-0.25	-4.3333	0
33	5.1304	0.00	-0.364	0
39	-0.5887	0.00	-8.2303	0
40	-2.8804	0.00	-4.261	0
41	-5.1304	0.00	-0.3639	0
42	-7.422	0.00	3.6053	0
43	-6.8333	0.00	4.625	0
44	-2.25	0.00	4.625	0
45	2.25	0.00	4.625	0
46	6.8333	0.00	4.625	0
50	0.00	0.00	-3.0937	0
51	-2.6658	0.00	-4.6328	0
64	-2.6792	0.00	4.625	0

65	-7.1277	0.00	4.1152	0
66	-0.5413	-0.25	0.3125	0
67	-2.5258	0.00	1.4583	0
68	-3.7527	-0.25	2.1666	0
75	-2.6792	0.00	1.5468	0
76	-5.345	0.00	0.0078	0
90	2.5258	0.00	1.4583	0
91	3.7527	-0.25	2.1666	0
98	2.6792	0.00	1.5468	0
99	5.345	0.00	0.0078	0
100	7.1277	0.00	4.1152	0
101	2.6792	0.00	4.625	0
102	0.5413	-0.25	0.3125	0
105	2.6658	0.00	-4.6328	0
138	5.1789	4.00	-0.6798	0
139	3.1782	3.00	-4.1452	0
140	1.0949	3.00	-7.7535	0
141	-1.0949	3.00	-7.7535	0
142	-3.1782	4.00	-4.1452	0
143	-5.1789	3.00	-0.6798	0
144	-7.2622	3.00	2.9285	0
145	-6.1673	3.00	4.825	0
146	-2.0007	4.00	4.825	0
147	2.0007	3.00	4.825	0
148	6.1673	3.00	4.825	0
149	7.2622	3.00	2.9285	0
150	5.1789	-4.00	-0.6798	0
151	3.1782	-3.00	-4.1452	0
152	1.0949	-3.00	-7.7535	0
153	-1.0949	-3.00	-7.7535	0
154	-3.1782	-4.00	-4.1452	0
155	-5.1789	-3.00	-0.6798	0
156	-7.2622	-3.00	2.9285	0
157	-6.1673	-3.00	4.825	0
158	-2.0007	-4.00	4.825	0
159	2.0007	-3.00	4.825	0
160	6.1673	-3.00	4.825	0
161	7.2622	-3.00	2.9285	0
162	-5.2868	0.00	3.0524	0
163	5.2868	0.00	3.0524	0
164	0.00	0.00	-6.1047	0
165	0.00	-2.75	-0.625	0
166	-0.5413	-2.75	0.3125	0
167	0.5413	-2.75	0.3125	0
34	2.8804	0.00	-4.2611	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
21	1	1	1	1	1	1
66	1	1	1	1	1	1
102	1	1	1	1	1	1
165	1	1	1	1	1	1
166	1	1	1	1	1	1
167	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
8	21	23		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
9	22	15		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
13	43	44		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
14	44	45		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
15	45	46		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
16	33	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
18	34	33		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
20	14	34		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
22	39	40		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
23	40	41		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
24	41	42		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
26	42	43		PL 6x5/8	A36	0.00	0.00	0.00
27	46	13		PL 6x5/8	A36	0.00	0.00	0.00
28	39	14		PL 6x5/8	A36	0.00	0.00	0.00
29	50	51		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
36	75	64		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
37	66	68		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
38	67	65		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
50	102	91		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
51	90	100		HSS_SQR 3X3X1_4	A36	0.00	0.00	0.00
55	98	99		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
56	98	101		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
58	50	105		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
59	75	76		T2LU 1-1/2x2-1/2x1/4	A36	0.00	0.00	0.00
76	138	150		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
77	149	161		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	139	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	140	152		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	141	153		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	142	154		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
82	143	155		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
83	144	156		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
84	145	157		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
85	146	158		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
86	147	159		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	148	160		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	164	165		T2L 2X2X1_4	A36	0.00	0.00	0.00
89	166	162		T2L 2X2X1_4	A36	0.00	0.00	0.00
90	167	163		T2L 2X2X1_4	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
29	270.00	0	0.00	0.00	0.00
36	270.00	0	0.00	0.00	0.00
55	270.00	0	0.00	0.00	0.00
56	90.00	0	0.00	0.00	0.00
58	90.00	0	0.00	0.00	0.00
59	90.00	0	0.00	0.00	0.00

CANTERBURY RD

Location	CANTERBURY RD	**Mblu**	35/4 / 37/ /
Acct#	010997	**Owner**	CANTERBURY SCHOOL INC
Assessment	$9,900,940	**Appraisal**	$14,144,200
PID	6769	**Building Count**	4

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$12,174,300	$1,969,900	$14,144,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$8,522,010	$1,378,930	$9,900,940

Owner of Record

Owner	CANTERBURY SCHOOL INC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	101 ASPETUCK AVE NEW MILFORD, CT 06776	**Book & Page**	/
		Sale Date	

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
CANTERBURY SCHOOL INC	$0		/	

Building Information

Building 1 : Section 1

Year Built:	1925
Living Area:	34,613
Replacement Cost:	$3,981,874
Building Percent Good:	60
Replacement Cost Less Depreciation:	$2,389,100

Building Attributes	
Field	**Description**
STYLE	Gymnasium
MODEL	Comm/Ind

Building Photo

Grade	B
Stories:	2.5
Occupancy	1
Exterior Wall 1	Stone/Masonry
Exterior Wall 2	Brick/Masonry
Roof Structure	Gable
Roof Cover	Slate
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Plastered
Interior Floor 1	Hardwood
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	None
Bldg Use	Pvt School Com
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	904I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	22
% Comn Wall	0

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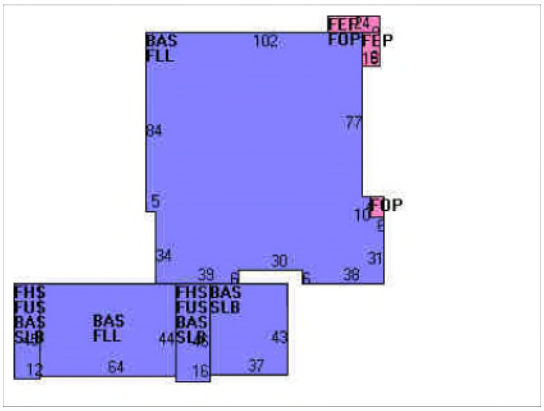
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	17,719	17,719
FLL	Finished Lower Level	14,852	14,852
FUS	Finished Upper Story	1,276	1,276
FHS	Finished Half Story	1,276	766
FEP	Enclosed Porch	320	0
FOP	Open Porch	252	0
SLB	Slab	2,867	0
		38,562	34,613

Building 2 : Section 1

Year Built: 1977
Living Area: 70,894
Replacement Cost: $9,095,796
Building Percent Good: 78
Replacement Cost Less Depreciation: $7,094,700

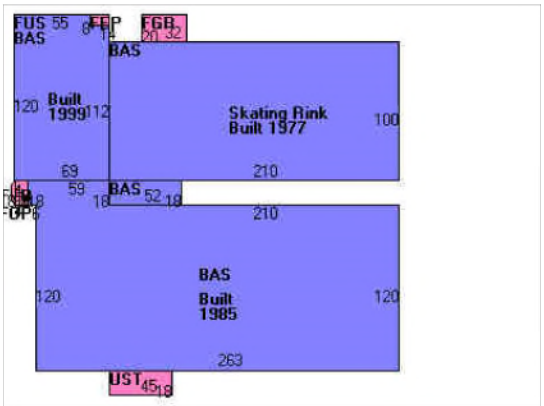
Building Photo

Building Attributes : Bldg 2 of 4	
Field	**Description**
STYLE	Gymnasium

MODEL	Comm/Ind
Grade	B+
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	Stone Veneer
Roof Structure	Gable
Roof Cover	Enamel Metal
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Bldg Use	Pvt School Com
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	904I
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20
% Comn Wall	0

(http://images.vgsi.com/photos/NewMilfordCTPhotos//\00\01\68/76.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	62,726	62,726
FUS	Finished Upper Story	8,168	8,168
FEP	Enclosed Porch	274	0
FGR	Garage	640	0
FOP	Open Porch	45	0
UST	Unfinished Utility Storage	810	0
		72,663	70,894

Building 3 : Section 1

Year Built: 2008
Living Area: 17,020
Replacement Cost: $2,174,816
Building Percent Good: 93
Replacement Cost Less Depreciation: $2,022,600

Building Photo

Building Attributes : Bldg 3 of 4	
Field	**Description**
STYLE	Auditorium
MODEL	Comm/Ind

Grade	B+
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Slate
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	Concr Abv Grad
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Bldg Use	Pvt School Com
Total Rooms	1
Total Bedrms	
Total Baths	11
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	

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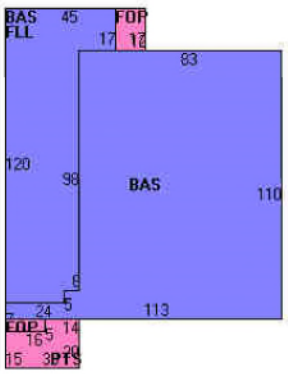
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	13,195	13,195
FLL	Finished Lower Level	3,825	3,825
FOP	Open Porch	284	0
PTS	Patio - Stone	520	0
		17,824	17,020

Building 4 : Section 1

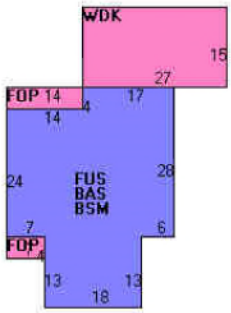
Year Built: 1900
Living Area: 2,092
Replacement Cost: $250,990
Building Percent Good: 69
Replacement Cost Less Depreciation: $173,200

Building Attributes : Bldg 4 of 4	
Field	**Description**
Style	Colonial
Model	Residential
Grade	C
Stories	2

Building Photo

Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shngl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Pine/Soft Wood
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type	None
Total Bedrooms	3 Bedrooms
Full Bathrooms	2
Half Bathrooms	1
Total Xtra Fixtrs	
Total Rooms	6
Bath Style	Average
Kitchen Style	Average
Whirlpool Tub	
Fireplaces	
Fin Bsmt Area	
Bsmt Garages	
Insp. Letter	
Multi-House	

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,046	1,046
FUS	Finished Upper Story	1,046	1,046
BSM	Basement	1,046	0
FOP	Open Porch	84	0
WDK	Wood Deck	405	0
		3,627	2,092

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
SPR	Sprinklers	1875 S.F.	$1,900	1
A/C	Air Conditioning	7650 S.F.	$28,500	3
SPR	Sprinklers	7650 S.F.	$12,100	3
ELV	Elevator	2 Units	$46,500	3
A/C	Air Conditioning	49762 S.F.	$155,300	2
ELV	Elevator	2 Units	$39,000	2

Land

Land Use

Use Code 947
Description Pvt School Com
Zone R40/B1
Neighborhood C110

Land Line Valuation

Size (Acres) 41.87
Frontage 0
Depth 0
Assessed Value $1,378,930

Alt Land Appr Category No

Appraised Value $1,969,900

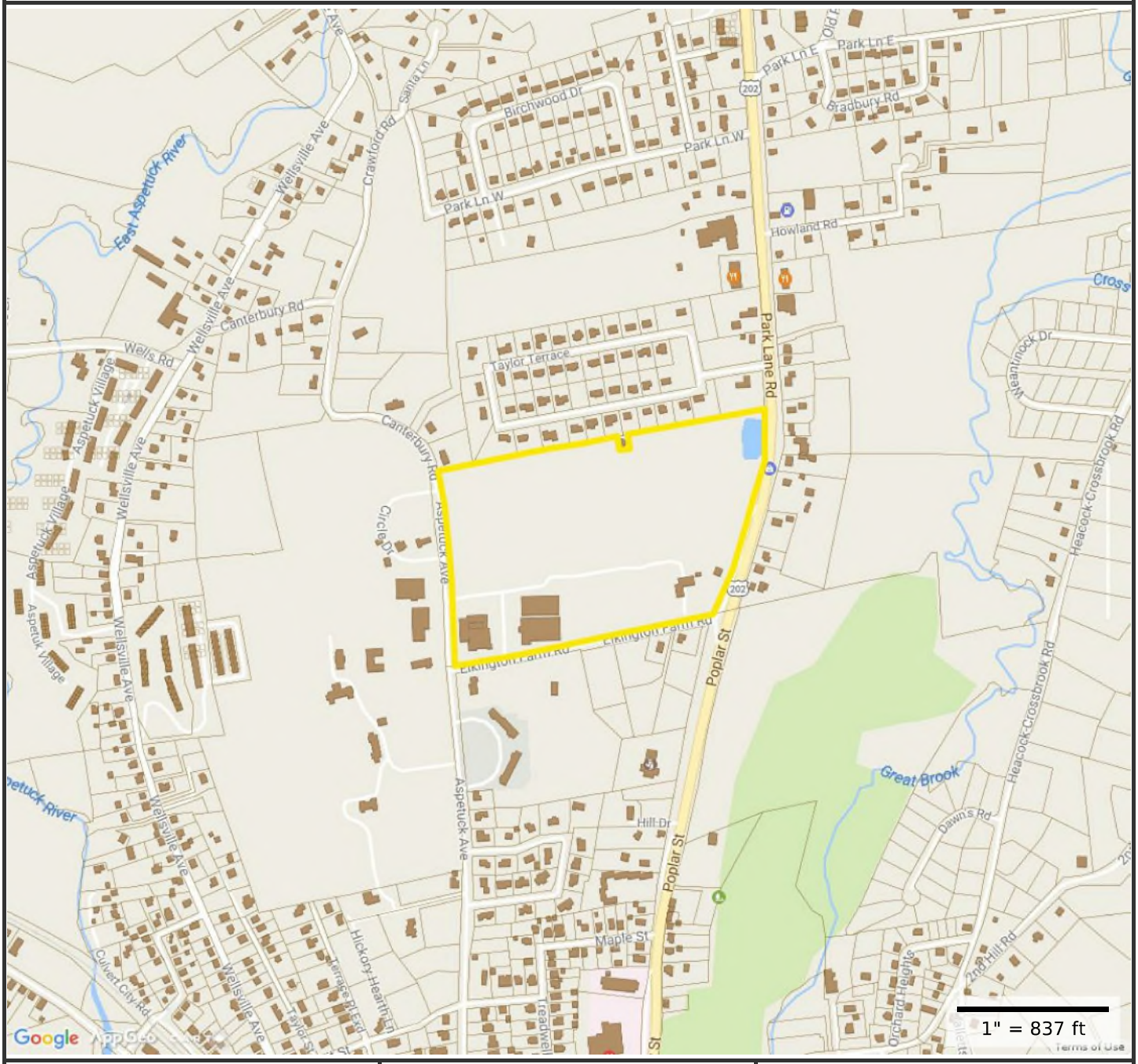
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
LT1	Light (1)			7 Units	$6,600	3
SHD1	Shed	FR	Frame	288 S.F.	$1,700	4
TEN	Tennis Court			6 Units	$126,000	2
PAV1	Paving Asph.			10800 S.F.	$16,200	3
PAV1	Paving Asph.			8576 S.F.	$10,300	1
LT1	Light (1)			8 Units	$7,500	2
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
GAR1	Garage	FR	Frame	624 S.F.	$11,500	2
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
PAT1	Patio	BR	Brick	2842 S.F.	$25,600	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$12,342,100	$1,903,600	$14,245,700
2009	$9,337,700	$1,439,400	$10,777,100
2009	$9,337,700	$1,439,400	$10,777,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$8,639,470	$1,332,520	$9,971,990
2009	$6,536,390	$1,007,580	$7,543,970
2009	$6,536,390	$1,007,580	$7,543,970



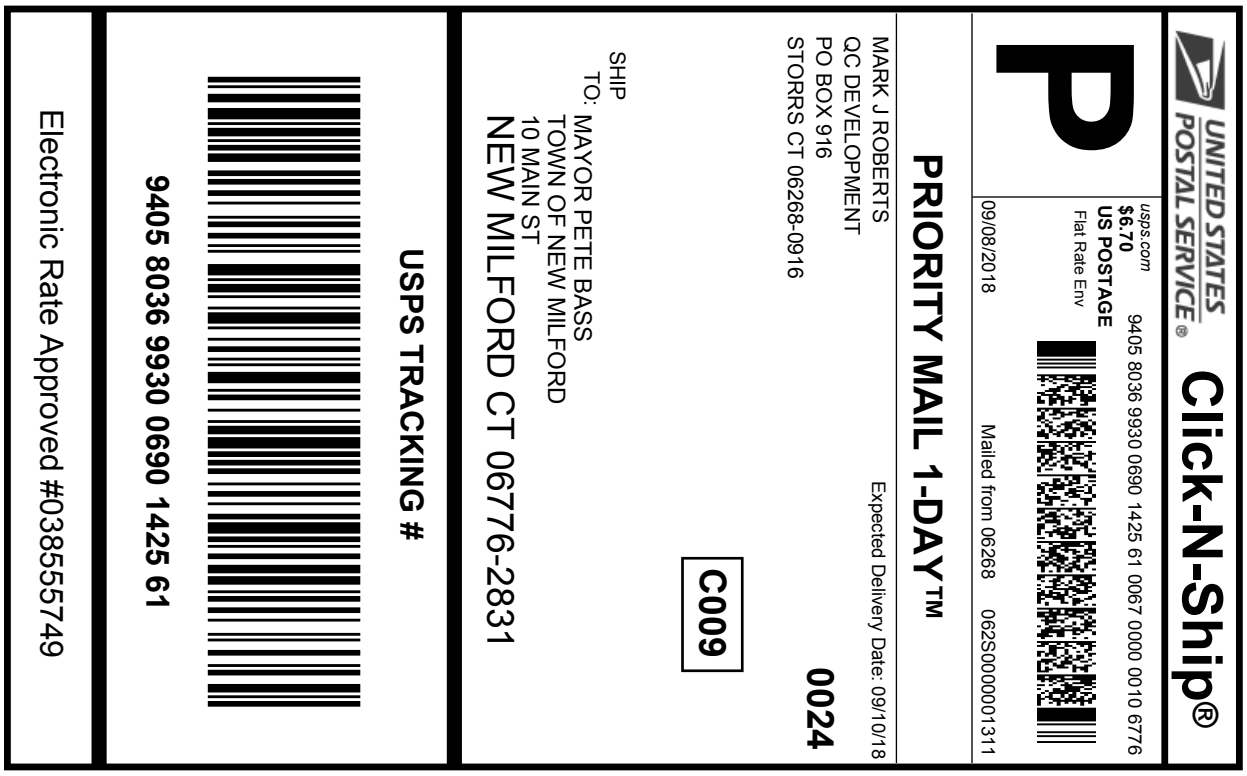
Property Information

Property ID	35.4/37
Location	CANTERBURY RD
Owner	CANTERBURY SCHOOL INC

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of New Milford, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 10/1/2014
Properties updated 01/27/2017



Cut on dotted line.

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2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0690 1425 61

Trans. #:	443583098
Print Date:	09/07/2018
Ship Date:	09/08/2018
Expected Delivery Date:	09/10/2018
Insured Value:	$50.00

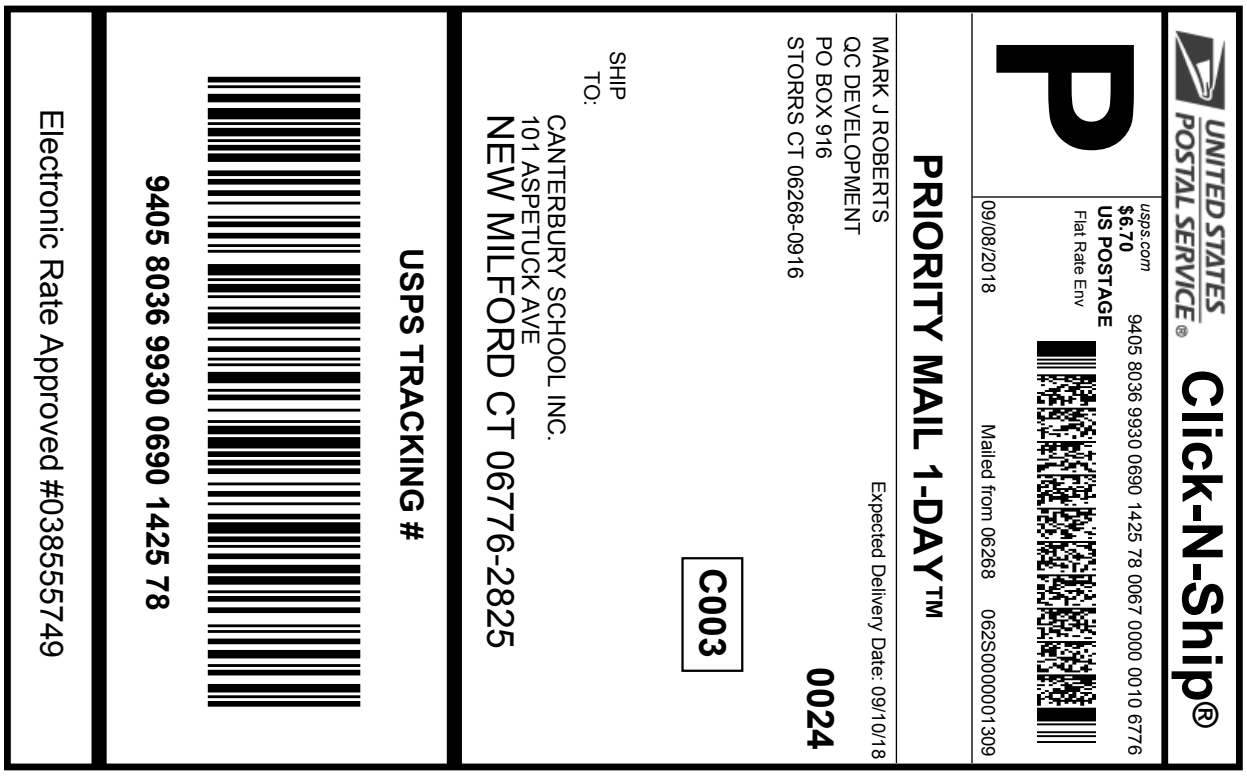
Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR PETE BASS
TOWN OF NEW MILFORD
10 MAIN ST
NEW MILFORD CT 06776-2831

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0690 1425 78

Trans. #:	443583098
Print Date:	09/07/2018
Ship Date:	09/08/2018
Expected Delivery Date:	09/10/2018
Insured Value:	$50.00

Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: CANTERBURY SCHOOL INC.
101 ASPETUCK AVE
NEW MILFORD CT 06776-2825

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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Check the status of your shipment on the USPS Tracking® page at usps.com