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

November 9, 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)
265 Benham Street, Hamden, CT 06514 – AT&T SITE # CT2040
N 41.37019444
W 72.93151389

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 54-foot level of the existing 91-foot Rooftop Guyed Tower at 265 Benham Street, Hamden, CT. The tower is owned by Verizon and the property is owned by the Apostles of the Sacred Heart. AT&T now intends to add (3) KMW EPBQ-654L8H6-L2 antennas on the existing mount frames at the 54-foot level of the tower. AT&T also intends to install three (3) Ericsson RRUS-32, (3) 4478-B5 and (3) 4426-B66 Remote Radio Units (RRU) at the 54-foot level.

This facility was approved by the Hamden Planning and Zoning Commission on August 22, 2000. There were no conditions that could feasibly be violated by this modification, including, total facility height or mounting restrictions. 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 Curt B. Leng, Mayor of the Town of Hamden, and to the Hamden Planning and Zoning

Department, as well as to 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: Honorable Curt B. Leng - as Elected Official
Daniel Kops, Jr. – Town Planner
Apostles of the Sacred Heart - as Property Owner
Verizon - as tower 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*							63.56%
AT&T GSM	2	982	54.5	0.3003	880	0.5867	5.12%
AT&T UMTS	1	491	54.5	0.0751	880	0.5867	1.28%
AT&T UMTS	4	813	54.5	0.4972	1900	1.0000	4.97%
AT&T LTE	1	1313	54.5	0.2007	734	0.4893	4.10%
AT&T LTE	1	2421	54.5	0.3701	1900	1.0000	3.70%
Site Total							82.74%

*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*							63.56%
AT&T UMTS	1	530	54.5	0.0810	850	0.5667	1.43%
AT&T LTE	1	1476	54.5	0.2257	700	0.4667	4.84%
AT&T LTE	1	1000	54.5	0.1529	850	0.5667	2.70%
AT&T LTE	2	3664	54.5	1.1203	1900	1.0000	11.20%
AT&T LTE	1	3837	54.5	0.5866	2100	1.0000	5.87%
AT&T LTE	1	1285	54.5	0.1965	2300	1.0000	1.96%
Site Total							91.56%

*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 LATTICE TOWER • NEW AT&T ANTENNA: (EPBQ–654L8H6–L2) ANTENNA @ POSITION 3 (TYP. OF 1 PER SECTOR TOTAL OF 3). • NEW AT&T RRUS: RRUS 4478 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3) • NEW AT&T RRUS: RRUS 4426 B66 (2100) (TYP. OF 1 PER SECTOR, TOTAL OF 3) • NEW AT&T RRUS: RRUS 32 B2 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) •NEW AT&T SURGE ARRESTOR (TOTAL OF 2). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: •REPLACE DUS WITH 5216 •ADD 2ND XMU, ADD DECOM UMTS 1900 & GSM •REMOVE RXAIT •ADD DC 12 ITEMS TO REMAIN: • (6) ANTENNAS, (6) RRU'S, (1) SURGE ARRESTOR, (6) 1–5/8" COAX, (2) DC POWER & (1) FIBER.
SITE ADDRESS:	265 BENHAM STREET HAMDEN, CT 06514
PACE ID:	MRCTB030965/MRCTB031781/MRCTB031394.
LATITUDE:	41.370186° N 41° 22' 12.69" N
LONGITUDE:	72.931471° W 72° 55' 53.52" W
TYPE OF SITE:	LATTICE TOWER / INDOOR EQUIPMENT
TOWER HEIGHT:	105'–11"±
RAD CENTER:	54'–6"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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G–1	GROUNDING DETAILS	1

SITE NUMBER: CT2040

SITE NAME: HAMDEN - BENHAM STREET

FA CODE: 10035317

PACE ID:MRCTB030965, MRCTB031781, MRCTB031394

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

VICINITY MAP

DIRECTIONS TO SITE:

FROM ROCKY HILL, CT: HEAD EAST ON ENTERPRISE DR TOWARD CAPITOL BLVD – GO 0.4 MI. TURN LEFT AT CAPITOL BLVD – GO 0.3 MI. TURN LEFT AT WEST ST – GO 0.3 MI. TURN LEFT TO MERGE ONTO I–91 S TOWARD NEW HAVEN – GO 9.6 MI. TAKE EXIT 17 FOR W CROSS PKWY/CT–15 S – GO 0.4 MI. MERGE ONTO CT–15 S/WILLBUR CROSS PKWY – GO 14.2 MI. TAKE EXIT 60 FOR CT–10 TOWARD HAMDEN/NEW HAVEN – GO 0.2 MI. TURN RIGHT AT CT–10/DIXWELL AVE – GO 0.3 MI. TURN RIGHT AT NEBHAM ST – GO 0.5 MI. ARRIVE AT 261 BENHAM ST, HAMDEN.

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2040
SITE NAME: HAMDEN - BENHAM STREET

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	06/28/18	ISSUED FOR REVIEW	AM	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: AM

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

AT&T

TITLE SHEET
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	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 LTE 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 BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING 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

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2040
SITE NAME: HAMDEN - BENHAM STREET

265 BENHAM STREET
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NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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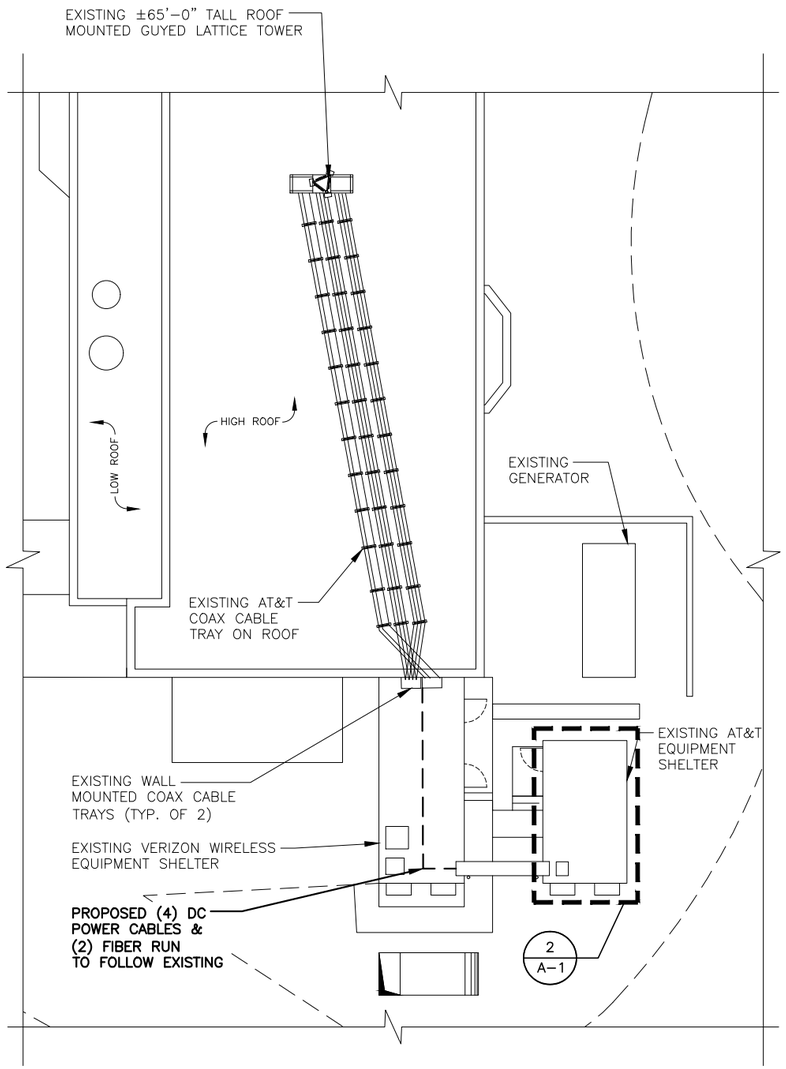
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 23557 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	GN-1	1



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

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

NOTE:

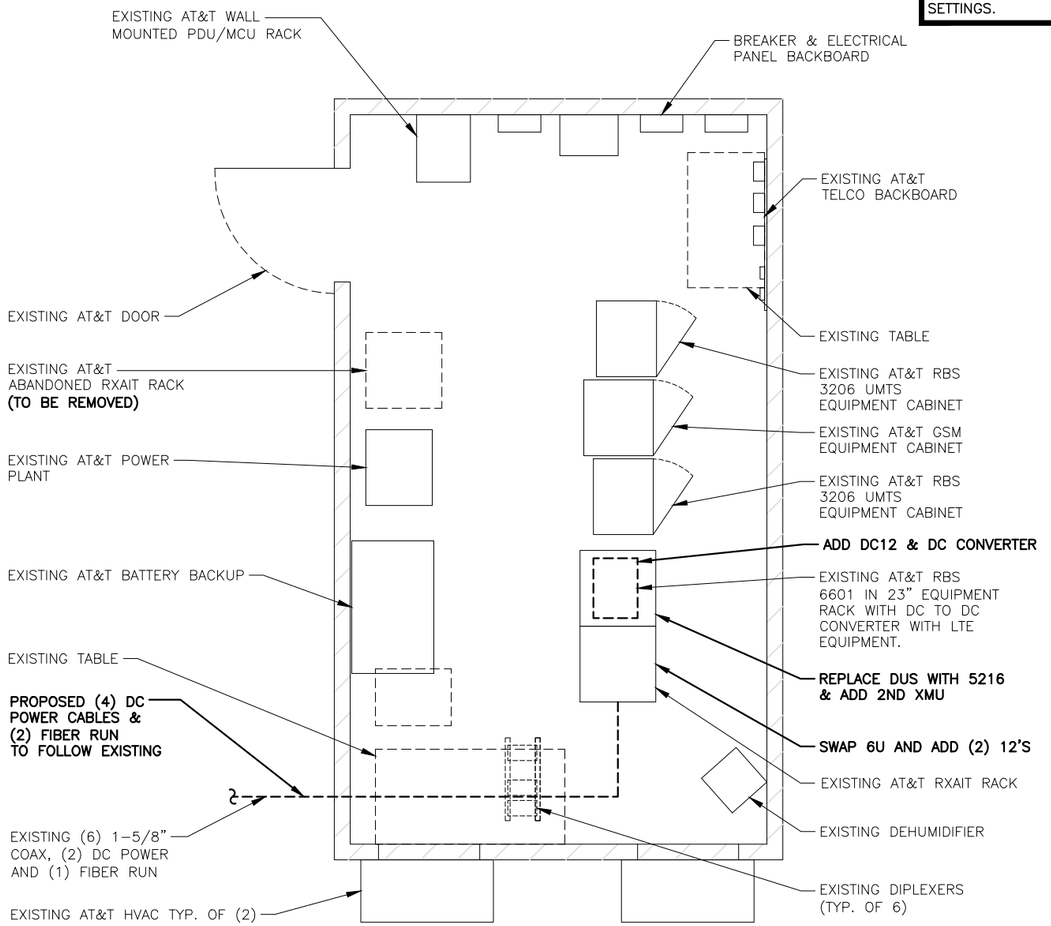
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 5, 2018

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: SEMAAN, ENGINEERING SOLUTIONS, DATED: OCTOBER 26, 2018, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

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



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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STATE OF CONNECTICUT · DEREK J. CREASEY · No. 23557 · LICENSED PROFESSIONAL ENGINEER

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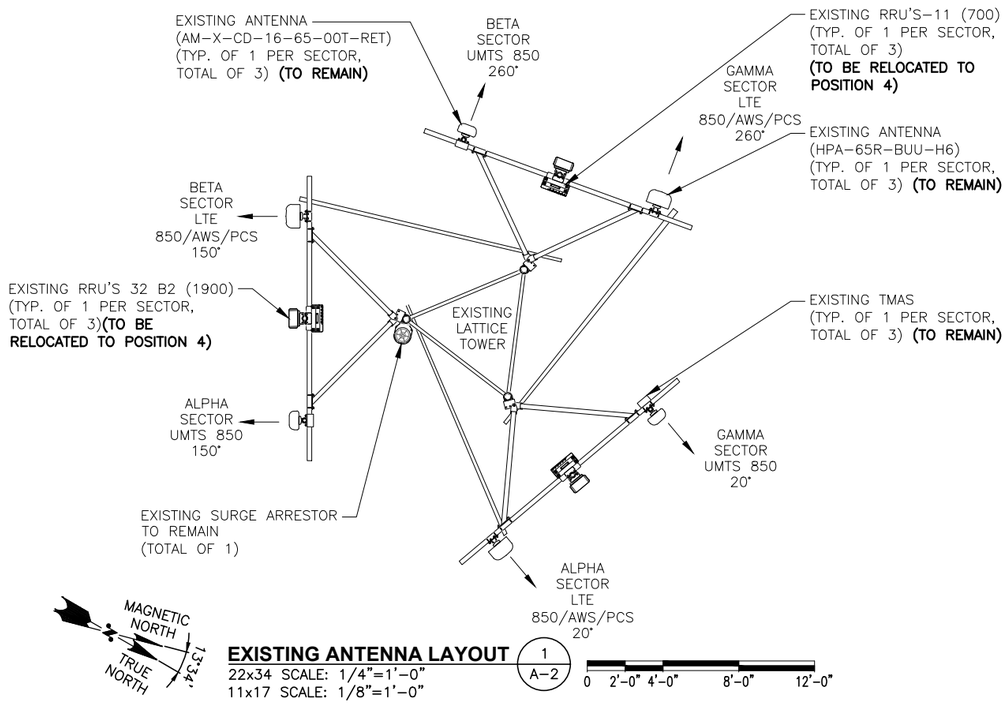
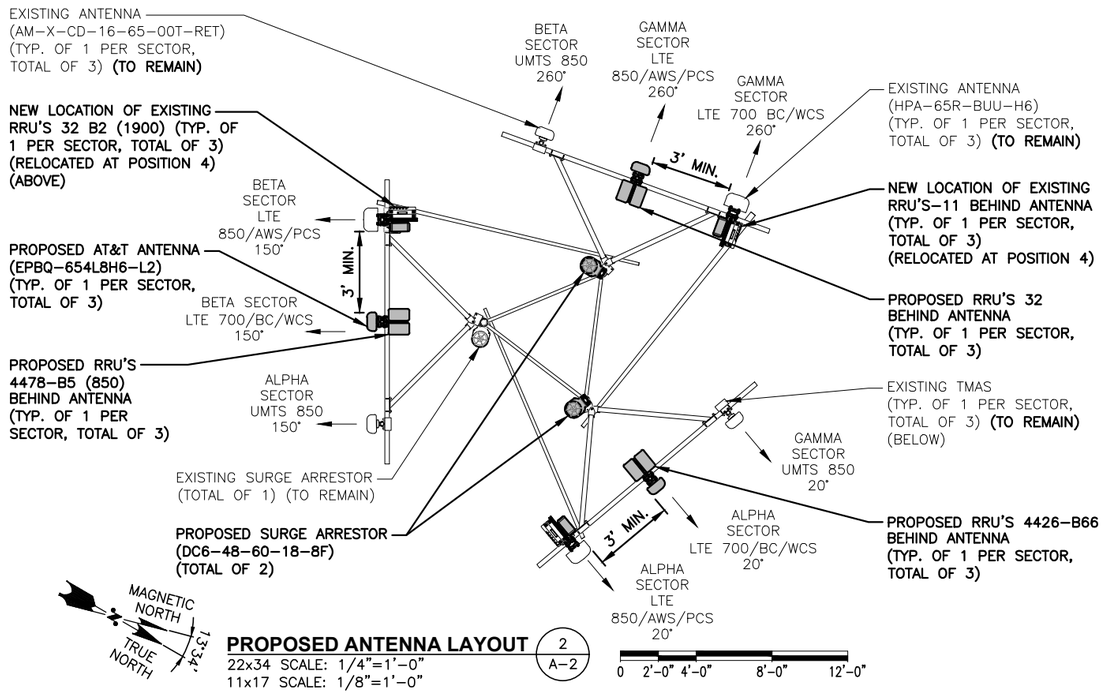
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-1	1



EXISTING ANTENNA LAYOUT (1 / A–2)
22x34 SCALE: 1/4"=1'–0"
11x17 SCALE: 1/8"=1'–0"

0 2'–0" 4'–0" 8'–0" 12'–0"



PROPOSED ANTENNA LAYOUT (2 / A–2)
22x34 SCALE: 1/4"=1'–0"
11x17 SCALE: 1/8"=1'–0"

0 2'–0" 4'–0" 8'–0" 12'–0"

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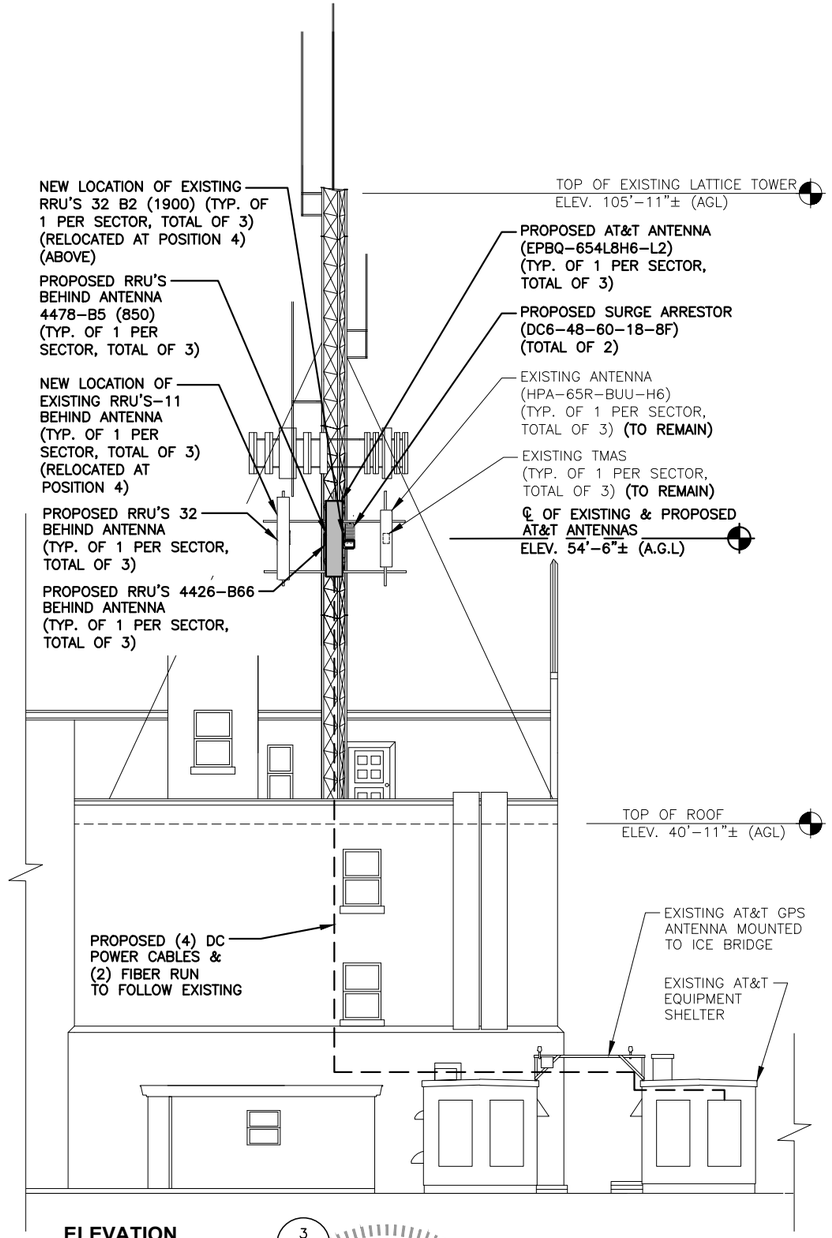


ELEVATION (3 / A–2)
22x34 SCALE: 1/8"=1'–0"
11x17 SCALE: 1/16"=1'–0"

0 4'–0" 8'–0" 16'–0" 24'–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: CT2040
SITE NAME: HAMDEN - BENHAM STREET

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/08/18	ISSUED FOR CONSTRUCTION	AM	AT	DPH
A	06/28/18	ISSUED FOR REVIEW	AM	AT	DPH

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

STATE OF CONNECTICUT · DEREK J. CREASER · 28355 · LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A–2	1

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: SEMAAN, ENGINEERING SOLUTIONS, DATED: OCTOBER 26, 2018, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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: JUNE 5, 2018

NOTE:

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

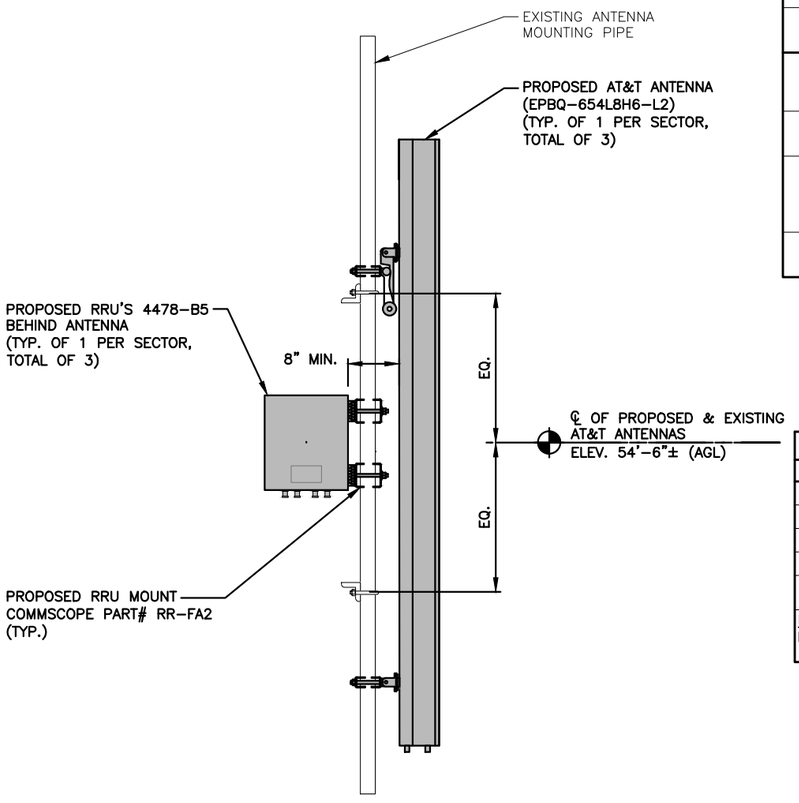
ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ COMBINER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	±54'-6"	150°	(1)CCI-DTMABP7819VG12A (2)CM1007-DBPXBC-003	–	**27.2X12.1X7.0**	(2)1-5/8" (APPROX 190'±)	–
A2	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
A3	**PROPOSED**	**LTE 800/AWS/PCS**	**EPBQ-654L8H6-L2**	**73X21X6.3**	**±54'-6"**	**20°**	–	(E) (1) RRUS-32 B2 (1900) **(P) (1) 4426 B66 (P) (1) 4478 B5 (850)**	– **15.0X13.2X7.41 15.0X13.2X7.4**	–	
A4	EXISTING	LTE 700 BC/WCS	HPA-65R-BUU-H6	72X14.8X9	±54'-6"	20°	–	(E) (1) RRUS-11 (700) **(P) (1) RRUS 32**	19.7X7.2X17.0 **27.2X12.1X7.0**	–	
B1	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	±54'-6"	260°	(1)CCI-DTMABP7819VG12A (2)CM1007-DBPXBC-003	–	**27.2X12.1X7.0**	(2)1-5/8" (APPROX 190'±)	–
B2	–	–	–	–	–	–	–	–	–	–	**(P) (1) RAYCAP DC6-48-60-18-8C**
B3	**PROPOSED**	**LTE 800/AWS/PCS**	**EPBQ-654L8H6-L2**	**73X21X6.3**	**±54'-6"**	**150°**	–	(E) (1) RRUS-32 B2 (1900) **(P) (1) 4426 B66 (P) (1) 4478 B5 (850)**	– **15.0X13.2X7.41 15.0X13.2X7.4**	–	
B4	EXISTING	LTE 700 BC/WCS	HPA-65R-BUU-H6	72X14.8X9	±54'-6"	150°	–	(E) (1) RRUS-11 (700) **(P) (1) RRUS 32**	19.7X7.2X17.0 **27.2X12.1X7.0**	–	
C1	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	±54'-6"	20°	(1)CCI-DTMABP7819VG12A (2)CM1007-DBPXBC-003	–	**27.2X12.1X7.0**	(2)1-5/8" (APPROX 190'±)	–
C2	–	–	–	–	–	–	–	–	–	–	**(P) (1) RAYCAP DC6-48-60-18-8C**
C3	**PROPOSED**	**LTE 800/AWS/PCS**	**EPBQ-654L8H6-L2**	**73X21X6.3**	**±54'-6"**	**260°**	–	(E) (1) RRUS-32 B2 (1900) **(P) (1) 4426 B66 (P) (1) 4478 B5 (850)**	– **15.0X13.2X7.41 15.0X13.2X7.4**	–	
C4	EXISTING	LTE 700 BC/WCS	HPA-65R-BUU-H6	72X14.8X9	±54'-6"	260°	–	(E) (1) RRUS-11 (700) **(P) (1) RRUS 32**	19.7X7.2X17.0 **27.2X12.1X7.0**	–	

FINAL ANTENNA CONFIGURATION

SCALE: N.T.S

5 / A-3



PROPOSED ANTENNA & RRH MOUNTING DETAIL

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

1 / S-1

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

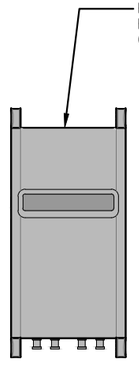
RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	7.2"	17.0"
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	4478-B5	18.1"	13.4"	8.3"
3(P)	4426-B66	15.0"	13.2"	7.4"
3(P)	RRUS-32 B2	27.2"	12.1"	7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

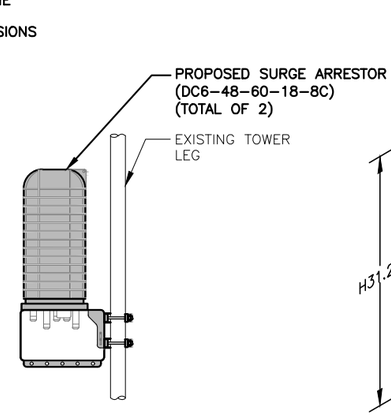


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRUS DETAIL

SCALE: N.T.S

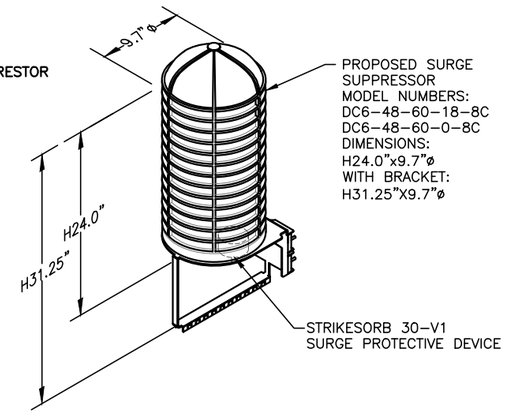
2 / A-3



PROPOSED SURGE ARRESTOR MOUNT DETAIL

SCALE: N.T.S

3 / A-3



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S

4 / A-3

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SALEM, NH 03079

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

SITE NUMBER: CT2040
SITE NAME: HAMDEN - BENHAM STREET

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/08/18	ISSUED FOR CONSTRUCTION	AM	AT	DPH
A	06/28/18	ISSUED FOR REVIEW	AM	AT	DPH

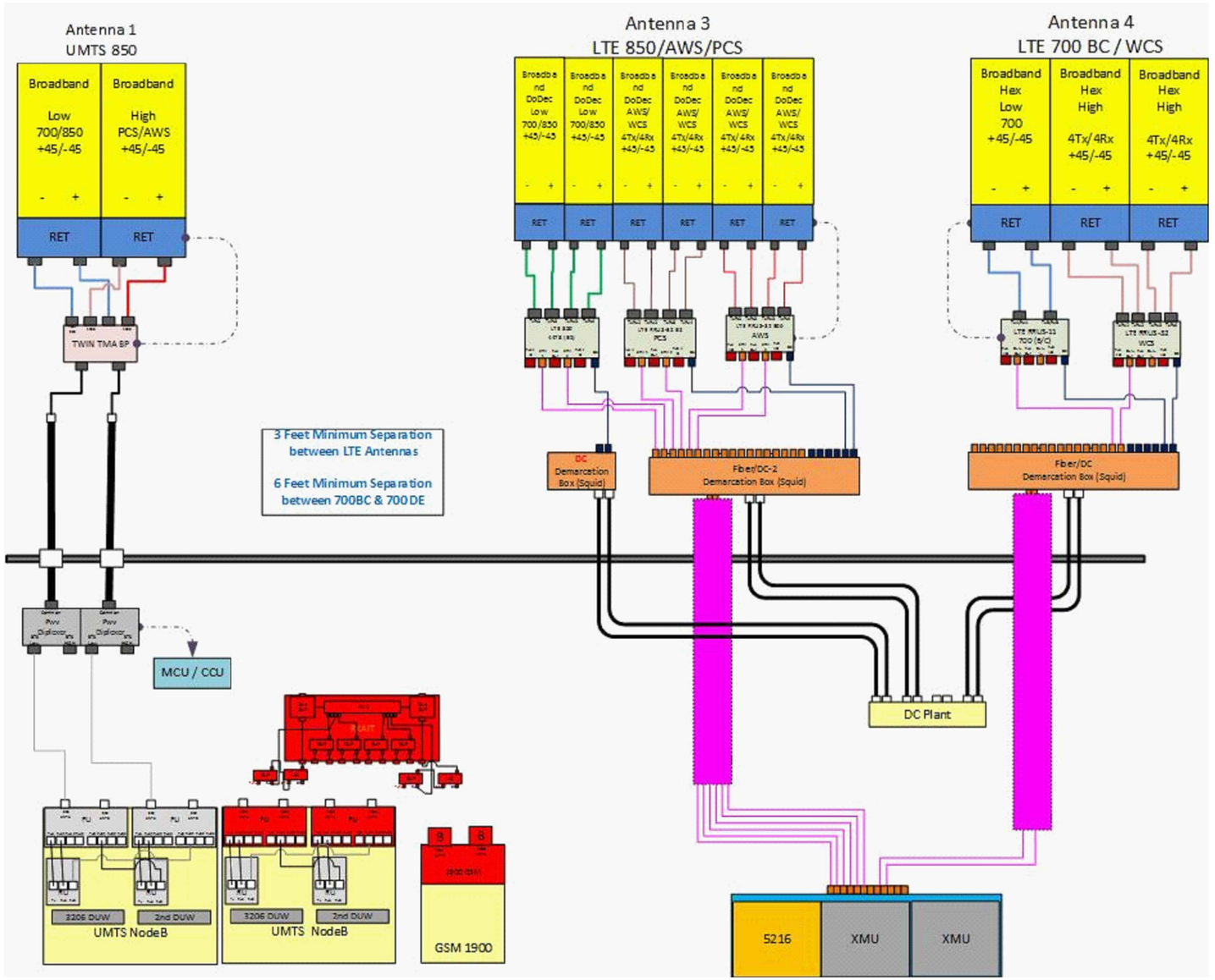
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

STATE OF CONNECTICUT · DEREK J. CREASER · 16,258 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-3	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.

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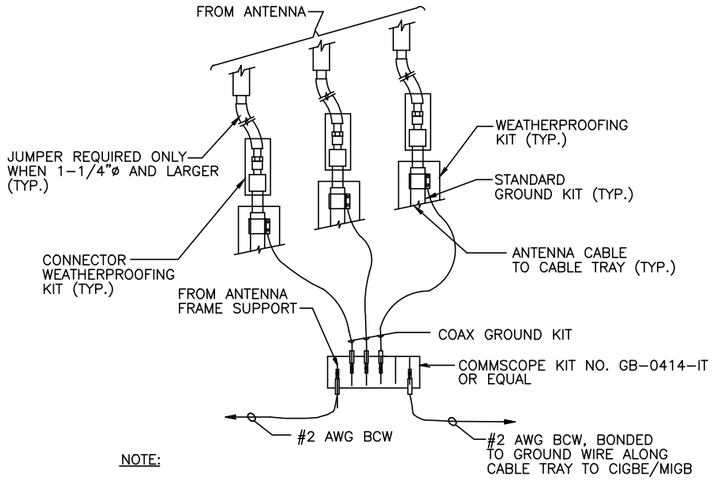
RF PLUMBING DIAGRAM
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	RF–1	1



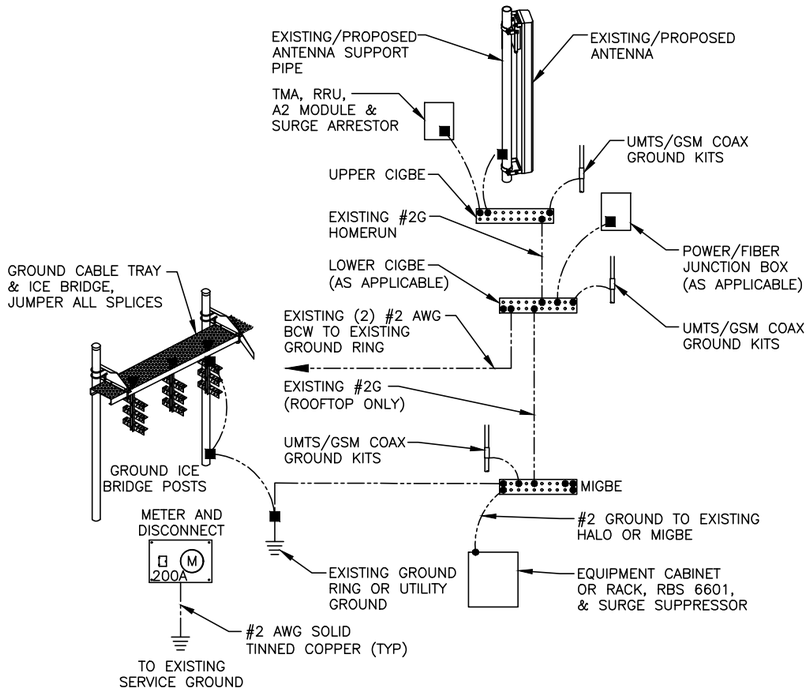
NOTE:

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

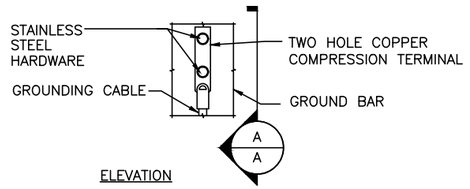
1 / G-1



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

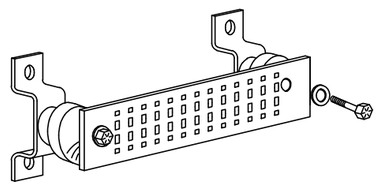
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

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SAI
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STATE OF CONNECTICUT
DEREK J. CREASER
No. 23057
LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
LTE 3C, 4C, 5C 2018 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	G-1	1

Structural Analysis Report

Prepared for:

KGI
805 Las Cimas Parkway
Building Three, Suite 370
Austin, TX 78746

ATTN: Ms. Vicki Hollis

Structure	:	**65 ft Guyed Tower on a 27 ft Tall Building Rooftop**
Site ID	:	**28195**
Proposed Carrier	:	**AT&T**
Site Name	:	**Hamden 2**
Site Location	:	**265 Benham Street** **Hamden, CT** **41.370194, -72.931514**
County	:	**New Haven**
Date	:	**October 26, 2018**
Max Usage	:	**97%**
Result	:	**Pass**

STATE OF CONNECTICUT
THOMAS L TAYLOR
28130
LICENSED
PROFESSIONAL ENGINEER

10.26.18

Prepared By:
Courtney Bateman
Structural Engineer

Table of Contents

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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 65 ft guyed tower to reflect the change in loading by AT&T. The tower is mounted on a rooftop that is approximately 27 ft above grade.

Supporting Documents

Tower Drawings	Hudson Design Group Job #CT2040, dated July 30, 2018

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust) Vasd / 125 mph (3-Second Gust) Vult
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" 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 = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

If you have any questions or require additional information, please contact Semaan Engineering Solutions at 402-289-1888.

Existing and Reserved Equipment

Centerline Elevation (ft)*		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
91.0	101.0	1	20 ft Omni	(1) 2 ft Standoff	(2) 7/8"	-
	99.5	1	17 ft Omni	(1) 3 ft Standoff		
76.5	80.5	1	8 ft Omni	(1) 2 ft Standoff	(1) 7/8"	
69.0	79.5	1	21 ft 8 Bay Dipole	(1) 3 ft Standoff	(1) 7/8"	
63.5	63.5	12	10" x 7" x 2" TMA	Platform w/Rail	(12) 1 5/8" (3) Hybrid	Verizon
		6	3JR52709AA			
		12	BXA-70080/8CF			
		3	OVP Junction Box			
		3	RRH4x30-4T4R-B13			
		3	RRH4x30-4T4R-B25			
		12	RRUS A2 Module			
54.5	54.5	3	AM-X-CD-16-65-00T-RET	(3) Sector Frames	(6) 1 5/8" (1) 5/16" Fiber (2) 3/8" DC	AT&T
		1	DC6-48-60-18-8F			
		3	DTMABP7819VG12A			
		3	HPA-65R-BUU-H6			
		3	RRUS-11			
		3	RRUS-32 B2			

Equipment to be Removed

Centerline Elevation (ft)*		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
No loading considered as to be removed						

Proposed Equipment

Centerline Elevation (ft)*		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
54.5	54.5	2	DC6-48-60-18-8F	Existing (3) Sector Frames	(2) 5/16" Fiber (4) 3/8" DC	AT&T
		3	EPBQ-654L8H6-L2			
		3	RRUS 4426-B66			
		3	RRUS 4478-B5			
		3	RRUS-32 B30			

*The structure is a 65 ft guyed tower mounted on a 27 ft building. All elevations are measured from the ground level.

Install proposed coax anywhere on tower.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	53%	Pass
Diagonals	97%	Pass
Horizontals	64%	Pass
Guys	33%	Pass

Foundations

Reaction Component	Analysis Reactions
Base Axial (kips)	36.4
Anchor 1 Uplift (kips)	20.0
Anchor 1 Shear (kips)	11.8

The tower connection to the building and the building structure itself were not investigated and is not within the scope of this analysis. The tower connections and building structure must be checked by others.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
54.5	DC6-48-60-18-8F	AT&T	0.015	0.003	0.059
	EPBQ-654L8H6-L2				
	RRUS 4426-B66				
	RRUS 4478-B5				
	RRUS-32 B30				

***Deflection, Twist 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 are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of Semaan Engineering Solutions, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Semaan Engineering Solutions Holdings and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and Semaan Engineering Solutions, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Semaan Engineering Solutions Holdings is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

SEMAAN ENGINEERING SOLUTIONS, LLC
1047 N.205th Street
Elkhorn, NE 68022

Loads: 97 mph no ice
50 mph w / 3/4" radial ice
Site Class: D Ss: 0.19 S1: 0.06
60 mph Serviceability

Job Information

Tower : 28195	Location : Hamden 2, Hamden, CT		
Code: ANSI/TIA-222-G	Shape : Triangle	Base Width : 2.50 ft	
Client : KGI			

Sections Properties

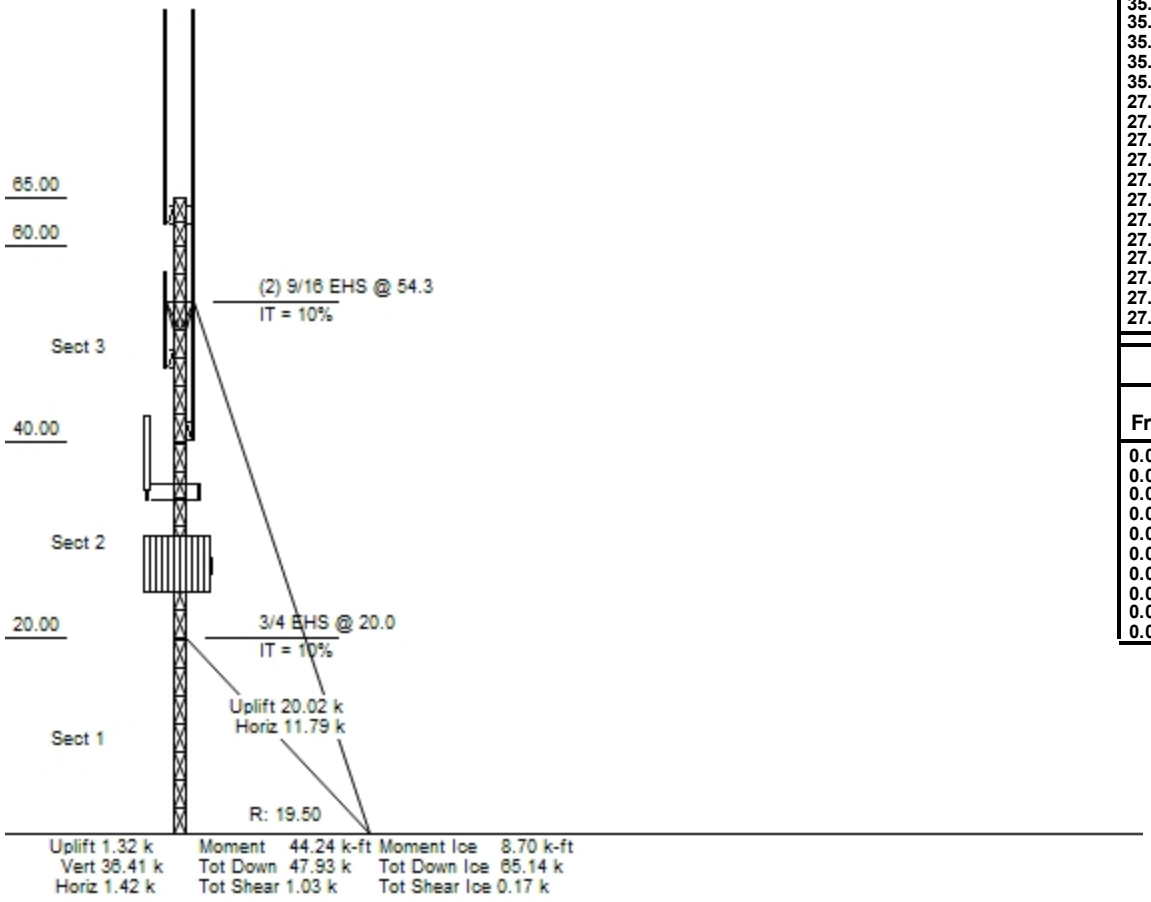
Section	Leg Members		Diagonal Members	Horizontal Members
1 - 4	SOL 44 ksi	1 3/4" SOLID	SOL 36 ksi 1/2" SOLID	SAE 36 ksi 1.25x1.25x0.1875

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
64.00	Whip	1	20 ft Omni
64.00		1	2 ft Standoff
64.00	Whip	1	17 ft Omni
64.00		1	3 ft Standoff
54.25		1	Torque Arm
49.50	Whip	1	8 ft Omni
49.50		1	2 ft Standoff
42.00	Whip	1	21 ft 8 Bay Dipole
42.00		1	3 ft Standoff
35.00	Panel	3	OVP Junction Box
35.00	Panel	12	10" x 7" x 2" TMA
35.00	Panel	3	RRH4x30-4T4R-B25
35.00	Panel	3	RRH4x30-4T4R-B13
35.00	Panel	6	3JR52709AA
35.00	Panel	12	RRUS A2 Module
35.00	Panel	12	BXA-70080/8CF
35.00	Mounting Frame	1	Platform w/Rail
27.50	Panel	2	DC6-48-60-18-8F
27.50	Panel	3	RRUS 4426-B66
27.50	Panel	3	RRUS 4478-B5
27.50	Panel	3	RRUS-32 B30
27.50	Panel	3	EPBQ-654L8H6-L2
27.50	Panel	1	DC6-48-60-18-8F
27.50	Panel	3	RRUS-32 B2
27.50	Panel	3	RRUS-11
27.50		3	DTMABP7819VG12A
27.50	Panel	3	HPA-65R-BUU-H6
27.50	Panel	3	AM-X-CD-16-65-00T-RET
27.50	Mounting Frame	3	Sector Frames

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.000	64.000	2	7/8" Coax
0.000	49.500	1	7/8" Coax
0.000	42.000	1	7/8" Coax
0.000	35.000	3	Hybrid Cable
0.000	35.000	12	1 5/8" Coax
0.000	27.500	2	5/16" Fiber
0.000	27.500	1	5/16" Fiber
0.000	27.500	4	3/8" DC
0.000	27.500	2	3/8" DC
0.000	27.500	6	1 5/8" Coax



Site Number:	**28195**	**Code:**	**ANSI/TIA-222-G**	
Site Name:	**Hamden 2, Hamden, CT**	**Engineering Number:**	**REV01**	10/26/2018 11:16:46 AM
Customer:	**KGI**			

Analysis Parameters

Location:	**New haven County, CT**		
Code:	**ANSI/TIA-222-G**	**Height (ft):**	**65**
Shape:	**Triangle**	**Base Elevation (ft):**	**27.00**
Tower Manufacturer:	**Nudd Corporation**	**Bottom Face Width (ft):**	**2.50**
Tower Type:	**Guyed**	**Top Face Width (ft):**	**2.50**

Ice & Wind Parameters

Structure Class:	**II**	**Design Windspeed Without Ice:**	**97 mph**
Exposure Category:	**B**	**Design Windspeed With Ice:**	**50 mph**
Topographic Catagory:	**1**	**Operational Windspeed:**	**60 mph**
Crest Height:	**0.0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**0.36**				
T_L(sec):	**6**	**p:**	**1.3**	**C_S:**	**0.080**
S_S:	**0.187**	**S_1:**	**0.063**	**C_S, Max:**	**0.113**
F_a:	**1.600**	**F_V:**	**2.400**	**C_S, Min:**	**0.030**
S_{ds}:	**0.199**	**S_{d1}:**	**0.101**		

Load Cases

1.2D + 1.6W Normal	**97 mph Normal to Face with No Ice**
1.2D + 1.6W 60 deg	**97 mph 60 degree with No Ice**
1.2D + 1.6W 90 deg	**97 mph 90 degree with No Ice**
1.2D + 1.0Di + 1.0Wi Normal	**50 mph Normal with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 60 deg	**50 mph 60 degree with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 90 deg	**50 mph 90 degree with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E Normal	**Seismic Normal**
(1.2 + 0.2Sds) * DL + E 60 deg	**Seismic 60 degree**
(1.2 + 0.2Sds) * DL + E 90 deg	**Seismic 90 degree**
(0.9 - 0.2Sds) * DL + E Normal	**Seismic (Reduced DL) Normal**
(0.9 - 0.2Sds) * DL + E 60 deg	**Seismic (Reduced DL) 60 degree**
(0.9 - 0.2Sds) * DL + E 90 deg	**Seismic (Reduced DL) 90 degree**
1.0D + 1.0W Service Normal	**Serviceability - 60 mph Wind Normal**
1.0D + 1.0W Service 60 deg	**Serviceability - 60 mph Wind 60 degree**
1.0D + 1.0W Service 90 deg	**Serviceability - 60 mph Wind 90 degree**

Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
64.00	17 ft Omni	1	28	5.1	17.0	3.0	3.0	1.00	1.00	8.5	1191.2	20.20	140	40
64.00	2 ft Standoff	1	30	1.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	19.70	47	43
64.00	20 ft Omni	1	50	6.0	20.0	3.0	3.0	1.00	1.00	10.0	1655.7	20.29	166	72
64.00	3 ft Standoff	1	40	2.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	19.70	70	58
54.25	Torque Arm	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	19.07	389	720
49.50	2 ft Standoff	1	30	1.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.74	45	43
49.50	8 ft Omni	1	15	2.4	8.0	3.0	3.0	1.00	1.00	4.0	248.3	19.02	62	22
42.00	21 ft 8 Bay Dipole	1	50	14.0	21.0	2.5	2.5	1.00	1.00	10.5	3788.4	18.95	361	72
42.00	3 ft Standoff	1	40	2.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.20	65	58
35.00	10" x 7" x 2" TMA	12	15	0.6	0.8	7.0	2.0	0.75	0.50	1.5	94.6	17.77	63	259
35.00	3JR52709AA	6	55	3.8	3.0	10.6	5.8	0.75	0.67	1.5	413.2	17.77	275	475
35.00	BXA-70080/8CF	12	23	8.3	7.9	8.1	5.7	0.75	0.85	1.5	2299.4	17.77	1533	397
35.00	OVP Junction Box	3	19	3.3	1.7	16.1	5.8	0.75	0.67	1.5	177.6	17.77	118	82
35.00	Platform w/Rail	1	2000	27.0	0.0	0.0	0.0	1.00	1.00	1.5	979.5	17.77	653	2880
35.00	RRH4x30-4T4R-B13	3	57	2.5	1.8	12.0	9.0	0.75	0.67	1.5	137.7	17.77	92	247
35.00	RRH4x30-4T4R-B25	3	51	2.5	1.8	12.0	7.2	0.75	0.67	1.5	136.6	17.77	91	220
35.00	RRUS A2 Module	12	21	1.9	1.3	12.8	3.4	0.75	0.67	1.5	408.1	17.77	272	366
27.50	AM-X-CD-16-65-00T-	3	49	8.3	6.0	11.8	5.9	0.80	0.75	0.0	0.0	17.01	344	210
27.50	DC6-48-60-18-8F	1	33	2.6	2.0	11.0	11.0	0.80	0.67	0.0	0.0	17.01	32	47
27.50	DC6-48-60-18-8F	2	33	2.6	2.0	11.0	11.0	0.80	0.67	0.0	0.0	17.01	63	94
27.50	DTMABP7819VG12A	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.0	17.01	27	83
27.50	EPBQ-654L8H6-L2	3	55	8.3	6.1	12.0	7.4	0.80	0.84	0.0	0.0	17.01	386	237
27.50	HPA-65R-BUU-H6	3	51	10.4	6.0	14.8	9.0	0.80	0.80	0.0	0.0	17.01	460	220
27.50	RRUS 4426-B66	3	59	1.6	1.3	13.2	7.3	0.80	0.67	0.0	0.0	17.01	61	257
27.50	RRUS 4478-B5	3	60	1.6	1.3	13.2	7.4	0.80	0.67	0.0	0.0	17.01	61	259
27.50	RRUS-11	3	51	3.3	1.6	17.0	8.0	0.80	0.67	0.0	0.0	17.01	121	220
27.50	RRUS-32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.0	17.01	102	229
27.50	RRUS-32 B30	3	77	3.9	2.5	13.3	9.5	0.80	0.67	0.0	0.0	17.01	144	333
27.50	Sector Frames	3	500	15.0	0.0	0.0	0.0	0.75	0.75	0.0	0.0	17.01	586	2160
	Totals	94	7225	430.4										

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
64.00	17 ft Omni	1	236	10.9	17.0	3.0	3.0	1.00	1.00	8.5	423.1	5.37	50	290
64.00	2 ft Standoff	1	87	5.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.23	25	112
64.00	20 ft Omni	1	294	12.8	20.0	3.0	3.0	1.00	1.00	10.0	586.8	5.39	59	365
64.00	3 ft Standoff	1	116	8.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.23	37	149
54.25	Torque Arm	1	1153	31.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.07	135	1504
49.50	2 ft Standoff	1	86	5.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.98	23	111
49.50	8 ft Omni	1	113	4.3	8.0	3.0	3.0	1.00	1.00	4.0	73.9	5.05	18	140
42.00	21 ft 8 Bay Dipole	1	274	12.3	21.0	2.5	2.5	1.00	1.00	10.5	551.1	5.03	52	341
42.00	3 ft Standoff	1	115	8.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.84	34	148
35.00	10" x 7" x 2" TMA	12	33	0.9	0.8	7.0	2.0	0.75	0.50	1.5	24.1	4.72	16	516
35.00	3JR52709AA	6	141	4.1	3.0	10.6	5.8	0.75	0.67	1.5	73.9	4.72	49	1095
35.00	BXA-70080/8CF	12	198	9.7	7.9	8.1	5.7	0.75	0.85	1.5	447.2	4.72	298	2921
35.00	OVP Junction Box	3	27	4.4	1.7	16.1	5.8	0.75	0.67	1.5	40.1	4.72	27	111
35.00	Platform w/Rail	1	4535	38.0	0.0	0.0	0.0	1.00	1.00	1.5	228.9	4.72	153	5922
35.00	RRH4x30-4T4R-B13	3	130	2.7	1.8	12.0	9.0	0.75	0.67	1.5	24.7	4.72	16	508
35.00	RRH4x30-4T4R-B25	3	116	2.7	1.8	12.0	7.2	0.75	0.67	1.5	24.5	4.72	16	455
35.00	RRUS A2 Module	12	54	2.8	1.3	12.8	3.4	0.75	0.67	1.5	99.9	4.72	67	837

Tower Loading

27.50	AM-X-CD-16-65-00T-	3	217	9.2	6.0	11.8	5.9	0.80	0.75	0.0	0.0	4.52	64	815
27.50	DC6-48-60-18-8F	1	89	3.7	2.0	11.0	11.0	0.80	0.67	0.0	0.0	4.52	8	115
27.50	DC6-48-60-18-8F	2	89	3.7	2.0	11.0	11.0	0.80	0.67	0.0	0.0	4.52	15	229
27.50	DTMABP7819VG12A	3	41	1.6	0.9	11.0	3.8	0.80	0.50	0.0	0.0	4.52	7	161
27.50	EPBQ-654L8H6-L2	3	240	9.4	6.1	12.0	7.4	0.80	0.84	0.0	0.0	4.52	73	905
27.50	HPA-65R-BUU-H6	3	273	10.9	6.0	14.8	9.0	0.80	0.80	0.0	0.0	4.52	80	1019
27.50	RRUS 4426-B66	3	87	2.9	1.3	13.2	7.3	0.80	0.67	0.0	0.0	4.52	18	355
27.50	RRUS 4478-B5	3	104	2.4	1.3	13.2	7.4	0.80	0.67	0.0	0.0	4.52	15	416
27.50	RRUS-11	3	120	4.4	1.6	17.0	8.0	0.80	0.67	0.0	0.0	4.52	27	470
27.50	RRUS-32 B2	3	117	3.8	2.3	12.1	7.0	0.80	0.67	0.0	0.0	4.52	23	461
27.50	RRUS-32 B30	3	178	4.0	2.5	13.3	9.5	0.80	0.67	0.0	0.0	4.52	25	697
27.50	Sector Frames	3	975	32.7	0.0	0.0	0.0	0.75	0.75	0.0	0.0	4.52	212	3871
	Totals	94	19420	606.3										

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
64.00	17 ft Omni	1	28	5.1	17.0	3.0	3.0	1.00	1.00	8.5	284.8	7.73	34	28
64.00	2 ft Standoff	1	30	1.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.54	11	30
64.00	20 ft Omni	1	50	6.0	20.0	3.0	3.0	1.00	1.00	10.0	395.9	7.76	40	50
64.00	3 ft Standoff	1	40	2.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.54	17	40
54.25	Torque Arm	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.30	93	500
49.50	2 ft Standoff	1	30	1.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.17	11	30
49.50	8 ft Omni	1	15	2.4	8.0	3.0	3.0	1.00	1.00	4.0	59.4	7.28	15	15
42.00	21 ft 8 Bay Dipole	1	50	14.0	21.0	2.5	2.5	1.00	1.00	10.5	905.9	7.25	86	50
42.00	3 ft Standoff	1	40	2.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.96	16	40
35.00	10" x 7" x 2" TMA	12	15	0.6	0.8	7.0	2.0	0.75	0.50	1.5	22.6	6.80	15	180
35.00	3JR52709AA	6	55	3.8	3.0	10.6	5.8	0.75	0.67	1.5	98.8	6.80	66	330
35.00	BXA-70080/8CF	12	23	8.3	7.9	8.1	5.7	0.75	0.85	1.5	549.9	6.80	367	276
35.00	OVP Junction Box	3	19	3.3	1.7	16.1	5.8	0.75	0.67	1.5	42.5	6.80	28	57
35.00	Platform w/Rail	1	2000	27.0	0.0	0.0	0.0	1.00	1.00	1.5	234.2	6.80	156	2000
35.00	RRH4x30-4T4R-B13	3	57	2.5	1.8	12.0	9.0	0.75	0.67	1.5	32.9	6.80	22	172
35.00	RRH4x30-4T4R-B25	3	51	2.5	1.8	12.0	7.2	0.75	0.67	1.5	32.7	6.80	22	153
35.00	RRUS A2 Module	12	21	1.9	1.3	12.8	3.4	0.75	0.67	1.5	97.6	6.80	65	254
27.50	AM-X-CD-16-65-00T-	3	49	8.3	6.0	11.8	5.9	0.80	0.75	0.0	0.0	6.51	82	146
27.50	DC6-48-60-18-8F	1	33	2.6	2.0	11.0	11.0	0.80	0.67	0.0	0.0	6.51	8	33
27.50	DC6-48-60-18-8F	2	33	2.6	2.0	11.0	11.0	0.80	0.67	0.0	0.0	6.51	15	66
27.50	DTMABP7819VG12A	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.0	6.51	7	58
27.50	EPBQ-654L8H6-L2	3	55	8.3	6.1	12.0	7.4	0.80	0.84	0.0	0.0	6.51	92	165
27.50	HPA-65R-BUU-H6	3	51	10.4	6.0	14.8	9.0	0.80	0.80	0.0	0.0	6.51	110	153
27.50	RRUS 4426-B66	3	59	1.6	1.3	13.2	7.3	0.80	0.67	0.0	0.0	6.51	15	178
27.50	RRUS 4478-B5	3	60	1.6	1.3	13.2	7.4	0.80	0.67	0.0	0.0	6.51	15	180
27.50	RRUS-11	3	51	3.3	1.6	17.0	8.0	0.80	0.67	0.0	0.0	6.51	29	153
27.50	RRUS-32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.0	6.51	24	159
27.50	RRUS-32 B30	3	77	3.9	2.5	13.3	9.5	0.80	0.67	0.0	0.0	6.51	34	231
27.50	Sector Frames	3	500	15.0	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.51	140	1500
	Totals	94	7225	430.4										

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	64.00	7/8" Coax	2	1.11	0.52	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	49.50	7/8" Coax	1	1.11	0.52	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	42.00	7/8" Coax	1	1.11	0.52	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	35.00	1 5/8" Coax	12	1.98	1.04	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	35.00	Hybrid Cable	3	1.63	1.78	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	27.50	1 5/8" Coax	6	1.98	1.04	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	27.50	3/8" DC	2	0.44	0.08	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	27.50	3/8" DC	4	0.44	0.08	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	27.50	5/16" Fiber	1	0.39	0.06	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	27.50	5/16" Fiber	2	0.39	0.06	0	Lin App	Individual	0.00	N	1.00	1.00	0.00

Section Forces

LoadCase 1.2D + 1.6W Normal — 97 mph Normal to Face with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	19.60	0.78	2.14	0.00	0.22	2.53	1.00	1.00	0.0	1.96	0.74	0.00	226	0	132	14	146	
3	50.00	18.78	1.56	8.44	0.00	0.19	2.63	1.00	1.00	0.0	6.17	4.76	0.00	829	0	415	88	502	
2	30.00	17.23	2.08	8.44	0.00	0.20	2.60	1.00	1.00	0.0	6.70	53.02	0.00	1256	0	408	895	1303	
1	10.00	15.23	2.08	8.44	0.00	0.20	2.60	1.00	1.00	0.0	6.70	81.30	0.00	1467	0	361	1212	1573	
														3777	0			3525	

LoadCase 1.2D + 1.6W 60 deg — 97 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	19.60	0.78	2.14	0.00	0.22	2.53	0.80	1.00	0.0	1.81	0.74	0.00	226	0	122	14	136	
3	50.00	18.78	1.56	8.44	0.00	0.19	2.63	0.80	1.00	0.0	5.85	4.76	0.00	829	0	394	88	481	
2	30.00	17.23	2.08	8.44	0.00	0.20	2.60	0.80	1.00	0.0	6.28	53.02	0.00	1256	0	383	895	1277	
1	10.00	15.23	2.08	8.44	0.00	0.20	2.60	0.80	1.00	0.0	6.29	81.30	0.00	1467	0	338	1212	1551	
														3777	0			3445	

LoadCase 1.2D + 1.6W 90 deg — 97 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	19.60	0.78	2.14	0.00	0.22	2.53	0.85	1.00	0.0	1.85	0.74	0.00	226	0	124	14	139	
3	50.00	18.78	1.56	8.44	0.00	0.19	2.63	0.85	1.00	0.0	5.93	4.76	0.00	829	0	399	88	486	
2	30.00	17.23	2.08	8.44	0.00	0.20	2.60	0.85	1.00	0.0	6.39	53.02	0.00	1256	0	389	895	1284	
1	10.00	15.23	2.08	8.44	0.00	0.20	2.60	0.85	1.00	0.0	6.39	81.30	0.00	1467	0	344	1212	1556	
														3777	0			3465	

LoadCase 1.2D + 1.0Di + 1.0Wi Normal — 50 mph Normal with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	5.21	0.78	11.29	8.71	0.83	1.84	1.00	1.00	1.7	10.52	0.74	2.21	679	453	86	3	88	
3	50.00	4.99	1.56	39.27	29.36	0.70	1.78	1.00	1.00	1.6	31.89	4.76	14.01	2426	1598	240	29	269	
2	30.00	4.58	2.08	39.74	29.81	0.72	1.78	1.00	1.00	1.6	33.29	53.02	110.24	5097	3841	230	214	445	
1	10.00	4.05	2.08	38.46	28.58	0.70	1.78	1.00	1.00	1.5	31.77	81.30	171.96	6430	4964	194	314	419	**
														14632	10855			1221	

** = Section Force Exceeds Solidity Ratio Criteria

Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg — 50 mph 60 degree with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor :** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	5.21	0.78	11.29	8.71	0.83	1.84	0.80	1.00	1.7	10.36	0.74	2.21	679	453	84	3	87	
3	50.00	4.99	1.56	39.27	29.36	0.70	1.78	0.80	1.00	1.6	31.57	4.76	14.01	2426	1598	238	29	266	
2	30.00	4.58	2.08	39.74	29.81	0.72	1.78	0.80	1.00	1.6	32.87	53.02	110.24	5097	3841	227	214	442	
1	10.00	4.05	2.08	38.46	28.58	0.70	1.78	0.80	1.00	1.5	31.35	81.30	171.96	6430	4964	192	314	419	**
														14632	10855			1214	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg — 50 mph 90 degree with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor :** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
4	62.50	5.21	0.78	11.29	8.71	0.83	1.84	0.85	1.00	1.7	10.40	0.74	2.21	679	453	85	3	87	
3	50.00	4.99	1.56	39.27	29.36	0.70	1.78	0.85	1.00	1.6	31.65	4.76	14.01	2426	1598	238	29	267	
2	30.00	4.58	2.08	39.74	29.81	0.72	1.78	0.85	1.00	1.6	32.98	53.02	110.24	5097	3841	228	214	443	
1	10.00	4.05	2.08	38.46	28.58	0.70	1.78	0.85	1.00	1.5	31.46	81.30	171.96	6430	4964	192	314	419	**
														14632	10855			1216	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service Normal — Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
4	62.50	7.50	0.78	2.14	0.00	0.22	2.53	1.00	1.00	0.0	1.96	0.74	0.00	188	0	32	3	35
3	50.00	7.18	1.56	8.44	0.00	0.19	2.63	1.00	1.00	0.0	6.17	4.76	0.00	690	0	99	21	120
2	30.00	6.59	2.08	8.44	0.00	0.20	2.60	1.00	1.00	0.0	6.70	53.02	0.00	1047	0	98	214	312
1	10.00	5.83	2.08	8.44	0.00	0.20	2.60	1.00	1.00	0.0	6.70	81.30	0.00	1222	0	86	290	376
														3148	0			843

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 60 deg — Serviceability - 60 mph Wind 60 degree

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.f)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
4	62.50	7.50	0.78	2.14	0.00	0.22	2.53	0.80	1.00	0.0	1.81	0.74	0.00	188	0	29	3	32
3	50.00	7.18	1.56	8.44	0.00	0.19	2.63	0.80	1.00	0.0	5.85	4.76	0.00	690	0	94	21	115
2	30.00	6.59	2.08	8.44	0.00	0.20	2.60	0.80	1.00	0.0	6.28	53.02	0.00	1047	0	92	214	305
1	10.00	5.83	2.08	8.44	0.00	0.20	2.60	0.80	1.00	0.0	6.29	81.30	0.00	1222	0	81	290	371
														3148	0			824

** = Section Force Exceeds Solidity Ratio Criteria

Section Forces

LoadCase 1.0D + 1.0W Service 90 deg **Serviceability - 60 mph Wind 90 degree**

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (s.i)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
4	62.50	7.50	0.78	2.14	0.00	0.22	2.53	0.85	1.00	0.0	1.85	0.74	0.00	188	0	30	3	33
3	50.00	7.18	1.56	8.44	0.00	0.19	2.63	0.85	1.00	0.0	5.93	4.76	0.00	690	0	95	21	116
2	30.00	6.59	2.08	8.44	0.00	0.20	2.60	0.85	1.00	0.0	6.39	53.02	0.00	1047	0	93	214	307
1	10.00	5.83	2.08	8.44	0.00	0.20	2.60	0.85	1.00	0.0	6.39	81.30	0.00	1222	0	82	290	372
														3148	0			829

** = Section Force Exceeds Solidity Ratio Criteria

Equivalent Lateral Force Method

(Based on ASCE7-10 Chapters 11, 12 & 15)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.08
Upper Limit C_s:	0.11
Lower Limit C_s:	0.03
Period based on Rayleigh Method (sec):	0.36
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.00
Total Unfactored Dead Load:	10.37 k
Seismic Base Shear (E):	1.08 k

LoadCase (1.2 + 0.2Sds) * DL + E **Seismic**

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
4	62.50	188	11,771	0.035	38	234
3	50.00	690	34,525	0.103	111	856
2	30.00	1,047	31,397	0.094	101	1,298
1	10.00	1,222	12,222	0.036	39	1,515
17 ft Omni	64.00	28	1,792	0.005	6	35
2 ft Standoff	64.00	30	1,920	0.006	6	37
20 ft Omni	64.00	50	3,200	0.010	10	62
3 ft Standoff	64.00	40	2,560	0.008	8	50
Torque Arm	54.25	500	27,125	0.081	87	620
2 ft Standoff	49.50	30	1,485	0.004	5	37
8 ft Omni	49.50	15	742	0.002	2	19
21 ft 8 Bay Dipole	42.00	50	2,100	0.006	7	62
3 ft Standoff	42.00	40	1,680	0.005	5	50
10" x 7" x 2" TMA	35.00	180	6,300	0.019	20	223
3JR52709AA	35.00	330	11,550	0.034	37	409
BXA-70080/8CF	35.00	276	9,660	0.029	31	342
OVP Junction Box	35.00	57	1,995	0.006	6	71
Platform w/Rail	35.00	2,000	70,000	0.209	225	2,480
RRH4x30-4T4R-B13	35.00	172	6,006	0.018	19	213
RRH4x30-4T4R-B25	35.00	153	5,355	0.016	17	190
RRUS A2 Module	35.00	254	8,887	0.027	29	315
AM-X-CD-16-65-00T-RET	27.50	146	4,001	0.012	13	180
DC6-48-60-18-8F	27.50	33	902	0.003	3	41
DC6-48-60-18-8F	27.50	66	1,804	0.005	6	81
DTMABP7819VG12A	27.50	58	1,582	0.005	5	71

Equivalent Lateral Force Method

EPBQ-654L8H6-L2	27.50	165	4,529	0.014	15	204
HPA-65R-BUU-H6	27.50	153	4,207	0.013	13	190
RRUS 4426-B66	27.50	178	4,901	0.015	16	221
RRUS 4478-B5	27.50	180	4,950	0.015	16	223
RRUS-11	27.50	153	4,207	0.013	13	190
RRUS-32 B2	27.50	159	4,372	0.013	14	197
RRUS-32 B30	27.50	231	6,353	0.019	20	286
Sector Frames	27.50	1,500	41,250	0.123	132	1,860
		10,372	335,332	1.000	1,076	12,861

LoadCase (0.9 - 0.2Sds) * DL + E **Seismic (Reduced DL)**

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
4	62.50	188	11,771	0.035	38	162
3	50.00	690	34,525	0.103	111	594
2	30.00	1,047	31,397	0.094	101	900
1	10.00	1,222	12,222	0.036	39	1,051
17 ft Omni	64.00	28	1,792	0.005	6	24
2 ft Standoff	64.00	30	1,920	0.006	6	26
20 ft Omni	64.00	50	3,200	0.010	10	43
3 ft Standoff	64.00	40	2,560	0.008	8	34
Torque Arm	54.25	500	27,125	0.081	87	430
2 ft Standoff	49.50	30	1,485	0.004	5	26
8 ft Omni	49.50	15	742	0.002	2	13
21 ft 8 Bay Dipole	42.00	50	2,100	0.006	7	43
3 ft Standoff	42.00	40	1,680	0.005	5	34
10" x 7" x 2" TMA	35.00	180	6,300	0.019	20	155
3JR52709AA	35.00	330	11,550	0.034	37	284
BXA-70080/8CF	35.00	276	9,660	0.029	31	237
OVP Junction Box	35.00	57	1,995	0.006	6	49
Platform w/Rail	35.00	2,000	70,000	0.209	225	1,720
RRH4x30-4T4R-B13	35.00	172	6,006	0.018	19	148
RRH4x30-4T4R-B25	35.00	153	5,355	0.016	17	132
RRUS A2 Module	35.00	254	8,887	0.027	29	218
AM-X-CD-16-65-00T-RET	27.50	146	4,001	0.012	13	125
DC6-48-60-18-8F	27.50	33	902	0.003	3	28
DC6-48-60-18-8F	27.50	66	1,804	0.005	6	56
DTMABP7819VG12A	27.50	58	1,582	0.005	5	49
EPBQ-654L8H6-L2	27.50	165	4,529	0.014	15	142
HPA-65R-BUU-H6	27.50	153	4,207	0.013	13	132
RRUS 4426-B66	27.50	178	4,901	0.015	16	153
RRUS 4478-B5	27.50	180	4,950	0.015	16	155
RRUS-11	27.50	153	4,207	0.013	13	132
RRUS-32 B2	27.50	159	4,372	0.013	14	137
RRUS-32 B30	27.50	231	6,353	0.019	20	199
Sector Frames	27.50	1,500	41,250	0.123	132	1,290
		10,372	335,332	1.000	1,076	8,921

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	0.36
Redundancy Factor (p):	1.30

LoadCase (1.2 + 0.2Sds) * DL + E **Seismic**

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
4	62.50	188	1.747	1.310	0.889	0.444	43	234
3	50.00	690	1.118	-0.059	0.198	0.193	69	856
2	30.00	1,047	0.403	0.017	0.006	0.083	45	1,298
1	10.00	1,222	0.045	0.071	0.042	0.023	14	1,515
17 ft Omni	64.00	28	1.832	1.689	1.034	0.493	7	35
2 ft Standoff	64.00	30	1.832	1.689	1.034	0.493	8	37
20 ft Omni	64.00	50	1.832	1.689	1.034	0.493	13	62
3 ft Standoff	64.00	40	1.832	1.689	1.034	0.493	10	50
Torque Arm	54.25	500	1.317	0.144	0.351	0.251	65	620
2 ft Standoff	49.50	30	1.096	-0.072	0.184	0.188	3	37
8 ft Omni	49.50	15	1.096	-0.072	0.184	0.188	1	19
21 ft 8 Bay Dipole	42.00	50	0.789	-0.110	0.051	0.132	3	62
3 ft Standoff	42.00	40	0.789	-0.110	0.051	0.132	3	50
10" x 7" x 2" TMA	35.00	180	0.548	-0.034	0.010	0.102	10	223
3JR52709AA	35.00	330	0.548	-0.034	0.010	0.102	18	409
BXA-70080/8CF	35.00	276	0.548	-0.034	0.010	0.102	15	342
OVP Junction Box	35.00	57	0.548	-0.034	0.010	0.102	3	71
Platform w/Rail	35.00	2,000	0.548	-0.034	0.010	0.102	106	2,480
RRH4x30-4T4R-B13	35.00	172	0.548	-0.034	0.010	0.102	9	213
RRH4x30-4T4R-B25	35.00	153	0.548	-0.034	0.010	0.102	8	190
RRUS A2 Module	35.00	254	0.548	-0.034	0.010	0.102	13	315
AM-X-CD-16-65-00T-RET	27.50	146	0.338	0.036	0.009	0.074	6	180
DC6-48-60-18-8F	27.50	33	0.338	0.036	0.009	0.074	1	41
DC6-48-60-18-8F	27.50	66	0.338	0.036	0.009	0.074	3	81
DTMABP7819VG12A	27.50	58	0.338	0.036	0.009	0.074	2	71
EPBQ-654L8H6-L2	27.50	165	0.338	0.036	0.009	0.074	6	204
HPA-65R-BUU-H6	27.50	153	0.338	0.036	0.009	0.074	6	190
RRUS 4426-B66	27.50	178	0.338	0.036	0.009	0.074	7	221
RRUS 4478-B5	27.50	180	0.338	0.036	0.009	0.074	7	223
RRUS-11	27.50	153	0.338	0.036	0.009	0.074	6	190
RRUS-32 B2	27.50	159	0.338	0.036	0.009	0.074	6	197
RRUS-32 B30	27.50	231	0.338	0.036	0.009	0.074	9	286
Sector Frames	27.50	1,500	0.338	0.036	0.009	0.074	58	1,860
		10,372	24.173	8.038	6.283	5.312	584	12,861

Equivalent Modal Analysis Method

LoadCase (0.9 - 0.2Sds) * DL + E **Seismic (Reduced DL)**

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
4	62.50	188	1.747	1.310	0.889	0.444	43	162
3	50.00	690	1.118	-0.059	0.198	0.193	69	594
2	30.00	1,047	0.403	0.017	0.006	0.083	45	900
1	10.00	1,222	0.045	0.071	0.042	0.023	14	1,051
17 ft Omni	64.00	28	1.832	1.689	1.034	0.493	7	24
2 ft Standoff	64.00	30	1.832	1.689	1.034	0.493	8	26
20 ft Omni	64.00	50	1.832	1.689	1.034	0.493	13	43
3 ft Standoff	64.00	40	1.832	1.689	1.034	0.493	10	34
Torque Arm	54.25	500	1.317	0.144	0.351	0.251	65	430
2 ft Standoff	49.50	30	1.096	-0.072	0.184	0.188	3	26
8 ft Omni	49.50	15	1.096	-0.072	0.184	0.188	1	13
21 ft 8 Bay Dipole	42.00	50	0.789	-0.110	0.051	0.132	3	43
3 ft Standoff	42.00	40	0.789	-0.110	0.051	0.132	3	34
10" x 7" x 2" TMA	35.00	180	0.548	-0.034	0.010	0.102	10	155
3JR52709AA	35.00	330	0.548	-0.034	0.010	0.102	18	284
BXA-70080/8CF	35.00	276	0.548	-0.034	0.010	0.102	15	237
OVP Junction Box	35.00	57	0.548	-0.034	0.010	0.102	3	49
Platform w/Rail	35.00	2,000	0.548	-0.034	0.010	0.102	106	1,720
RRH4x30-4T4R-B13	35.00	172	0.548	-0.034	0.010	0.102	9	148
RRH4x30-4T4R-B25	35.00	153	0.548	-0.034	0.010	0.102	8	132
RRUS A2 Module	35.00	254	0.548	-0.034	0.010	0.102	13	218
AM-X-CD-16-65-00T-RET	27.50	146	0.338	0.036	0.009	0.074	6	125
DC6-48-60-18-8F	27.50	33	0.338	0.036	0.009	0.074	1	28
DC6-48-60-18-8F	27.50	66	0.338	0.036	0.009	0.074	3	56
DTMABP7819VG12A	27.50	58	0.338	0.036	0.009	0.074	2	49
EPBQ-654L8H6-L2	27.50	165	0.338	0.036	0.009	0.074	6	142
HPA-65R-BUU-H6	27.50	153	0.338	0.036	0.009	0.074	6	132
RRUS 4426-B66	27.50	178	0.338	0.036	0.009	0.074	7	153
RRUS 4478-B5	27.50	180	0.338	0.036	0.009	0.074	7	155
RRUS-11	27.50	153	0.338	0.036	0.009	0.074	6	132
RRUS-32 B2	27.50	159	0.338	0.036	0.009	0.074	6	137
RRUS-32 B30	27.50	231	0.338	0.036	0.009	0.074	9	199
Sector Frames	27.50	1,500	0.338	0.036	0.009	0.074	58	1,290
		10,372	24.173	8.038	6.283	5.312	584	8,921

Force/Stress Summary

Section: 1 G30-TYP Bot Elev (ft): 0.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-34.57	1.2D + 1.6W	2.85	100	100	100	78.0	44.0	64.37	0	0	0.00	0.00	53	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SOL - 1/2" SOLID	-1.18	1.2D + 1.6W	3.788	48	48	48	174.5	36.0	1.46	0	0	0.00	0.00		Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	1.49	1.2D + 1.6W 60	44	60	95.25	0	0	0.00	0.00	1	Member
HORIZ SAE - 1.25x1.25x0.18	1.54	1.2D + 1.6W	36	58	14.06	0	0	0.00	0.00	10	Member
DIAG SOL - 1/2" SOLID	0.01	1.2D + 1.6W 60	36	58	6.36	0	0	0.00	0.00	0	Member

Section: 2 G30-TYP Bot Elev (ft): 20.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-31.70	1.2D + 1.6W	2.83	100	100	100	77.7	44.0	64.58	0	0	0.00	0.00	49	Member X
HORIZ SAE - 1.25x1.25x0.18	-4.10	1.2D + 1.6W 90	2.500	100	100	100	123.0	36.0	6.34	0	0	0.00	0.00	64	Member Z
DIAG SOL - 1/2" SOLID	-0.04	1.2D + 1.6W	3.779	48	48	48	174.1	36.0	1.46	0	0	0.00	0.00		Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	8.22	1.2D + 1.6W 60	44	60	95.25	0	0	0.00	0.00	8	Member
HORIZ SAE - 1.25x1.25x0.18	1.13	1.2D + 1.6W	36	58	14.06	0	0	0.00	0.00	8	Member
DIAG SOL - 1/2" SOLID	6.20	1.2D + 1.6W 90	36	58	6.36	0	0	0.00	0.00	97	Member

Section: 3 G30-TYP Bot Elev (ft): 40.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-17.81	1.2D + 1.6W 60	2.83	100	100	100	77.7	44.0	64.58	0	0	0.00	0.00	27	Member X
HORIZ SAE - 1.25x1.25x0.18	-1.61	1.2D + 1.6W 60	2.500	100	100	100	123.0	36.0	6.34	0	0	0.00	0.00	25	Member Z
DIAG SOL - 1/2" SOLID	-0.12	1.2D + 1.6W	3.779	48	48	48	174.1	36.0	1.46	0	0	0.00	0.00		Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	3.90	1.2D + 1.6W 90	44	60	95.25	0	0	0.00	0.00	4	Member
HORIZ SAE - 1.25x1.25x0.18	1.34	1.2D + 1.6W	36	58	14.06	0	0	0.00	0.00	9	Member
DIAG SOL - 1/2" SOLID	2.14	1.2D + 1.6W 60	36	58	6.36	0	0	0.00	0.00	33	Member

Force/Stress Summary

Section: 4 G30-5ft Bot Elev (ft): 60.00 Height (ft): 5.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-2.37	1.2D + 1.6W	2.46	100	100	100	67.4	44.0	71.09	0	0	0.00	0.00	3	Member X
HORIZ SAE - 1.25x1.25x0.18	-0.36	1.2D + 1.6W	2.500	100	100	100	123.0	36.0	6.34	0	0	0.00	0.00	5	Member Z
DIAG SOL - 1/2" SOLID	-0.12	1.2D + 1.6W	3.506	48	48	48	161.6	36.0	1.70	0	0	0.00	0.00		Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	1.03	1.2D + 1.6W	44	60	95.25	0	0	0.00	0.00	1	Member
HORIZ SAE - 1.25x1.25x0.18	0.48	1.2D + 1.6W 90	36	58	14.06	0	0	0.00	0.00	3	Member
DIAG SOL - 1/2" SOLID	1.08	1.2D + 1.6W	36	58	6.36	0	0	0.00	0.00	17	Member

Support Forces Summary

Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
(0.9 - 0.2Sds) * DL + E 60 deg M1	A1b	4.17	-8.45	-2.41	
	A1a	-5.05	-10.20	-2.92	
	A1	0.00	-8.45	4.82	
	1b	0.45	10.68	0.26	
	1a	-0.47	12.77	0.28	
	1	0.01	12.77	-0.55	
(0.9 - 0.2Sds) * DL + E 60 deg M2	A1b	4.30	-8.68	-2.48	
	A1a	-4.80	-9.74	-2.77	
	A1	0.00	-8.68	4.96	
	1b	0.47	11.40	0.27	
	1a	-0.46	12.41	0.28	
	1	0.01	12.41	-0.53	
(0.9 - 0.2Sds) * DL + E 90 deg M1	A1b	3.94	-8.00	-2.28	
	A1a	-4.99	-10.08	-2.88	
	A1	0.00	-9.04	5.15	
	1b	0.45	10.86	0.25	
	1a	-0.47	13.29	0.28	
	1	0.02	12.08	-0.54	
(0.9 - 0.2Sds) * DL + E 90 deg M2	A1b	4.18	-8.43	-2.41	
	A1a	-4.75	-9.65	-2.74	
	A1	0.00	-9.04	5.15	
	1b	0.47	11.49	0.26	
	1a	-0.46	12.66	0.27	
	1	0.01	12.08	-0.54	
(0.9 - 0.2Sds) * DL + E Normal M1	A1b	4.76	-9.64	-2.75	
	A1a	-4.76	-9.64	-2.75	
	A1	0.00	-7.84	4.46	
	1b	0.45	11.37	0.27	
	1a	-0.45	11.37	0.27	
	1	0.00	13.48	-0.55	
(0.9 - 0.2Sds) * DL + E Normal M2	A1b	4.63	-9.39	-2.67	
	A1a	-4.63	-9.39	-2.67	
	A1	0.00	-8.33	4.77	
	1b	0.46	11.74	0.28	
	1a	-0.46	11.74	0.28	
	1	0.00	12.75	-0.53	
(1.2 + 0.2Sds) * DL + E 60 deg M1	A1b	4.10	-8.32	-2.37	
	A1a	-4.99	-10.08	-2.88	
	A1	0.00	-8.32	4.74	
	1b	0.49	11.85	0.28	
	1a	-0.51	13.94	0.31	
	1	0.01	13.94	-0.60	
(1.2 + 0.2Sds) * DL + E 60 deg M2	A1b	4.23	-8.55	-2.45	
	A1a	-4.73	-9.61	-2.73	
	A1	0.00	-8.55	4.89	
	1b	0.51	12.57	0.30	
	1a	-0.50	13.58	0.30	
	1	0.01	13.58	-0.59	
(1.2 + 0.2Sds) * DL + E 90 deg M1	A1b	3.88	-7.87	-2.24	
	A1a	-4.92	-9.95	-2.84	
	A1	0.00	-8.91	5.08	
	1b	0.50	12.03	0.28	
	1a	-0.52	14.46	0.31	

	1	0.02	13.24	-0.59
(1.2 + 0.2Sds) * DL + E 90 deg M2	A1b	4.11	-8.30	-2.37
	A1a	-4.69	-9.52	-2.71
	A1	0.00	-8.91	5.08
	1b	0.51	12.66	0.29
	1a	-0.50	13.83	0.30
	1	0.01	13.24	-0.59
(1.2 + 0.2Sds) * DL + E Normal M1	A1b	4.70	-9.51	-2.72
	A1a	-4.70	-9.51	-2.72
	A1	0.00	-7.71	4.39
	1b	0.49	12.54	0.30
	1a	-0.49	12.54	0.30
	1	0.00	14.65	-0.61
(1.2 + 0.2Sds) * DL + E Normal M2	A1b	4.57	-9.26	-2.64
	A1a	-4.57	-9.26	-2.64
	A1	0.00	-8.20	4.70
	1b	0.50	12.90	0.30
	1a	-0.50	12.90	0.30
	1	0.00	13.92	-0.58
1.0D + 1.0W Service 60 deg	A1b	3.78	-7.82	-2.21
	A1a	-5.77	-11.50	-3.33
	A1	-0.03	-7.67	4.35
	1b	0.36	9.03	0.22
	1a	-0.55	14.40	0.32
	1	0.00	14.24	-0.61
1.0D + 1.0W Service 90 deg	A1b	3.29	-6.86	-1.92
	A1a	-5.59	-11.13	-3.21
	A1	-0.03	-9.00	5.13
	1b	0.36	9.46	0.22
	1a	-0.60	15.65	0.33
	1	0.00	12.56	-0.56
1.0D + 1.0W Service Normal	A1b	5.11	-10.33	-2.98
	A1a	-5.11	-10.33	-2.98
	A1	0.00	-6.32	3.55
	1b	0.43	10.87	0.25
	1a	-0.43	10.86	0.25
	1	0.00	15.94	-0.67
1.2D + 1.0Di + 1.0Wi 60 deg	A1b	3.83	-7.55	-2.32
	A1a	-6.53	-12.71	-3.77
	A1	-0.10	-7.42	4.44
	1b	0.53	17.74	0.31
	1a	-0.67	23.81	0.40
	1	0.02	23.68	-0.76
1.2D + 1.0Di + 1.0Wi 90 deg	A1b	3.20	-6.20	-1.91
	A1a	-6.29	-12.18	-3.57
	A1	-0.11	-9.21	5.47
	1b	0.53	18.21	0.31
	1a	-0.71	25.17	0.42
	1	0.01	21.76	-0.71
1.2D + 1.0Di + 1.0Wi Normal	A1b	5.58	-10.96	-3.33
	A1a	-5.58	-10.98	-3.33
	A1	0.00	-5.51	3.41
	1b	0.57	19.78	0.34
	1a	-0.57	19.76	0.34
	1	0.00	25.47	-0.82
1.2D + 1.6W 60 deg	A1b	1.81	-4.43	-1.17
	A1a	-10.21	-20.02	-5.90
	A1	-0.11	-3.80	1.96

	1b	-0.01	-1.32	0.06
	1a	-0.85	21.48	0.46
	1	0.02	20.85	-0.82
1.2D + 1.6W 90 deg	A1b	0.44	-1.51	-0.32
	A1a	-9.89	-19.22	-5.61
	A1	-0.14	-10.19	5.78
	1b	-0.02	-0.14	0.04
	1a	-1.19	30.90	0.65
	1	-0.01	12.91	-0.55
1.2D + 1.6W Normal	A1b	8.42	-17.16	-5.02
	A1a	-8.42	-17.16	-5.03
	A1	0.00	-0.85	0.23
	1b	0.29	5.76	0.19
	1a	-0.28	5.76	0.20
	1	-0.01	36.41	-1.42

Max Reactions

	Base	DL + WL	DL + WL + IL	Anch1
Vertical (kip)	36.41	47.93	65.14	-20.02
Horizontal (kip)	1.42	1.03	0.17	11.79
Moment (kip-ft)		44.24	8.70	

Cable Forces Summary

Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kip)	Applied Tension (kip)	Use %
1.2D + 1.6W Normal	20.00	3/4 EHS	A1	9	34.98	0.06	0
		3/4 EHS	A1b	9a	34.98	9.49	27
		3/4 EHS	A1a	9b	34.98	9.50	27
	54.25	9/16 EHS	A1	T2	20.22	0.46	2
		9/16 EHS	A1a	T2b	20.22	5.60	27
		9/16 EHS	A1b	T2a	20.22	5.24	25
		9/16 EHS	A1b	T2	20.22	5.56	27
		9/16 EHS	A1a	T2a	20.22	5.19	25
		9/16 EHS	A1	T2b	20.22	0.46	2
1.2D + 1.6W 60 deg	20.00	3/4 EHS	A1	9	34.98	1.74	4
		3/4 EHS	A1b	9a	34.98	1.68	4
		3/4 EHS	A1a	9b	34.98	11.80	33
	54.25	9/16 EHS	A1	T2	20.22	1.59	7
		9/16 EHS	A1a	T2b	20.22	6.02	29
		9/16 EHS	A1b	T2a	20.22	1.52	7
		9/16 EHS	A1b	T2	20.22	1.92	9
		9/16 EHS	A1a	T2a	20.22	6.01	29
		9/16 EHS	A1	T2b	20.22	1.15	5
1.2D + 1.6W 90 deg	20.00	3/4 EHS	A1	9	34.98	5.60	16
		3/4 EHS	A1b	9a	34.98	0.24	0
		3/4 EHS	A1a	9b	34.98	11.48	32
	54.25	9/16 EHS	A1	T2	20.22	3.48	17
		9/16 EHS	A1a	T2b	20.22	5.47	27
		9/16 EHS	A1b	T2a	20.22	0.66	3
		9/16 EHS	A1b	T2	20.22	0.81	4
		9/16 EHS	A1a	T2a	20.22	5.95	29
		9/16 EHS	A1	T2b	20.22	2.98	14
1.2D + 1.0Di + 1.0Wi Normal	20.00	3/4 EHS	A1	9	34.98	3.71	10
		3/4 EHS	A1b	9a	34.98	6.39	18
		3/4 EHS	A1a	9b	34.98	6.39	18
	54.25	9/16 EHS	A1	T2	20.22	1.76	8
		9/16 EHS	A1a	T2b	20.22	3.68	18
		9/16 EHS	A1b	T2a	20.22	3.56	17
		9/16 EHS	A1b	T2	20.22	3.68	18
		9/16 EHS	A1a	T2a	20.22	3.58	17
		9/16 EHS	A1	T2b	20.22	1.78	8
1.2D + 1.0Di + 1.0Wi 60 deg	20.00	3/4 EHS	A1	9	34.98	4.56	13
		3/4 EHS	A1b	9a	34.98	4.54	12
		3/4 EHS	A1a	9b	34.98	7.37	21
	54.25	9/16 EHS	A1	T2	20.22	2.53	12
		9/16 EHS	A1a	T2b	20.22	4.16	20
		9/16 EHS	A1b	T2a	20.22	2.45	12
		9/16 EHS	A1b	T2	20.22	2.61	12
		9/16 EHS	A1a	T2a	20.22	4.18	20
		9/16 EHS	A1	T2b	20.22	2.37	11
1.2D + 1.0Di + 1.0Wi 90 deg	20.00	3/4 EHS	A1	9	34.98	5.46	15
		3/4 EHS	A1b	9a	34.98	3.90	11
		3/4 EHS	A1a	9b	34.98	7.11	20
	54.25	9/16 EHS	A1	T2	20.22	3.13	15
		9/16 EHS	A1a	T2b	20.22	3.95	19

		9/16 EHS	A1b	T2a	20.22	2.00	9
		9/16 EHS	A1b	T2	20.22	2.12	10
		9/16 EHS	A1a	T2a	20.22	4.02	19
		9/16 EHS	A1	T2b	20.22	2.96	14
(1.2 + 0.2Sds) * DL + E Normal M1	20.00	3/4 EHS	A1	9	34.98	4.28	12
		3/4 EHS	A1b	9a	34.98	5.32	15
		3/4 EHS	A1a	9b	34.98	5.32	15
	54.25	9/16 EHS	A1	T2	20.22	2.44	12
		9/16 EHS	A1a	T2b	20.22	3.00	14
		9/16 EHS	A1b	T2a	20.22	2.96	14
		9/16 EHS	A1b	T2	20.22	3.00	14
		9/16 EHS	A1a	T2a	20.22	2.96	14
		9/16 EHS	A1	T2b	20.22	2.44	12
(1.2 + 0.2Sds) * DL + E Normal M2	20.00	3/4 EHS	A1	9	34.98	4.62	13
		3/4 EHS	A1b	9a	34.98	5.15	14
		3/4 EHS	A1a	9b	34.98	5.15	14
	54.25	9/16 EHS	A1	T2	20.22	2.57	12
		9/16 EHS	A1a	T2b	20.22	2.92	14
		9/16 EHS	A1b	T2a	20.22	2.91	14
		9/16 EHS	A1b	T2	20.22	2.92	14
		9/16 EHS	A1a	T2a	20.22	2.91	14
		9/16 EHS	A1	T2b	20.22	2.57	12
(1.2 + 0.2Sds) * DL + E 60 deg M1	20.00	3/4 EHS	A1	9	34.98	4.63	13
		3/4 EHS	A1b	9a	34.98	4.63	13
		3/4 EHS	A1a	9b	34.98	5.65	16
	54.25	9/16 EHS	A1	T2	20.22	2.65	13
		9/16 EHS	A1a	T2b	20.22	3.15	15
		9/16 EHS	A1b	T2a	20.22	2.61	12
		9/16 EHS	A1b	T2	20.22	2.65	13
		9/16 EHS	A1a	T2a	20.22	3.15	15
		9/16 EHS	A1	T2b	20.22	2.61	12
(1.2 + 0.2Sds) * DL + E 60 deg M2	20.00	3/4 EHS	A1	9	34.98	4.79	13
		3/4 EHS	A1b	9a	34.98	4.79	13
		3/4 EHS	A1a	9b	34.98	5.32	15
	54.25	9/16 EHS	A1	T2	20.22	2.69	13
		9/16 EHS	A1a	T2b	20.22	3.03	15
		9/16 EHS	A1b	T2a	20.22	2.68	13
		9/16 EHS	A1b	T2	20.22	2.69	13
		9/16 EHS	A1a	T2a	20.22	3.03	15
		9/16 EHS	A1	T2b	20.22	2.68	13
(1.2 + 0.2Sds) * DL + E 90 deg M1	20.00	3/4 EHS	A1	9	34.98	4.97	14
		3/4 EHS	A1b	9a	34.98	4.37	12
		3/4 EHS	A1a	9b	34.98	5.57	15
	54.25	9/16 EHS	A1	T2	20.22	2.82	13
		9/16 EHS	A1a	T2b	20.22	3.10	15
		9/16 EHS	A1b	T2a	20.22	2.48	12
		9/16 EHS	A1b	T2	20.22	2.50	12
		9/16 EHS	A1a	T2a	20.22	3.13	15
		9/16 EHS	A1	T2b	20.22	2.78	13
(1.2 + 0.2Sds) * DL + E 90 deg M2	20.00	3/4 EHS	A1	9	34.98	4.97	14
		3/4 EHS	A1b	9a	34.98	4.66	13
		3/4 EHS	A1a	9b	34.98	5.28	15
	54.25	9/16 EHS	A1	T2	20.22	2.81	13
		9/16 EHS	A1a	T2b	20.22	3.00	14
		9/16 EHS	A1b	T2a	20.22	2.60	12
		9/16 EHS	A1b	T2	20.22	2.60	12

		9/16 EHS	A1a	T2a	20.22	3.01	14
		9/16 EHS	A1	T2b	20.22	2.80	13
(0.9 - 0.2Sds) * DL + E Normal M1	20.00	3/4 EHS	A1	9	34.98	4.35	12
		3/4 EHS	A1b	9a	34.98	5.39	15
		3/4 EHS	A1a	9b	34.98	5.39	15
	54.25	9/16 EHS	A1	T2	20.22	2.48	12
		9/16 EHS	A1a	T2b	20.22	3.04	15
		9/16 EHS	A1b	T2a	20.22	3.00	14
		9/16 EHS	A1b	T2	20.22	3.04	15
		9/16 EHS	A1a	T2a	20.22	3.00	14
		9/16 EHS	A1	T2b	20.22	2.48	12
(0.9 - 0.2Sds) * DL + E Normal M2	20.00	3/4 EHS	A1	9	34.98	4.69	13
		3/4 EHS	A1b	9a	34.98	5.22	14
		3/4 EHS	A1a	9b	34.98	5.22	14
	54.25	9/16 EHS	A1	T2	20.22	2.61	12
		9/16 EHS	A1a	T2b	20.22	2.96	14
		9/16 EHS	A1b	T2a	20.22	2.95	14
		9/16 EHS	A1b	T2	20.22	2.96	14
		9/16 EHS	A1a	T2a	20.22	2.95	14
		9/16 EHS	A1	T2b	20.22	2.61	12
(0.9 - 0.2Sds) * DL + E 60 deg M1	20.00	3/4 EHS	A1	9	34.98	4.70	13
		3/4 EHS	A1b	9a	34.98	4.70	13
		3/4 EHS	A1a	9b	34.98	5.73	16
	54.25	9/16 EHS	A1	T2	20.22	2.69	13
		9/16 EHS	A1a	T2b	20.22	3.19	15
		9/16 EHS	A1b	T2a	20.22	2.65	13
		9/16 EHS	A1b	T2	20.22	2.69	13
		9/16 EHS	A1a	T2a	20.22	3.19	15
		9/16 EHS	A1	T2b	20.22	2.65	13
(0.9 - 0.2Sds) * DL + E 60 deg M2	20.00	3/4 EHS	A1	9	34.98	4.87	13
		3/4 EHS	A1b	9a	34.98	4.87	13
		3/4 EHS	A1a	9b	34.98	5.40	15
	54.25	9/16 EHS	A1	T2	20.22	2.73	13
		9/16 EHS	A1a	T2b	20.22	3.07	15
		9/16 EHS	A1b	T2a	20.22	2.72	13
		9/16 EHS	A1b	T2	20.22	2.73	13
		9/16 EHS	A1a	T2a	20.22	3.07	15
		9/16 EHS	A1	T2b	20.22	2.72	13
(0.9 - 0.2Sds) * DL + E 90 deg M1	20.00	3/4 EHS	A1	9	34.98	5.04	14
		3/4 EHS	A1b	9a	34.98	4.45	12
		3/4 EHS	A1a	9b	34.98	5.64	16
	54.25	9/16 EHS	A1	T2	20.22	2.86	14
		9/16 EHS	A1a	T2b	20.22	3.14	15
		9/16 EHS	A1b	T2a	20.22	2.52	12
		9/16 EHS	A1b	T2	20.22	2.54	12
		9/16 EHS	A1a	T2a	20.22	3.17	15
		9/16 EHS	A1	T2b	20.22	2.82	13
(0.9 - 0.2Sds) * DL + E 90 deg M2	20.00	3/4 EHS	A1	9	34.98	5.04	14
		3/4 EHS	A1b	9a	34.98	4.74	13
		3/4 EHS	A1a	9b	34.98	5.35	15
	54.25	9/16 EHS	A1	T2	20.22	2.85	14
		9/16 EHS	A1a	T2b	20.22	3.04	15
		9/16 EHS	A1b	T2a	20.22	2.64	13
		9/16 EHS	A1b	T2	20.22	2.64	13
		9/16 EHS	A1a	T2a	20.22	3.05	15
		9/16 EHS	A1	T2b	20.22	2.84	14

1.0D + 1.0W Service Normal	**20.00**	**3/4 EHS**	**A1**	**9**	**34.98**	**3.44**	**9**
		3/4 EHS	**A1b**	**9a**	**34.98**	**5.81**	**16**
		3/4 EHS	**A1a**	**9b**	**34.98**	**5.80**	**16**
	54.25	**9/16 EHS**	**A1**	**T2**	**20.22**	**2.03**	**10**
		9/16 EHS	**A1a**	**T2b**	**20.22**	**3.28**	**16**
		9/16 EHS	**A1b**	**T2a**	**20.22**	**3.18**	**15**
		9/16 EHS	**A1b**	**T2**	**20.22**	**3.27**	**16**
		9/16 EHS	**A1a**	**T2a**	**20.22**	**3.18**	**15**
		9/16 EHS	**A1**	**T2b**	**20.22**	**2.03**	**10**
1.0D + 1.0W Service 60 deg	**20.00**	**3/4 EHS**	**A1**	**9**	**34.98**	**4.23**	**12**
		3/4 EHS	**A1b**	**9a**	**34.98**	**4.20**	**12**
		3/4 EHS	**A1a**	**9b**	**34.98**	**6.62**	**18**
	54.25	**9/16 EHS**	**A1**	**T2**	**20.22**	**2.50**	**12**
		9/16 EHS	**A1a**	**T2b**	**20.22**	**3.52**	**17**
		9/16 EHS	**A1b**	**T2a**	**20.22**	**2.47**	**12**
		9/16 EHS	**A1b**	**T2**	**20.22**	**2.58**	**12**
		9/16 EHS	**A1a**	**T2a**	**20.22**	**3.54**	**17**
		9/16 EHS	**A1**	**T2b**	**20.22**	**2.38**	**11**
1.0D + 1.0W Service 90 deg	**20.00**	**3/4 EHS**	**A1**	**9**	**34.98**	**5.02**	**14**
		3/4 EHS	**A1b**	**9a**	**34.98**	**3.62**	**10**
		3/4 EHS	**A1a**	**9b**	**34.98**	**6.41**	**18**
	54.25	**9/16 EHS**	**A1**	**T2**	**20.22**	**2.90**	**14**
		9/16 EHS	**A1a**	**T2b**	**20.22**	**3.37**	**16**
		9/16 EHS	**A1b**	**T2a**	**20.22**	**2.21**	**10**
		9/16 EHS	**A1b**	**T2**	**20.22**	**2.29**	**11**
		9/16 EHS	**A1a**	**T2a**	**20.22**	**3.45**	**17**
		9/16 EHS	**A1**	**T2b**	**20.22**	**2.77**	**13**

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
50 mph 60 degree with 0.75 in Radial Ice	28.58	0.0180	-0.0056	0.0664
	34.25	0.0242	-0.0066	0.0743
	42.92	0.0313	-0.0062	0.1249
	48.58	0.0346	-0.0050	0.0319
	54.25	0.0379	-0.0042	0.0351
	65.00	0.0454	-0.0068	0.2226
50 mph 90 degree with 0.75 in Radial Ice	28.58	0.0175	-0.0020	0.0603
	34.25	0.0233	-0.0024	0.0298
	42.92	0.0295	-0.0021	0.0987
	48.58	0.0319	0.0020	0.0095
	54.25	0.0347	0.0050	0.0275
	65.00	0.0408	0.0103	0.2090
50 mph Normal with 0.75 in Radial Ice	28.58	0.0170	-0.0016	0.0694
	34.25	0.0231	-0.0019	0.1348
	42.92	0.0298	-0.0006	0.1720
	48.58	0.0332	-0.0041	0.0505
	54.25	0.0359	-0.0075	0.0349
	65.00	0.0442	-0.0204	0.2922
97 mph 60 degree with No Ice	28.58	0.0747	-0.0505	0.2791
	34.25	0.0982	-0.0647	0.3502
	42.92	0.1110	-0.0236	0.9678
	48.58	0.1144	0.0277	0.0742
	54.25	0.1187	0.0291	0.0471
	65.00	0.1291	0.0218	0.6617
97 mph 90 degree with No Ice	28.58	0.0826	-0.0178	0.2812
	34.25	0.1070	-0.1073	0.2252
	42.92	0.1235	-0.1025	0.8242
	48.58	0.1294	-0.0807	0.0243
	54.25	0.1343	-0.0707	0.0592
	65.00	0.1463	-0.0582	0.6181
97 mph Normal to Face with No Ice	28.58	0.0950	0.0219	0.3778
	34.25	0.1278	0.0225	0.6630
	42.92	0.1603	0.0367	1.1158
	48.58	0.1754	0.0311	0.2240
	54.25	0.1910	0.0190	0.1683
	65.00	0.2259	-0.0174	0.8896
Seismic (Reduced DL) 60 degree M1	28.58	0.0062	0.0001	0.0231
	34.25	0.0084	0.0001	0.0198
	42.92	0.0107	0.0000	0.0111
	48.58	0.0117	-0.0001	0.0080
	54.25	0.0124	0.0000	0.0087
	65.00	0.0143	0.0000	0.0099
Seismic (Reduced DL) 60 degree M2	28.58	0.0034	0.0000	0.0137
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0092
	48.58	0.0073	0.0000	0.0082
	54.25	0.0081	0.0000	0.0089
	65.00	0.0100	0.0000	0.0100
Seismic (Reduced DL) 90 degree M1	28.58	0.0063	0.0001	0.0237
	34.25	0.0086	0.0001	0.0205
	42.92	0.0110	-0.0001	0.0118

	48.58	0.0120	0.0000	0.0086
	54.25	0.0128	0.0000	0.0095
	65.00	0.0149	0.0000	0.0108
Seismic (Reduced DL) 90 degree M2	28.58	0.0034	0.0000	0.0138
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0093
	48.58	0.0073	0.0000	0.0080
	54.25	0.0081	0.0000	0.0090
	65.00	0.0100	0.0000	0.0100
Seismic (Reduced DL) Normal M1	28.58	0.0064	0.0001	0.0237
	34.25	0.0086	0.0001	0.0204
	42.92	0.0110	0.0001	0.0119
	48.58	0.0120	-0.0001	0.0090
	54.25	0.0128	0.0000	0.0095
	65.00	0.0149	0.0000	0.0108
Seismic (Reduced DL) Normal M2	28.58	0.0034	0.0000	0.0138
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0094
	48.58	0.0073	0.0000	0.0084
	54.25	0.0081	0.0000	0.0090
	65.00	0.0100	0.0000	0.0101
Seismic 60 degree M1	28.58	0.0062	0.0001	0.0231
	34.25	0.0084	0.0001	0.0198
	42.92	0.0107	0.0000	0.0111
	48.58	0.0117	-0.0001	0.0080
	54.25	0.0124	0.0000	0.0087
	65.00	0.0143	0.0000	0.0099
Seismic 60 degree M2	28.58	0.0034	0.0000	0.0138
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0092
	48.58	0.0073	0.0000	0.0082
	54.25	0.0081	0.0000	0.0089
	65.00	0.0100	0.0000	0.0100
Seismic 90 degree M1	28.58	0.0064	0.0001	0.0238
	34.25	0.0086	0.0001	0.0205
	42.92	0.0110	-0.0001	0.0118
	48.58	0.0121	0.0000	0.0086
	54.25	0.0128	0.0000	0.0095
	65.00	0.0149	0.0000	0.0108
Seismic 90 degree M2	28.58	0.0034	0.0000	0.0138
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0093
	48.58	0.0073	0.0000	0.0081
	54.25	0.0081	0.0000	0.0090
	65.00	0.0100	0.0000	0.0100
Seismic Normal M1	28.58	0.0064	0.0001	0.0237
	34.25	0.0086	0.0001	0.0205
	42.92	0.0110	0.0001	0.0119
	48.58	0.0120	-0.0001	0.0090
	54.25	0.0128	0.0000	0.0095
	65.00	0.0149	0.0000	0.0108
Seismic Normal M2	28.58	0.0034	0.0000	0.0138
	34.25	0.0047	0.0000	0.0129
	42.92	0.0064	0.0000	0.0094
	48.58	0.0073	0.0000	0.0084
	54.25	0.0081	0.0000	0.0090
	65.00	0.0100	0.0000	0.0101

Serviceability - 60 mph Wind 60 degree	**28.58**	**0.0146**	**-0.0054**	**0.0493**
	34.25	**0.0191**	**-0.0064**	**0.0825**
	42.92	**0.0227**	**-0.0048**	**0.2186**
	48.58	**0.0241**	**-0.0015**	**0.0168**
	54.25	**0.0250**	**-0.0010**	**0.0124**
	65.00	**0.0280**	**-0.0031**	**0.1562**
Serviceability - 60 mph Wind 90 degree	**28.58**	**0.0146**	**-0.0075**	**0.0456**
	34.25	**0.0189**	**-0.0090**	**0.0590**
	42.92	**0.0223**	**-0.0096**	**0.2012**
	48.58	**0.0234**	**-0.0050**	**0.0049**
	54.25	**0.0240**	**-0.0027**	**0.0091**
	65.00	**0.0261**	**0.0000**	**0.1515**
Serviceability - 60 mph Wind Normal	**28.58**	**0.0146**	**0.0026**	**0.0591**
	34.25	**0.0195**	**0.0033**	**0.1346**
	42.92	**0.0245**	**0.0072**	**0.2476**
	48.58	**0.0263**	**0.0059**	**0.0341**
	54.25	**0.0280**	**0.0030**	**0.0207**
	65.00	**0.0327**	**-0.0055**	**0.1932**

June 5, 2018

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT2040 (LTE 3C)
	FA Number:	10035317
	PACE Number:	MRCTB030965
	PT Number:	2051A0GGN0
	Site Name:	Hamden Benham St.
	Site Address:	265 Benham Street Hamden, CT 06514

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 mounts to determine their capability of supporting the following additional loading:

- (3) AM-X-CD-16-65-00T-RET Antennas (72"x11.8"x5.9" – Wt. = 49 lbs. /each)
- (3) HPA-65R-BUU-H6 Antennas (72.0"x14.8"x9.0" – Wt. = 51 lbs. /each)
- (3) RRUS-11 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) DTMABP 7819 BG12A TMA's (10.6"x11.0"x3.8" – Wt. = 20 lbs./ each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(3) EPBQ-654L8H6-L2 Antennas (73"x21"x6.3" – Wt. = 73 lbs./ each)**
- **(3) 4478 B5 RRH's (18.1"x13.4"x8.3"– Wt. = 60 lbs. /each)**
- **(3) 4426 B66 RRH's (15"x13.2"x7.4" – Wt. = 49 lbs. /each)**
- **(3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)**
- **(2) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. A mount mapping of the existing AT&T antenna mounts was provided by Centek Engineering on September 20, 2016.

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 115 mph with a max basic wind speed with ice of 50 mph. Per the AT&T Mount Technical Directive and Appendix N of the Connecticut State Building Code, an ultimate wind speed of 125 mph converted to a nominal wind speed of 97 mph was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 3; tower is located at the upper half of a hill.
- 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 mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing 3C Mount Rating	1	LC2	93%	**PASS**

Reference Documents:

- Mount mapping data provided by Centek Engineering.

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

Michael Cabral
Structural Dept. Head

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK **Checked By**: MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z=	55 (ft)
z_g=	1200 (ft)
α=	7.0
K_z=	**0.833**

$K_{zmin} \leq K_z \leq 2.01$

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}=	**1.646667778**
K_h=	1.6841702
K_e=	0.9 (from Table 2-4)
K_t=	0.53 (from Table 2-5)
f=	2 (from Table 2-5)
z=	55
H=	211 (Ht. of the crest above surrounding terrain)
K_{zt}=	1.65
K_{iz} =	1.05 (from Sec. 2.6.8)

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

Category=	3

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} = 2.51 in

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

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=	94	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} = 125 mph

Nomial Design Wind Speed, $V_{asd} = V_{ult}\sqrt{(0.6)}$ V_{asd} = 97 mph

V_{asd} per the AT&T Mount Technical Directive and Connecticut State Building Code, Latest Edition.
Per TIA-222-G, V_{min} = 95 mph V_{max} = 115 mph

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

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

		K_z=	0.833
		K_{zt}=	1.7
q_z=	**28.04**	K_d=	0.85
$q_{z\,(ice)}$=	**7.48**	V_{asd}=	97 mph
$q_{z\,(30)}$=	**2.69**	$V_{max\,(ice)}$=	50 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

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

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 = **2.51** 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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.86	1.31	**271**	**103**	**26**
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.48	1.24	**371**	**131**	**36**
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	6.10	1.36	**225**	**91**	**22**
RRUS-11 RRH	19.7	17.0	7.2	2.33	1.16	1.20	**78**	**34**	**8**
RRUS-11 RRH (Shielded)	19.7	5.2	7.2	0.71	3.79	1.26	**25**	**16**	**2**
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**77**	**34**	**7**
RRUS-32 RRH (Shielded)	27.2	0.3	7.0	0.06	90.67	4.19	**7**	**37**	**1**
4426 B66 RRH	15.0	13.2	7.4	1.38	1.14	1.20	**46**	**23**	**4**
4426 B66 RRH (Shielded)	15.0	1.4	7.4	0.15	10.71	1.52	**6**	**10**	**1**
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**57**	**27**	**5**
B14 4478 RRH (Shielded)	18.1	1.6	8.3	0.20	11.31	1.54	**9**	**12**	**1**
3x3 Angle	3.0	12.0		0.25	0.25	1.20	**8**	**8**	**1**
2" Pipe	2.4	12.0		0.20	0.20	2.00	**11**	**13**	**1**

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	2.51	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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	271	181	248
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	371	139	313
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	225	130	201
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	78	33	67
RRUS-11 RRH (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	39	33	38
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	77	47	69
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	41	47	43
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	46	26	41
4426 B66 RRH (Shielded)	15.0	6.6	7.4	0.69	0.77	2.27	2.03	1.20	1.20	23	26	24
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	57	35	51
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	29	35	30

WIND LOADS WITH ICE:

HPA-65R-BUU-H6 Antenna	77.0	19.8	14.0	10.60	7.50	3.89	5.49	1.26	1.33	100	75	94
EPBQ-654L8H6-L2 Antenna	78.0	26.0	11.3	14.09	6.13	3.00	6.89	1.22	1.40	129	64	113
AM-X-CD-16-65-00T-RET Antenna	77.0	16.8	10.9	8.99	5.84	4.58	7.06	1.29	1.40	87	61	80
RRUS-11 RRH	24.7	22.0	12.2	3.78	2.10	1.12	2.02	1.20	1.20	34	19	30
RRUS-11 RRH (Shielded)	24.7	11.0	12.2	1.89	2.10	2.25	2.02	1.20	1.20	17	19	17
RRUS-32 RRH	32.2	17.1	12.0	3.83	2.69	1.88	2.68	1.20	1.21	34	24	32
RRUS-32 RRH (Shielded)	32.2	8.6	12.0	1.91	2.69	3.76	2.68	1.26	1.21	18	24	20
4426 B66 RRH	20.0	18.2	12.4	2.53	1.73	1.10	1.61	1.20	1.20	23	15	21
4426 B66 RRH (Shielded)	20.0	9.1	12.4	1.27	1.73	2.20	1.61	1.20	1.20	11	15	12
B14 4478 RRH	23.1	18.4	13.3	2.96	2.14	1.26	1.74	1.20	1.20	27	19	25
B14 4478 RRH (Shielded)	23.1	9.2	13.3	1.48	2.14	2.51	1.74	1.20	1.20	13	19	15

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	26	17	24
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	36	13	30
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	22	12	19
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	3	6
RRUS-11 RRH (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	3	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	7
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	4	2	4
4426 B66 RRH (Shielded)	15.0	6.6	7.4	0.69	0.77	2.27	2.03	1.20	1.20	2	2	2
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	5
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	3	3	3

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	2.51	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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	271	181	203
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	371	139	197
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	225	130	154
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	78	33	45
RRUS-11 RRH (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	59	33	40
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	77	47	54
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	59	47	50
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	46	26	31
4426 B66 RRH (Shielded)	15.0	9.9	7.4	1.03	0.77	1.52	2.03	1.20	1.20	35	26	28
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	57	35	40
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	43	35	37

WIND LOADS WITH ICE:

HPA-65R-BUU-H6 Antenna	77.0	19.8	14.0	10.60	7.50	3.89	5.49	1.26	1.33	100	75	81
EPBQ-654L8H6-L2 Antenna	78.0	26.0	11.3	14.09	6.13	3.00	6.89	1.22	1.40	129	64	80
AM-X-CD-16-65-00T-RET Antenna	77.0	16.8	10.9	8.99	5.84	4.58	7.06	1.29	1.40	87	61	68
RRUS-11 RRH	24.7	22.0	12.2	3.78	2.10	1.12	2.02	1.20	1.20	34	19	23
RRUS-11 RRH (Shielded)	24.7	16.5	12.2	2.83	2.10	1.50	2.02	1.20	1.20	25	19	20
RRUS-32 RRH	32.2	17.1	12.0	3.83	2.69	1.88	2.68	1.20	1.21	34	24	27
RRUS-32 RRH (Shielded)	32.2	12.8	12.0	2.87	2.69	2.51	2.68	1.20	1.21	26	24	25
4426 B66 RRH	20.0	18.2	12.4	2.53	1.73	1.10	1.61	1.20	1.20	23	15	17
4426 B66 RRH (Shielded)	20.0	13.7	12.4	1.90	1.73	1.47	1.61	1.20	1.20	17	15	16
B14 4478 RRH	23.1	18.4	13.3	2.96	2.14	1.26	1.74	1.20	1.20	27	19	21
B14 4478 RRH (Shielded)	23.1	13.8	13.3	2.22	2.14	1.67	1.74	1.20	1.20	20	19	19

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	26	17	20
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	36	13	19
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	22	12	15
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	3	4
RRUS-11 RRH (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	6	3	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	6	4	5
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	4	2	3
4426 B66 RRH (Shielded)	15.0	9.9	7.4	1.03	0.77	1.52	2.03	1.20	1.20	3	2	3
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	4

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	2.51	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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	271	181	181
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	371	139	139
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	225	130	130
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	78	33	33
RRUS-11 RRH (Shielded)	19.7	5.2	7.2	0.71	0.99	3.79	2.74	1.26	1.21	25	33	33
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	77	47	47
RRUS-32 RRH (Shielded)	27.2	0.3	7.0	0.06	1.32	90.67	3.89	4.19	1.26	7	47	47
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	46	26	26
4426 B66 RRH (Shielded)	15.0	1.4	7.4	0.15	0.77	10.71	2.03	1.52	1.20	6	26	26
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	57	35	35
B14 4478 RRH (Shielded)	18.1	1.6	8.3	0.20	1.04	11.31	2.18	1.54	1.20	9	35	35

WIND LOADS WITH ICE:

HPA-65R-BUU-H6 Antenna	77.0	19.8	14.0	10.60	7.50	3.89	5.49	1.26	1.33	100	75	75
EPBQ-654L8H6-L2 Antenna	78.0	26.0	11.3	14.09	6.13	3.00	6.89	1.22	1.40	129	64	64
AM-X-CD-16-65-00T-RET Antenna	77.0	16.8	10.9	8.99	5.84	4.58	7.06	1.29	1.40	87	61	61
RRUS-11 RRH	24.7	22.0	12.2	3.78	2.10	1.12	2.02	1.20	1.20	34	19	19
RRUS-11 RRH (Shielded)	24.7	10.2	12.2	1.75	2.10	2.42	2.02	1.20	1.20	16	19	19
RRUS-32 RRH	32.2	17.1	12.0	3.83	2.69	1.88	2.68	1.20	1.21	34	24	24
RRUS-32 RRH (Shielded)	32.2	5.3	12.0	1.19	2.69	6.06	2.68	1.36	1.21	12	24	24
4426 B66 RRH	20.0	18.2	12.4	2.53	1.73	1.10	1.61	1.20	1.20	23	15	15
4426 B66 RRH (Shielded)	20.0	6.4	12.4	0.89	1.73	3.12	1.61	1.23	1.20	8	15	15
B14 4478 RRH	23.1	18.4	13.3	2.96	2.14	1.26	1.74	1.20	1.20	27	19	19
B14 4478 RRH (Shielded)	23.1	6.6	13.3	1.06	2.14	3.49	1.74	1.24	1.20	10	19	19

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	26	17	17
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	36	13	13
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	22	12	12
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	3	3
RRUS-11 RRH (Shielded)	19.7	5.2	7.2	0.71	0.99	3.79	2.74	1.26	1.21	2	3	3
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	4
RRUS-32 RRH (Shielded)	27.2	0.3	7.0	0.06	1.32	90.67	3.89	4.19	1.26	1	4	4
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	4	2	2
4426 B66 RRH (Shielded)	15.0	1.4	7.4	0.15	0.77	10.71	2.03	1.52	1.20	1	2	2
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
B14 4478 RRH (Shielded)	18.1	1.6	8.3	0.20	1.04	11.31	2.18	1.54	1.20	1	3	3

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	2.51	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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	271	181	203
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	371	139	197
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	225	130	154
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	78	33	45
RRUS-11 RRH (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	59	33	40
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	77	47	54
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	59	47	50
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	46	26	31
4426 B66 RRH (Shielded)	15.0	9.9	7.4	1.03	0.77	1.52	2.03	1.20	1.20	35	26	28
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	57	35	40
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	43	35	37

WIND LOADS WITH ICE:

HPA-65R-BUU-H6 Antenna	77.0	19.8	14.0	10.60	7.50	3.89	5.49	1.26	1.33	100	75	81
EPBQ-654L8H6-L2 Antenna	78.0	26.0	11.3	14.09	6.13	3.00	6.89	1.22	1.40	129	64	80
AM-X-CD-16-65-00T-RET Antenna	77.0	16.8	10.9	8.99	5.84	4.58	7.06	1.29	1.40	87	61	68
RRUS-11 RRH	24.7	22.0	12.2	3.78	2.10	1.12	2.02	1.20	1.20	34	19	23
RRUS-11 RRH (Shielded)	24.7	16.5	12.2	2.83	2.10	1.50	2.02	1.20	1.20	25	19	20
RRUS-32 RRH	32.2	17.1	12.0	3.83	2.69	1.88	2.68	1.20	1.21	34	24	27
RRUS-32 RRH (Shielded)	32.2	12.8	12.0	2.87	2.69	2.51	2.68	1.20	1.21	26	24	25
4426 B66 RRH	20.0	18.2	12.4	2.53	1.73	1.10	1.61	1.20	1.20	23	15	17
4426 B66 RRH (Shielded)	20.0	13.7	12.4	1.90	1.73	1.47	1.61	1.20	1.20	17	15	16
B14 4478 RRH	23.1	18.4	13.3	2.96	2.14	1.26	1.74	1.20	1.20	27	19	21
B14 4478 RRH (Shielded)	23.1	13.8	13.3	2.22	2.14	1.67	1.74	1.20	1.20	20	19	19

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	26	17	20
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	36	13	19
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	22	12	15
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	3	4
RRUS-11 RRH (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	6	3	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	6	4	5
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	4	2	3
4426 B66 RRH (Shielded)	15.0	9.9	7.4	1.03	0.77	1.52	2.03	1.20	1.20	3	2	3
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	4

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	2.51	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)
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	271	181	248
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	371	139	313
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	225	130	201
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	78	33	67
RRUS-11 RRH (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	39	33	38
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	77	47	69
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	41	47	43
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	46	26	41
4426 B66 RRH (Shielded)	15.0	6.6	7.4	0.69	0.77	2.27	2.03	1.20	1.20	23	26	24
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	57	35	51
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	29	35	30

WIND LOADS WITH ICE:

HPA-65R-BUU-H6 Antenna	77.0	19.8	14.0	10.60	7.50	3.89	5.49	1.26	1.33	100	75	94
EPBQ-654L8H6-L2 Antenna	78.0	26.0	11.3	14.09	6.13	3.00	6.89	1.22	1.40	129	64	113
AM-X-CD-16-65-00T-RET Antenna	77.0	16.8	10.9	8.99	5.84	4.58	7.06	1.29	1.40	87	61	80
RRUS-11 RRH	24.7	22.0	12.2	3.78	2.10	1.12	2.02	1.20	1.20	34	19	30
RRUS-11 RRH (Shielded)	24.7	11.0	12.2	1.89	2.10	2.25	2.02	1.20	1.20	17	19	17
RRUS-32 RRH	32.2	17.1	12.0	3.83	2.69	1.88	2.68	1.20	1.21	34	24	32
RRUS-32 RRH (Shielded)	32.2	8.6	12.0	1.91	2.69	3.76	2.68	1.26	1.21	18	24	20
4426 B66 RRH	20.0	18.2	12.4	2.53	1.73	1.10	1.61	1.20	1.20	23	15	21
4426 B66 RRH (Shielded)	20.0	9.1	12.4	1.27	1.73	2.20	1.61	1.20	1.20	11	15	12
B14 4478 RRH	23.1	18.4	13.3	2.96	2.14	1.26	1.74	1.20	1.20	27	19	25
B14 4478 RRH (Shielded)	23.1	9.2	13.3	1.48	2.14	2.51	1.74	1.20	1.20	13	19	15

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	26	17	24
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	36	13	30
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	22	12	19
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	8	3	6
RRUS-11 RRH (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	3	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	7
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
4426 B66 RRH	15.0	13.2	7.4	1.38	0.77	1.14	2.03	1.20	1.20	4	2	4
4426 B66 RRH (Shielded)	15.0	6.6	7.4	0.69	0.77	2.27	2.03	1.20	1.20	2	2	2
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	5
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	3	3	3

Date: 6/5/2018
Project Name: Hamden Benham St.
Project Number: CT2040
Designed By: AK **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 0.75 in.
Density of ice: 56 pcf

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:		72 lbs
Weight of object:	49 lbs	
Combined weight of ice and object:		121 lbs

HPA-65R-BUU-H6 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	14.8	
Depth (in):	9.0	
Total weight of ice on object:		97 lbs
Weight of object:	51 lbs	
Combined weight of ice and object:		148 lbs

EPBQ-654L8H6-L2 Antenna

Weight of ice based on total radial SF area:

Height (in):	73.0	
Width (in):	21.0	
Depth (in):	6.3	
Total weight of ice on object:		111 lbs
Weight of object:	73 lbs	
Combined weight of ice and object:		184 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:		32 lbs
Weight of object:	51 lbs	
Combined weight of ice and object:		83 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:		33 lbs
Weight of object:	60 lbs	
Combined weight of ice and object:		93 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		28 lbs
Weight of object:	60 lbs	
Combined weight of ice and object:		88 lbs

4426 B66 RRH

Weight of ice based on total radial SF area:

Height (in):	15.0	
Width (in):	13.2	
Depth (in):	7.4	
Total weight of ice on object:		22 lbs
Weight of object:	49 lbs	
Combined weight of ice and object:		71 lbs

DTMABP 7819 BG12A TMA

Weight of ice based on total radial SF area:

Height (in):	10.6	
Width (in):	11.0	
Depth (in):	3.8	
Total weight of ice on object:		12 lbs
Weight of object:	20 lbs	
Combined weight of ice and object:		32 lbs

L3x3x3/16 Angles

Weight of ice based on total radial SF area:

Thickness (in):	0.1875	
Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		5 plf

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		3 plf

HUDSON
Design Group LLC

Mount Calculations

Bentley

Current Date: 6/5/2018 2:59 PM
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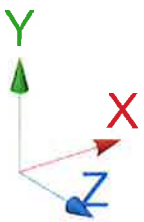

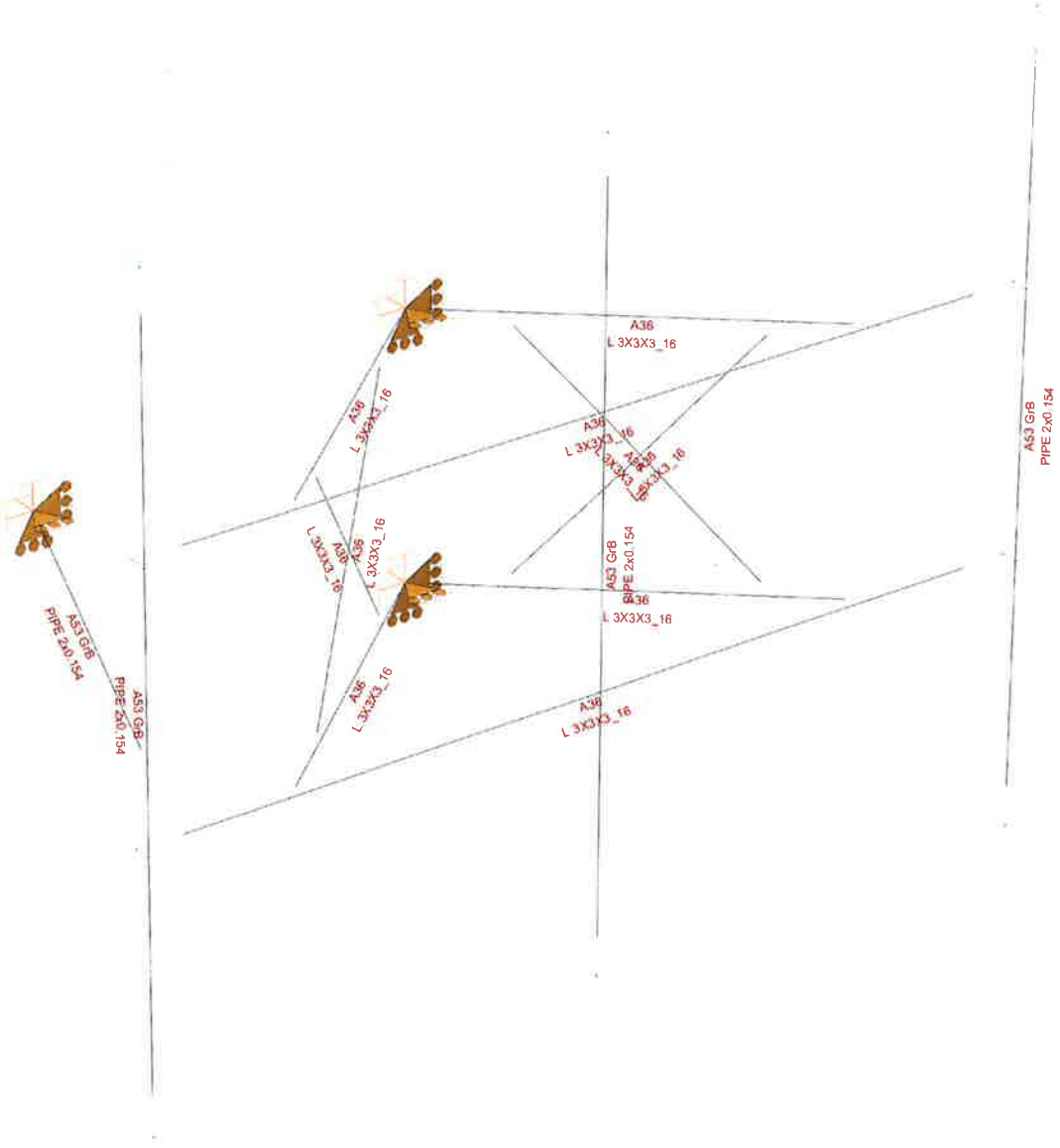
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A53 GrB
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X
Z

Bentley

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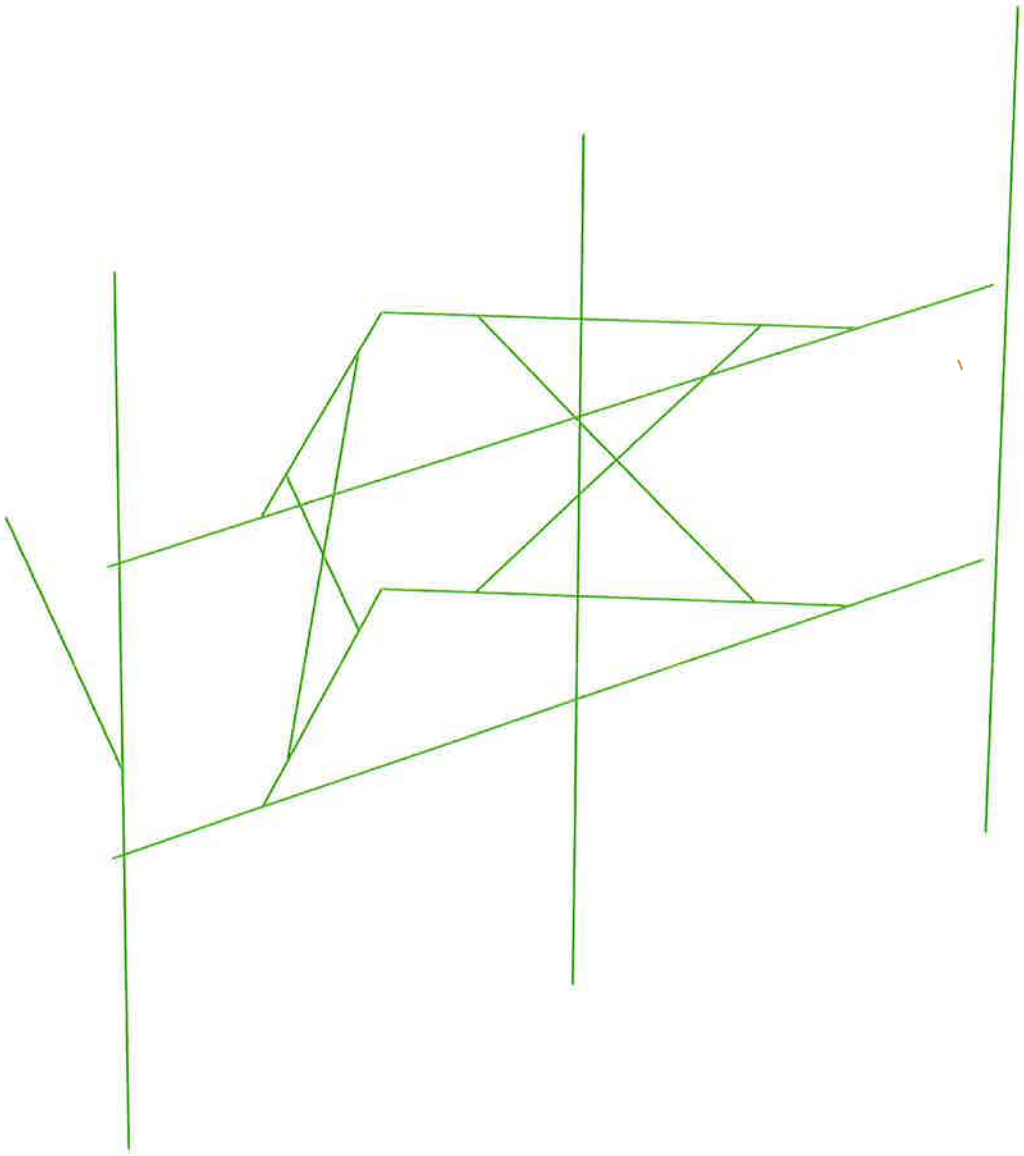
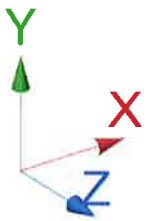
Design status

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





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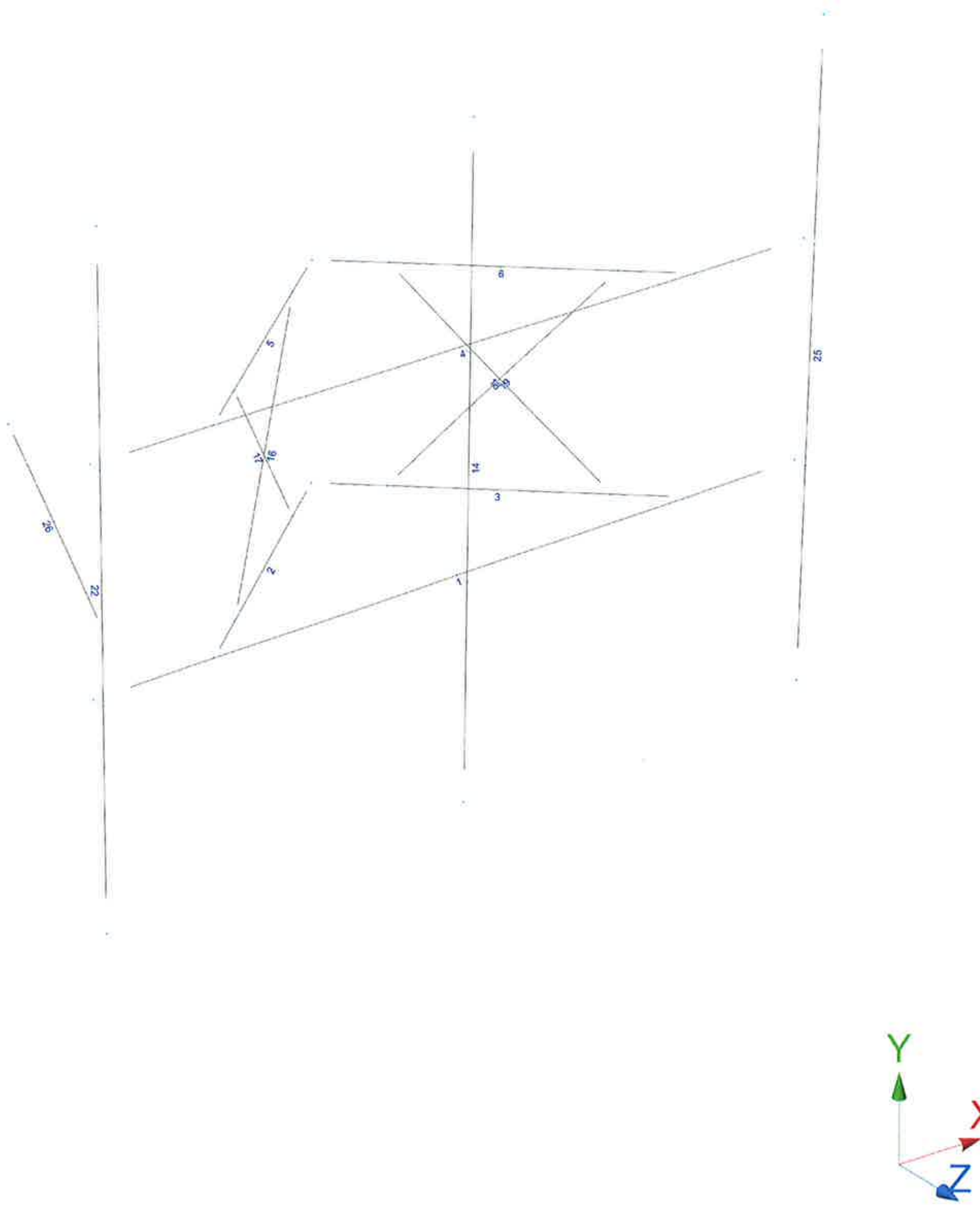

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Load data

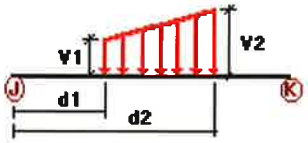
GLOSSARY

Comb : Indicates if load condition is a load combination

Load conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load on Left End	No	LL
LL2	250 lb Live Load on Center	No	LL
LL3	250 lb Live Load on Right End	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	-Wo	Yes	
W210	-W30	Yes	
W240	-W60	Yes	
W270	-W90	Yes	
W300	-W120	Yes	
W330	-W150	Yes	
WI180	-WI0	Yes	
WI210	-WI30	Yes	
WI240	-WI60	Yes	
WI270	-WI90	Yes	
WI300	-WI120	Yes	
WI330	-WI150	Yes	
WL180	-WL0	Yes	
WL210	-WL30	Yes	
WL240	-WL60	Yes	
WL270	-WL90	Yes	
WL300	-WL120	Yes	
WL330	-WL150	Yes	

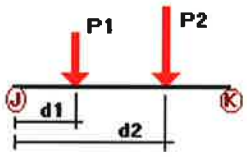
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	2	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	3	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	4	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	5	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	6	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	16	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	17	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	18	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	19	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	26	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
W30	1	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	2	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	3	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	4	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	5	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	6	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	16	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	17	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	18	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	19	Z	-0.008	-0.008	0.00	Yes	100.00	Yes
	26	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
W60	1	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	2	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	3	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	4	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	5	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	6	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	16	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	17	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	18	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	19	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	26	x	-0.011	-0.011	0.00	Yes	100.00	Yes
W90	1	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	2	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	3	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	4	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	5	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	6	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	16	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	17	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	18	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	19	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	26	x	-0.011	-0.011	0.00	Yes	100.00	Yes
W120	1	X	-0.008	-0.008	0.00	Yes	100.00	Yes

	2	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	3	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	4	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	5	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	6	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	16	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	17	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	18	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	19	X	-0.008	-0.008	0.00	Yes	100.00	Yes
	26	x	-0.011	-0.011	0.00	Yes	100.00	Yes
W150	1	Z	0.008	0.008	0.00	Yes	100.00	Yes
	2	Z	0.008	0.008	0.00	Yes	100.00	Yes
	3	Z	0.008	0.008	0.00	Yes	100.00	Yes
	4	Z	0.008	0.008	0.00	Yes	100.00	Yes
	5	Z	0.008	0.008	0.00	Yes	100.00	Yes
	6	Z	0.008	0.008	0.00	Yes	100.00	Yes
	16	Z	0.008	0.008	0.00	Yes	100.00	Yes
	17	Z	0.008	0.008	0.00	Yes	100.00	Yes
	18	Z	0.008	0.008	0.00	Yes	100.00	Yes
	19	Z	0.008	0.008	0.00	Yes	100.00	Yes
	26	z	0.011	0.011	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	14	y	-0.037	6.79	No
		y	-0.037	2.21	No
		y	-0.06	1.00	No
		y	-0.049	5.00	No
		y	-0.06	5.00	No
	22	y	-0.026	6.75	No
		y	-0.026	2.25	No
		y	-0.06	1.00	No
		y	-0.051	3.00	No
	25	y	-0.025	6.75	No
		y	-0.025	2.25	No
		y	-0.02	3.00	No
Wo	14	z	-0.186	6.79	No
		z	-0.186	2.21	No
		z	-0.007	1.00	No
		z	-0.006	5.00	No
		z	-0.009	5.00	No
	22	z	-0.136	6.75	No
		z	-0.136	2.25	No
		z	-0.007	1.00	No
		z	-0.025	3.00	No
	25	z	-0.113	6.75	No
		z	-0.113	2.25	No
W30	14	2	-0.157	6.79	No

		2	-0.157	2.21	No
		2	-0.043	1.00	No
		2	-0.024	5.00	No
		2	-0.03	5.00	No
	22	2	-0.125	6.75	No
		2	-0.125	2.25	No
		2	-0.043	1.00	No
		2	-0.038	3.00	No
	25	2	-0.101	6.75	No
		2	-0.101	2.25	No
W60	14	2	-0.099	6.79	No
		2	-0.099	2.21	No
		2	-0.05	1.00	No
		2	-0.028	5.00	No
		2	-0.037	5.00	No
	22	2	-0.102	6.75	No
		2	-0.102	2.25	No
		2	-0.05	1.00	No
		2	-0.04	3.00	No
	25	2	-0.077	6.75	No
		2	-0.077	2.25	No
W90	14	x	-0.07	6.79	No
		x	-0.07	2.21	No
		x	-0.047	3.00	No
		x	-0.026	3.00	No
		x	-0.035	3.00	No
	22	x	-0.091	6.75	No
		x	-0.091	2.25	No
		x	-0.047	3.00	No
		x	-0.033	3.00	No
	25	x	-0.066	6.75	No
		x	-0.066	2.25	No
W120	14	3	0.099	6.79	No
		3	0.099	2.21	No
		3	0.05	1.00	No
		3	0.028	5.00	No
		3	0.037	5.00	No
	22	3	0.102	6.75	No
		3	0.102	2.25	No
		3	0.05	1.00	No
		3	0.04	3.00	No
	25	3	0.077	6.75	No
		3	0.077	2.25	No
W150	14	3	0.157	6.79	No
		3	0.157	2.21	No
		3	0.043	2.00	No
		3	0.024	2.00	No
		3	0.03	2.00	No
	22	3	0.125	6.75	No
		3	0.125	2.25	No
		3	0.043	2.00	No
		3	0.038	2.00	No
	25	3	0.101	6.75	No
		3	0.101	2.25	No
Di	14	y	-0.056	6.79	No
		y	-0.056	2.21	No
		y	-0.033	1.00	No
		y	-0.022	5.00	No
		y	-0.028	5.00	No
	22	y	-0.049	6.75	No

		y	-0.049	2.25	No
		y	-0.033	1.00	No
		y	-0.032	3.00	No
	25	y	-0.036	6.75	No
		y	-0.036	2.25	No
		y	-0.012	3.00	No
WI0	14	z	-0.066	6.79	No
		z	-0.066	2.21	No
		z	-0.037	1.00	No
		z	-0.01	5.00	No
		z	-0.012	5.00	No
	22	z	-0.052	6.75	No
		z	-0.052	2.25	No
		z	-0.037	1.00	No
		z	-0.016	3.00	No
	25	z	-0.046	6.75	No
		z	-0.046	2.25	No
WI30	14	2	-0.057	6.79	No
		2	-0.057	2.21	No
		2	-0.02	1.00	No
		2	-0.012	1.00	No
		2	-0.015	5.00	No
	22	2	-0.047	6.75	No
		2	-0.047	2.25	No
		2	-0.02	1.00	No
		2	-0.017	3.00	No
	25	2	-0.041	6.75	No
		2	-0.041	2.25	No
WI60	14	2	-0.041	6.79	No
		2	-0.041	2.21	No
		2	-0.025	1.00	No
		2	-0.016	1.00	No
		2	-0.019	5.00	No
	22	2	-0.041	6.75	No
		2	-0.041	2.25	No
		2	-0.025	1.00	No
		2	-0.02	3.00	No
	25	2	-0.034	6.75	No
		2	-0.034	2.25	No
WI90	14	x	-0.032	6.79	No
		x	-0.032	2.21	No
		x	-0.024	2.00	No
		x	-0.015	2.00	No
		x	-0.019	2.00	No
	22	x	-0.038	6.75	No
		x	-0.038	2.25	No
		x	-0.024	2.00	No
		x	-0.019	2.00	No
	25	x	-0.031	6.75	No
		x	-0.031	2.25	No
WI120	14	3	0.041	6.79	No
		3	0.041	2.21	No
		3	0.025	1.00	No
		3	0.016	1.00	No
		3	0.019	5.00	No
	22	3	0.041	6.75	No
		3	0.041	2.25	No
		3	0.025	1.00	No
		3	0.02	3.00	No
	25	3	0.034	6.75	No

		3	0.034	2.25	No
WI150	14	3	0.057	6.79	No
		3	0.057	2.21	No
		3	0.02	2.00	No
		3	0.012	2.00	No
		3	0.015	2.00	No
	22	3	0.047	6.75	No
		3	0.047	2.25	No
		3	0.02	2.00	No
		3	0.017	2.00	No
	25	3	0.041	6.75	No
		3	0.041	2.25	No
WL0	14	z	-0.018	6.79	No
		z	-0.018	2.21	No
		z	-0.001	1.00	No
		z	-0.001	5.00	No
		z	-0.001	5.00	No
	22	z	-0.013	6.75	No
		z	-0.013	2.25	No
		z	-0.001	1.00	No
		z	-0.003	3.00	No
	25	z	-0.011	6.75	No
		z	-0.011	2.25	No
WL30	14	2	-0.016	6.79	No
		2	-0.016	2.21	No
		2	-0.005	1.00	No
		2	-0.003	1.00	No
		2	-0.003	5.00	No
	22	2	-0.012	6.75	No
		2	-0.012	2.25	No
		2	-0.005	1.00	No
		2	-0.004	3.00	No
	25	2	-0.01	6.75	No
		2	-0.01	2.25	No
WL60	14	2	-0.01	6.79	No
		2	-0.01	2.21	No
		2	-0.005	1.00	No
		2	-0.003	1.00	No
		2	-0.004	5.00	No
	22	2	-0.01	6.75	No
		2	-0.01	2.25	No
		2	-0.005	1.00	No
		2	-0.004	3.00	No
	25	2	-0.008	6.75	No
		2	-0.008	2.25	No
WL90	14	x	-0.007	6.79	No
		x	-0.007	2.21	No
		x	-0.005	2.00	No
		x	-0.003	2.00	No
		x	-0.004	2.00	No
	22	x	-0.009	6.75	No
		x	-0.009	2.25	No
		x	-0.005	2.00	No
		x	-0.004	2.00	No
	25	x	-0.007	6.75	No
		x	-0.007	2.25	No
WL120	14	3	0.01	6.79	No
		3	0.01	2.21	No
		3	0.005	1.00	No
		3	0.003	1.00	No

		3	0.004	5.00	No
	22	3	0.01	6.75	No
		3	0.01	2.25	No
		3	0.005	1.00	No
		3	0.004	3.00	No
	25	3	0.008	6.75	No
		3	0.008	2.25	No
WL150	14	3	0.016	6.79	No
		3	0.016	2.21	No
		3	0.005	2.00	No
		3	0.003	2.00	No
		3	0.003	2.00	No
	22	3	0.012	6.75	No
		3	0.012	2.25	No
		3	0.005	2.00	No
		3	0.004	2.00	No
	25	3	0.01	6.75	No
		3	0.01	2.25	No
LL1	4	y	-0.25	10.40	No
LL2	4	y	-0.25	5.20	No
LL3	4	y	-0.25	0.00	No
LLa1	25	y	-0.50	4.50	No
LLa3	14	y	-0.50	4.50	No
LLa4	22	y	-0.50	4.50	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load on Left End	No	0.00	0.00	0.00
LL2	250 lb Live Load on Center	No	0.00	0.00	0.00
LL3	250 lb Live Load on Right End	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	-Wo	Yes	0.00	0.00	0.00
W210	-W30	Yes	0.00	0.00	0.00
W240	-W60	Yes	0.00	0.00	0.00
W270	-W90	Yes	0.00	0.00	0.00
W300	-W120	Yes	0.00	0.00	0.00
W330	-W150	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
WI240	-WI60	Yes	0.00	0.00	0.00
WI270	-WI90	Yes	0.00	0.00	0.00
WI300	-WI120	Yes	0.00	0.00	0.00
WI330	-WI150	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
WL240	-WL60	Yes	0.00	0.00	0.00
WL270	-WL90	Yes	0.00	0.00	0.00
WL300	-WL120	Yes	0.00	0.00	0.00
WL330	-WL150	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	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
W240	0.00	0.00	0.00
W270	0.00	0.00	0.00

W300	0.00	0.00	0.00
W330	0.00	0.00	0.00
WI180	0.00	0.00	0.00
WI210	0.00	0.00	0.00
WI240	0.00	0.00	0.00
WI270	0.00	0.00	0.00
WI300	0.00	0.00	0.00
WI330	0.00	0.00	0.00
WL180	0.00	0.00	0.00
WL210	0.00	0.00	0.00
WL240	0.00	0.00	0.00
WL270	0.00	0.00	0.00
WL300	0.00	0.00	0.00
WL330	0.00	0.00	0.00

Bentley

Current Date: 6/5/2018 3:00 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2040\CT2040.etz\

Steel Code Check

Report: Summary - For all selected load conditions

Load conditions to be included in design :

W180=-Wo
W210=-W30
W240=-W60
W270=-W90
W300=-W120
W330=-W150
WI180=-WI0
WI210=-WI30
WI240=-WI60
WI270=-WI90
WI300=-WI120
WI330=-WI150
WL180=-WL0
WL210=-WL30
WL240=-WL60
WL270=-WL90
WL300=-WL120
WL330=-WL150
LC1=1.2D+1.6Wo
LC2=1.2D+1.6W30
LC3=1.2D+1.6W60
LC4=1.2D+1.6W90
LC5=1.2D+1.6W120
LC6=1.2D+1.6W150
LC7=1.2D-1.6Wo
LC8=1.2D-1.6W30
LC9=1.2D-1.6W60
LC10=1.2D-1.6W90
LC11=1.2D-1.6W120
LC12=1.2D-1.6W150
LC13=0.9D+1.6Wo
LC14=0.9D+1.6W30
LC15=0.9D+1.6W60
LC16=0.9D+1.6W90
LC17=0.9D+1.6W120
LC18=0.9D+1.6W150
LC19=0.9D-1.6Wo
LC20=0.9D-1.6W30
LC21=0.9D-1.6W60
LC22=0.9D-1.6W90
LC23=0.9D-1.6W120
LC24=0.9D-1.6W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120

LC36=1.2D+Di-WI150
LC37=0.9D
LC38=1.2D+1.6LL1
LC39=1.2D+1.6LL2
LC40=1.2D+1.6LL3
LC41=1.2D+WL0+LLa1
LC42=1.2D+WL30+LLa1
LC43=1.2D+WL60+LLa1
LC44=1.2D+WL90+LLa1
LC45=1.2D+WL120+LLa1
LC46=1.2D+WL150+LLa1
LC47=1.2D-WL0+LLa1
LC48=1.2D-WL30+LLa1
LC49=1.2D-WL60+LLa1
LC50=1.2D-WL90+LLa1
LC51=1.2D-WL120+LLa1
LC52=1.2D-WL150+LLa1
LC53=1.2D+WL0+LLa2
LC54=1.2D+WL30+LLa2
LC55=1.2D+WL60+LLa2
LC56=1.2D+WL90+LLa2
LC57=1.2D+WL120+LLa2
LC58=1.2D+WL150+LLa2
LC59=1.2D-WL0+LLa2
LC60=1.2D-WL30+LLa2
LC61=1.2D-WL60+LLa2
LC62=1.2D-WL90+LLa2
LC63=1.2D-WL120+LLa2
LC64=1.2D-WL150+LLa2
LC65=1.2D+WL0+LLa3
LC66=1.2D+WL30+LLa3
LC67=1.2D+WL60+LLa3
LC68=1.2D+WL90+LLa3
LC69=1.2D+WL120+LLa3
LC70=1.2D+WL150+LLa3
LC71=1.2D-WL0+LLa3
LC72=1.2D-WL30+LLa3
LC73=1.2D-WL60+LLa3
LC74=1.2D-WL90+LLa3
LC75=1.2D-WL120+LLa3
LC76=1.2D-WL150+LLa3
LC77=1.2D+WL0+LLa4
LC78=1.2D+WL30+LLa4
LC79=1.2D+WL60+LLa4
LC80=1.2D+WL90+LLa4
LC81=1.2D+WL120+LLa4
LC82=1.2D+WL150+LLa4
LC83=1.2D-WL0+LLa4
LC84=1.2D-WL30+LLa4
LC85=1.2D-WL60+LLa4
LC86=1.2D-WL90+LLa4
LC87=1.2D-WL120+LLa4
LC88=1.2D-WL150+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 3X3X3_16	1	LC1 at 84.38%	0.42	OK	Sec. F1
			LC10 at 15.63%	0.88	OK	Eq. H2-1
			LC11 at 15.63%	0.60	OK	Sec. F1
			LC12 at 50.00%	0.60	OK	Eq. H2-1
			LC13 at 50.00%	0.42	OK	Eq. H2-1
			LC14 at 15.63%	0.92	OK	Eq. H2-1
			LC15 at 15.63%	0.51	OK	Eq. H2-1
			LC16 at 15.63%	0.73	OK	Eq. H2-1
			LC17 at 17.19%	0.51	OK	Eq. H2-1

LC18 at 50.00%	0.69	OK	Eq. H2-1
LC19 at 50.00%	0.50	OK	Eq. H2-1
LC2 at 15.63%	**0.93**	**OK**	Eq. H2-1
LC20 at 15.63%	0.77	OK	Eq. H2-1
LC21 at 15.63%	0.39	OK	Eq. H2-1
LC22 at 15.63%	0.87	OK	Eq. H2-1
LC23 at 15.63%	0.58	OK	Sec. F1
LC24 at 50.00%	0.60	OK	Eq. H2-1
LC25 at 50.00%	0.37	OK	Sec. F1
LC26 at 17.19%	0.37	OK	Eq. H2-1
LC27 at 17.19%	0.37	OK	Eq. H2-1
LC28 at 50.00%	0.36	OK	Sec. F1
LC29 at 17.19%	0.34	OK	Eq. H2-1
LC3 at 15.63%	0.52	OK	Eq. H2-1
LC30 at 17.19%	0.33	OK	Eq. H2-1
LC31 at 17.19%	0.34	OK	Eq. H2-1
LC32 at 50.00%	0.37	OK	Sec. F1
LC33 at 50.00%	0.37	OK	Sec. F1
LC34 at 17.19%	0.36	OK	Eq. H2-1
LC35 at 50.00%	0.36	OK	Sec. F1
LC36 at 50.00%	0.36	OK	Sec. F1
LC37 at 50.00%	0.16	OK	Sec. F1
LC38 at 82.81%	0.36	OK	Eq. H2-1
LC39 at 50.00%	0.54	OK	Sec. F1
LC4 at 15.63%	0.72	OK	Eq. H2-1
LC40 at 15.63%	0.38	OK	Eq. H3-8
LC41 at 84.38%	0.43	OK	Eq. H3-8
LC42 at 84.38%	0.43	OK	Eq. H3-8
LC43 at 84.38%	0.43	OK	Eq. H3-8
LC44 at 84.38%	0.43	OK	Eq. H3-8
LC45 at 84.38%	0.43	OK	Eq. H3-8
LC46 at 84.38%	0.43	OK	Eq. H3-8
LC47 at 84.38%	0.43	OK	Eq. H3-8
LC48 at 84.38%	0.42	OK	Eq. H3-8
LC49 at 84.38%	0.43	OK	Eq. H3-8
LC5 at 17.19%	0.51	OK	Eq. H2-1
LC50 at 84.38%	0.43	OK	Eq. H3-8
LC51 at 84.38%	0.43	OK	Eq. H3-8
LC52 at 84.38%	0.43	OK	Eq. H3-8
LC53 at 50.00%	0.22	OK	Sec. F1
LC54 at 17.19%	0.21	OK	Eq. H2-1
LC55 at 50.00%	0.21	OK	Sec. F1
LC56 at 50.00%	0.23	OK	Sec. F1
LC57 at 50.00%	0.21	OK	Sec. F1
LC58 at 50.00%	0.21	OK	Eq. H2-1
LC59 at 50.00%	0.21	OK	Sec. F1
LC6 at 50.00%	0.69	OK	Eq. H2-1
LC60 at 50.00%	0.23	OK	Sec. F1
LC61 at 50.00%	0.23	OK	Sec. F1
LC62 at 50.00%	0.21	OK	Sec. F1
LC63 at 50.00%	0.22	OK	Sec. F1
LC64 at 50.00%	0.23	OK	Sec. F1
LC65 at 50.00%	0.64	OK	Sec. F1
LC66 at 50.00%	0.62	OK	Sec. F1
LC67 at 50.00%	0.63	OK	Sec. F1
LC68 at 50.00%	0.64	OK	Sec. F1
LC69 at 50.00%	0.63	OK	Sec. F1
LC7 at 50.00%	0.50	OK	Eq. H2-1
LC70 at 50.00%	0.63	OK	Sec. F1
LC71 at 50.00%	0.63	OK	Sec. F1
LC72 at 50.00%	0.65	OK	Sec. F1
LC73 at 50.00%	0.64	OK	Sec. F1
LC74 at 50.00%	0.63	OK	Sec. F1
LC75 at 50.00%	0.64	OK	Sec. F1

	LC76 at 50.00%	0.64	OK	Sec. F1
	LC77 at 15.63%	0.44	OK	Eq. H3-8
	LC78 at 15.63%	0.45	OK	Eq. H3-8
	LC79 at 15.63%	0.45	OK	Eq. H3-8
	LC8 at 15.63%	0.76	OK	Eq. H2-1
	LC80 at 15.63%	0.44	OK	Eq. H3-8
	LC81 at 15.63%	0.44	OK	Eq. H3-8
	LC82 at 15.63%	0.44	OK	Eq. H3-8
	LC83 at 15.63%	0.44	OK	Eq. H3-8
	LC84 at 15.63%	0.43	OK	Eq. H3-8
	LC85 at 15.63%	0.43	OK	Eq. H3-8
	LC86 at 15.63%	0.44	OK	Eq. H3-8
	LC87 at 15.63%	0.44	OK	Eq. H3-8
	LC88 at 15.63%	0.44	OK	Eq. H3-8
	LC9 at 15.63%	0.38	OK	Eq. H2-1
	W180 at 50.00%	0.32	OK	Eq. H2-1
	W210 at 15.63%	0.50	OK	Eq. H2-1
	W240 at 15.63%	0.26	OK	Eq. H2-1
	W270 at 15.63%	0.52	OK	Eq. H2-1
	W300 at 15.63%	0.33	OK	Sec. F1
	W330 at 50.00%	0.37	OK	Eq. H2-1
	WI180 at 50.00%	0.18	OK	Eq. H2-1
	WI210 at 15.63%	0.20	OK	Eq. H2-1
	WI240 at 15.63%	0.18	OK	Eq. H2-1
	WI270 at 15.63%	0.19	OK	Eq. H2-1
	WI300 at 50.00%	0.14	OK	Eq. H2-1
	WI330 at 50.00%	0.14	OK	Eq. H2-1
	WL180 at 50.00%	0.03	OK	Eq. H2-1
	WL210 at 15.63%	0.05	OK	Eq. H2-1
	WL240 at 15.63%	0.04	OK	Eq. H2-1
	WL270 at 15.63%	0.04	OK	Eq. H2-1
	WL300 at 50.00%	0.03	OK	Eq. H2-1
	WL330 at 50.00%	0.04	OK	Eq. H2-1
2	LC1 at 81.25%	0.34	OK	Eq. H2-1
	LC10 at 0.00%	0.70	OK	Eq. H2-1
	LC11 at 81.25%	0.35	OK	Eq. H2-1
	LC12 at 81.25%	0.35	OK	Eq. H2-1
	LC13 at 81.25%	0.28	OK	Eq. H2-1
	LC14 at 100.00%	0.69	OK	Eq. H2-1
	LC15 at 100.00%	0.41	OK	Eq. H2-1
	LC16 at 0.00%	0.66	OK	Sec. F1
	LC17 at 0.00%	0.22	OK	Sec. F1
	LC18 at 0.00%	0.23	OK	Eq. H2-1
	LC19 at 0.00%	0.15	OK	Eq. H2-1
	LC2 at 100.00%	**0.71**	**OK**	Eq. H2-1
	LC20 at 100.00%	0.55	OK	Eq. H2-1
	LC21 at 0.00%	0.32	OK	Sec. F1
	LC22 at 0.00%	0.67	OK	Eq. H2-1
	LC23 at 81.25%	0.29	OK	Eq. H2-1
	LC24 at 81.25%	0.30	OK	Eq. H2-1
	LC25 at 0.00%	0.37	OK	Eq. H2-1
	LC26 at 81.25%	0.37	OK	Eq. H2-1
	LC27 at 81.25%	0.36	OK	Eq. H2-1
	LC28 at 0.00%	0.38	OK	Eq. H2-1
	LC29 at 0.00%	0.33	OK	Eq. H2-1
	LC3 at 100.00%	0.43	OK	Eq. H2-1
	LC30 at 0.00%	0.34	OK	Eq. H2-1
	LC31 at 0.00%	0.33	OK	Eq. H2-1
	LC32 at 0.00%	0.39	OK	Eq. H2-1
	LC33 at 0.00%	0.38	OK	Eq. H2-1
	LC34 at 81.25%	0.36	OK	Eq. H2-1
	LC35 at 0.00%	0.37	OK	Eq. H2-1
	LC36 at 0.00%	0.36	OK	Eq. H2-1

LC37 at 0.00%	0.18	OK	Eq. H2-1
LC38 at 0.00%	0.20	OK	Eq. H2-1
LC39 at 0.00%	0.33	OK	Eq. H2-1
LC4 at 0.00%	0.66	OK	Sec. F1
LC40 at 0.00%	0.42	OK	Eq. H2-1
LC41 at 0.00%	0.20	OK	Eq. H2-1
LC42 at 0.00%	0.18	OK	Eq. H2-1
LC43 at 0.00%	0.19	OK	Eq. H2-1
LC44 at 0.00%	0.20	OK	Eq. H2-1
LC45 at 0.00%	0.19	OK	Eq. H2-1
LC46 at 0.00%	0.19	OK	Eq. H2-1
LC47 at 0.00%	0.19	OK	Eq. H2-1
LC48 at 0.00%	0.20	OK	Eq. H2-1
LC49 at 0.00%	0.20	OK	Eq. H2-1
LC5 at 0.00%	0.26	OK	Sec. F1
LC50 at 0.00%	0.19	OK	Eq. H2-1
LC51 at 0.00%	0.20	OK	Eq. H2-1
LC52 at 0.00%	0.20	OK	Eq. H2-1
LC53 at 0.00%	0.23	OK	Eq. H2-1
LC54 at 0.00%	0.22	OK	Eq. H2-1
LC55 at 0.00%	0.23	OK	Eq. H2-1
LC56 at 0.00%	0.24	OK	Eq. H2-1
LC57 at 0.00%	0.23	OK	Eq. H2-1
LC58 at 0.00%	0.23	OK	Eq. H2-1
LC59 at 0.00%	0.23	OK	Eq. H2-1
LC6 at 0.00%	0.23	OK	Eq. H2-1
LC60 at 0.00%	0.24	OK	Eq. H2-1
LC61 at 0.00%	0.24	OK	Eq. H2-1
LC62 at 0.00%	0.23	OK	Eq. H2-1
LC63 at 0.00%	0.24	OK	Eq. H2-1
LC64 at 0.00%	0.24	OK	Eq. H2-1
LC65 at 0.00%	0.35	OK	Eq. H2-1
LC66 at 0.00%	0.34	OK	Eq. H2-1
LC67 at 0.00%	0.34	OK	Eq. H2-1
LC68 at 0.00%	0.36	OK	Eq. H2-1
LC69 at 0.00%	0.35	OK	Eq. H2-1
LC7 at 0.00%	0.19	OK	Eq. H2-1
LC70 at 0.00%	0.35	OK	Eq. H2-1
LC71 at 0.00%	0.35	OK	Eq. H2-1
LC72 at 0.00%	0.36	OK	Eq. H2-1
LC73 at 0.00%	0.36	OK	Eq. H2-1
LC74 at 0.00%	0.35	OK	Eq. H2-1
LC75 at 0.00%	0.36	OK	Eq. H2-1
LC76 at 0.00%	0.36	OK	Eq. H2-1
LC77 at 81.25%	0.47	OK	Eq. H2-1
LC78 at 81.25%	0.48	OK	Eq. H2-1
LC79 at 81.25%	0.47	OK	Eq. H2-1
LC8 at 0.00%	0.54	OK	Sec. F1
LC80 at 0.00%	0.48	OK	Eq. H2-1
LC81 at 0.00%	0.47	OK	Eq. H2-1
LC82 at 0.00%	0.47	OK	Eq. H2-1
LC83 at 0.00%	0.47	OK	Eq. H2-1
LC84 at 0.00%	0.48	OK	Eq. H2-1
LC85 at 0.00%	0.48	OK	Eq. H2-1
LC86 at 81.25%	0.47	OK	Eq. H2-1
LC87 at 0.00%	0.47	OK	Eq. H2-1
LC88 at 81.25%	0.47	OK	Eq. H2-1
LC9 at 0.00%	0.36	OK	Sec. F1
W180 at 0.00%	0.08	OK	Eq. H2-1
W210 at 100.00%	0.37	OK	Eq. H2-1
W240 at 100.00%	0.21	OK	Eq. H2-1
W270 at 100.00%	0.39	OK	Eq. H2-1
W300 at 100.00%	0.09	OK	Eq. H2-1
W330 at 0.00%	0.16	OK	Eq. H2-1

	WI180 at 0.00%	0.05	OK	Eq. H2-1
	WI210 at 0.00%	0.16	OK	Sec. F1
	WI240 at 0.00%	0.15	OK	Sec. F1
	WI270 at 100.00%	0.14	OK	Eq. H2-1
	WI300 at 0.00%	0.05	OK	Eq. H2-1
	WI330 at 0.00%	0.04	OK	Eq. H2-1
	WL180 at 81.25%	0.01	OK	Eq. H2-1
	WL210 at 0.00%	0.04	OK	Sec. F1
	WL240 at 0.00%	0.03	OK	Sec. F1
	WL270 at 100.00%	0.03	OK	Eq. H2-1
	WL300 at 0.00%	0.01	OK	Eq. H2-1
	WL330 at 0.00%	0.01	OK	Eq. H2-1
3	LC1 at 81.25%	0.28	OK	Eq. H2-1
	LC10 at 0.00%	0.38	OK	Sec. F1
	LC11 at 81.25%	0.25	OK	Eq. H2-1
	LC12 at 81.25%	0.31	OK	Eq. H2-1
	LC13 at 81.25%	0.25	OK	Eq. H2-1
	LC14 at 0.00%	0.39	OK	Sec. F1
	LC15 at 0.00%	0.23	OK	Eq. H3-8
	LC16 at 0.00%	0.39	OK	Eq. H2-1
	LC17 at 0.00%	0.25	OK	Eq. H3-8
	LC18 at 0.00%	0.29	OK	Eq. H3-8
	LC19 at 0.00%	0.30	OK	Eq. H3-8
	LC2 at 0.00%	0.39	OK	Sec. F1
	LC20 at 0.00%	0.37	OK	Eq. H2-1
	LC21 at 0.00%	0.17	OK	Eq. H2-1
	LC22 at 0.00%	0.38	OK	Sec. F1
	LC23 at 81.25%	0.21	OK	Eq. H2-1
	LC24 at 81.25%	0.27	OK	Eq. H2-1
	LC25 at 0.00%	0.34	OK	Eq. H3-8
	LC26 at 0.00%	0.39	OK	Eq. H3-8
	LC27 at 0.00%	0.39	OK	Eq. H3-8
	LC28 at 0.00%	0.36	OK	Eq. H3-8
	LC29 at 0.00%	0.39	OK	Eq. H3-8
	LC3 at 0.00%	0.29	OK	Eq. H3-8
	LC30 at 0.00%	0.40	OK	Eq. H3-8
	LC31 at 0.00%	0.40	OK	Eq. H3-8
	LC32 at 0.00%	0.35	OK	Eq. H3-8
	LC33 at 0.00%	0.36	OK	Eq. H3-8
	LC34 at 0.00%	0.38	OK	Eq. H3-8
	LC35 at 0.00%	0.35	OK	Eq. H3-8
	LC36 at 0.00%	0.35	OK	Eq. H3-8
	LC37 at 0.00%	0.19	OK	Eq. H3-8
	LC38 at 0.00%	0.58	OK	Eq. H3-8
	LC39 at 0.00%	0.39	OK	Eq. H3-8
	LC4 at 0.00%	0.41	OK	Eq. H2-1
	LC40 at 0.00%	0.22	OK	Eq. H3-8
	LC41 at 0.00%	0.64	OK	Eq. H3-8
	LC42 at 0.00%	0.65	OK	Eq. H3-8
	LC43 at 0.00%	0.65	OK	Eq. H3-8
	LC44 at 0.00%	0.64	OK	Eq. H3-8
	LC45 at 0.00%	0.65	OK	Eq. H3-8
	LC46 at 0.00%	0.65	OK	Eq. H3-8
	LC47 at 0.00%	**0.65**	**OK**	Eq. H3-8
	LC48 at 0.00%	0.64	OK	Eq. H3-8
	LC49 at 0.00%	0.64	OK	Eq. H3-8
	LC5 at 0.00%	0.32	OK	Eq. H3-8
	LC50 at 0.00%	0.65	OK	Eq. H3-8
	LC51 at 0.00%	0.64	OK	Eq. H3-8
	LC52 at 0.00%	0.64	OK	Eq. H3-8
	LC53 at 0.00%	0.25	OK	Eq. H3-8
	LC54 at 0.00%	0.26	OK	Eq. H3-8
	LC55 at 0.00%	0.26	OK	Eq. H3-8

	LC56 at 0.00%	0.26	OK	Eq. H3-8
	LC57 at 0.00%	0.26	OK	Eq. H3-8
	LC58 at 0.00%	0.27	OK	Eq. H3-8
	LC59 at 0.00%	0.27	OK	Eq. H3-8
	LC6 at 0.00%	0.35	OK	Eq. H3-8
	LC60 at 0.00%	0.25	OK	Eq. H3-8
	LC61 at 0.00%	0.26	OK	Eq. H3-8
	LC62 at 0.00%	0.26	OK	Eq. H3-8
	LC63 at 0.00%	0.25	OK	Eq. H3-8
	LC64 at 0.00%	0.25	OK	Eq. H3-8
	LC65 at 0.00%	0.41	OK	Eq. H3-8
	LC66 at 0.00%	0.43	OK	Eq. H3-8
	LC67 at 0.00%	0.43	OK	Eq. H3-8
	LC68 at 0.00%	0.42	OK	Eq. H3-8
	LC69 at 0.00%	0.43	OK	Eq. H3-8
	LC7 at 0.00%	0.36	OK	Eq. H3-8
	LC70 at 0.00%	0.43	OK	Eq. H3-8
	LC71 at 0.00%	0.43	OK	Eq. H3-8
	LC72 at 0.00%	0.42	OK	Eq. H3-8
	LC73 at 0.00%	0.42	OK	Eq. H3-8
	LC74 at 0.00%	0.42	OK	Eq. H3-8
	LC75 at 0.00%	0.42	OK	Eq. H3-8
	LC76 at 0.00%	0.41	OK	Eq. H3-8
	LC77 at 0.00%	0.21	OK	Eq. H3-8
	LC78 at 0.00%	0.22	OK	Eq. H3-8
	LC79 at 0.00%	0.22	OK	Eq. H3-8
	LC8 at 0.00%	0.39	OK	Eq. H2-1
	LC80 at 0.00%	0.21	OK	Eq. H3-8
	LC81 at 0.00%	0.22	OK	Eq. H3-8
	LC82 at 0.00%	0.22	OK	Eq. H3-8
	LC83 at 0.00%	0.22	OK	Eq. H3-8
	LC84 at 0.00%	0.21	OK	Eq. H3-8
	LC85 at 0.00%	0.21	OK	Eq. H3-8
	LC86 at 0.00%	0.22	OK	Eq. H3-8
	LC87 at 0.00%	0.21	OK	Eq. H3-8
	LC88 at 0.00%	0.21	OK	Eq. H3-8
	LC9 at 0.00%	0.23	OK	Eq. H3-8
	W180 at 81.25%	0.07	OK	Eq. H2-1
	W210 at 0.00%	0.23	OK	Sec. F1
	W240 at 2.08%	0.08	OK	Sec. F1
	W270 at 0.00%	0.24	OK	Sec. F1
	W300 at 0.00%	0.08	OK	Eq. H2-1
	W330 at 81.25%	0.11	OK	Eq. H2-1
	WI180 at 81.25%	0.04	OK	Eq. H2-1
	WI210 at 0.00%	0.08	OK	Sec. F1
	WI240 at 0.00%	0.08	OK	Sec. F1
	WI270 at 0.00%	0.08	OK	Sec. F1
	WI300 at 81.25%	0.04	OK	Eq. H2-1
	WI330 at 81.25%	0.04	OK	Eq. H2-1
	WL180 at 0.00%	0.01	OK	Eq. H3-8
	WL210 at 0.00%	0.02	OK	Sec. F1
	WL240 at 0.00%	0.02	OK	Sec. F1
	WL270 at 0.00%	0.02	OK	Sec. F1
	WL300 at 81.25%	0.01	OK	Eq. H2-1
	WL330 at 81.25%	0.01	OK	Eq. H2-1
4	LC1 at 82.81%	0.40	OK	Eq. H2-1
	LC10 at 15.63%	0.46	OK	Eq. H2-1
	LC11 at 15.63%	0.26	OK	Eq. H2-1
	LC12 at 84.38%	0.31	OK	Eq. H2-1
	LC13 at 82.81%	0.39	OK	Eq. H2-1
	LC14 at 15.63%	0.49	OK	Eq. H2-1
	LC15 at 15.63%	0.21	OK	Eq. H2-1
	LC16 at 15.63%	0.46	OK	Eq. H2-1

LC17 at 15.63%	0.31	OK	Sec. F1
LC18 at 50.00%	0.34	OK	Eq. H2-1
LC19 at 50.00%	0.48	OK	Eq. H2-1
LC2 at 15.63%	0.49	OK	Eq. H2-1
LC20 at 15.63%	0.50	OK	Eq. H2-1
LC21 at 17.19%	0.25	OK	Eq. H2-1
LC22 at 15.63%	0.46	OK	Eq. H2-1
LC23 at 15.63%	0.27	OK	Eq. H2-1
LC24 at 84.38%	0.31	OK	Eq. H2-1
LC25 at 17.19%	0.31	OK	Eq. H2-1
LC26 at 50.00%	0.34	OK	Eq. H2-1
LC27 at 50.00%	0.33	OK	Eq. H2-1
LC28 at 17.19%	0.36	OK	Eq. H2-1
LC29 at 50.00%	0.35	OK	Eq. H2-1
LC3 at 50.00%	0.25	OK	Eq. H2-1
LC30 at 50.00%	0.35	OK	Eq. H2-1
LC31 at 50.00%	0.36	OK	Eq. H2-1
LC32 at 17.19%	0.37	OK	Eq. H2-1
LC33 at 17.19%	0.36	OK	Eq. H2-1
LC34 at 50.00%	0.33	OK	Eq. H2-1
LC35 at 17.19%	0.30	OK	Eq. H2-1
LC36 at 17.19%	0.30	OK	Eq. H2-1
LC37 at 50.00%	0.16	OK	Eq. H2-1
LC38 at 82.81%	0.37	OK	Sec. F1
LC39 at 50.00%	0.55	OK	Eq. H2-1
LC4 at 15.63%	0.47	OK	Eq. H2-1
LC40 at 17.19%	0.41	OK	Sec. F1
LC41 at 82.81%	0.41	OK	Sec. F1
LC42 at 82.81%	0.41	OK	Sec. F1
LC43 at 82.81%	0.41	OK	Sec. F1
LC44 at 82.81%	0.42	OK	Sec. F1
LC45 at 82.81%	0.42	OK	Sec. F1
LC46 at 82.81%	0.42	OK	Sec. F1
LC47 at 82.81%	0.42	OK	Sec. F1
LC48 at 82.81%	0.42	OK	Sec. F1
LC49 at 82.81%	0.42	OK	Sec. F1
LC5 at 17.19%	0.33	OK	Eq. H2-1
LC50 at 82.81%	0.41	OK	Sec. F1
LC51 at 82.81%	0.41	OK	Sec. F1
LC52 at 82.81%	0.41	OK	Sec. F1
LC53 at 50.00%	0.21	OK	Eq. H2-1
LC54 at 50.00%	0.22	OK	Eq. H2-1
LC55 at 50.00%	0.22	OK	Eq. H2-1
LC56 at 50.00%	0.21	OK	Eq. H2-1
LC57 at 50.00%	0.22	OK	Eq. H2-1
LC58 at 50.00%	0.22	OK	Eq. H2-1
LC59 at 50.00%	0.22	OK	Eq. H2-1
LC6 at 50.00%	0.39	OK	Eq. H2-1
LC60 at 17.19%	0.22	OK	Eq. H2-1
LC61 at 17.19%	0.21	OK	Eq. H2-1
LC62 at 50.00%	0.21	OK	Eq. H2-1
LC63 at 50.00%	0.21	OK	Eq. H2-1
LC64 at 50.00%	0.20	OK	Eq. H2-1
LC65 at 50.00%	0.62	OK	Eq. H2-1
LC66 at 50.00%	0.63	OK	Eq. H2-1
LC67 at 50.00%	0.63	OK	Eq. H2-1
LC68 at 50.00%	0.62	OK	Eq. H2-1
LC69 at 50.00%	0.63	OK	Eq. H2-1
LC7 at 50.00%	0.48	OK	Eq. H2-1
LC70 at 50.00%	**0.63**	**OK**	Eq. H2-1
LC71 at 50.00%	0.63	OK	Eq. H2-1
LC72 at 50.00%	0.62	OK	Eq. H2-1
LC73 at 50.00%	0.62	OK	Eq. H2-1
LC74 at 50.00%	0.63	OK	Eq. H2-1

	LC75 at 50.00%	0.62	OK	Eq. H2-1
	LC76 at 50.00%	0.62	OK	Eq. H2-1
	LC77 at 17.19%	0.43	OK	Sec. F1
	LC78 at 17.19%	0.43	OK	Sec. F1
	LC79 at 17.19%	0.43	OK	Sec. F1
	LC8 at 15.63%	0.50	OK	Eq. H2-1
	LC80 at 17.19%	0.45	OK	Sec. F1
	LC81 at 17.19%	0.44	OK	Sec. F1
	LC82 at 17.19%	0.44	OK	Sec. F1
	LC83 at 17.19%	0.45	OK	Sec. F1
	LC84 at 17.19%	0.45	OK	Sec. F1
	LC85 at 17.19%	0.45	OK	Sec. F1
	LC86 at 17.19%	0.43	OK	Sec. F1
	LC87 at 17.19%	0.44	OK	Sec. F1
	LC88 at 17.19%	0.43	OK	Sec. F1
	LC9 at 17.19%	0.30	OK	Eq. H2-1
	W180 at 50.00%	0.30	OK	Eq. H2-1
	W210 at 15.63%	0.30	OK	Eq. H2-1
	W240 at 15.63%	0.13	OK	Eq. H2-1
	W270 at 15.63%	0.30	OK	Eq. H2-1
	W300 at 15.63%	0.20	OK	Sec. F1
	W330 at 84.38%	0.20	OK	Sec. F1
	WI180 at 84.38%	0.08	OK	Eq. H2-1
	WI210 at 15.63%	0.11	OK	Eq. H2-1
	WI240 at 15.63%	0.09	OK	Eq. H2-1
	WI270 at 15.63%	0.09	OK	Eq. H2-1
	WI300 at 84.38%	0.06	OK	Sec. F1
	WI330 at 84.38%	0.08	OK	Sec. F1
	WL180 at 50.00%	0.02	OK	Eq. H2-1
	WL210 at 15.63%	0.03	OK	Eq. H2-1
	WL240 at 15.63%	0.02	OK	Eq. H2-1
	WL270 at 15.63%	0.02	OK	Eq. H2-1
	WL300 at 84.38%	0.01	OK	Sec. F1
	WL330 at 84.38%	0.02	OK	Sec. F1
5	LC1 at 0.00%	0.41	OK	Eq. H3-8
	LC10 at 0.00%	**0.72**	**OK**	Eq. H3-8
	LC11 at 0.00%	0.50	OK	Eq. H3-8
	LC12 at 0.00%	0.38	OK	Eq. H3-8
	LC13 at 0.00%	0.32	OK	Eq. H3-8
	LC14 at 0.00%	0.62	OK	Eq. H3-8
	LC15 at 0.00%	0.44	OK	Eq. H3-8
	LC16 at 0.00%	0.55	OK	Sec. F1
	LC17 at 81.25%	0.29	OK	Eq. H3-8
	LC18 at 0.00%	0.23	OK	Eq. H3-8
	LC19 at 81.25%	0.25	OK	Eq. H3-8
	LC2 at 0.00%	0.70	OK	Eq. H3-8
	LC20 at 0.00%	0.44	OK	Sec. F1
	LC21 at 81.25%	0.27	OK	Eq. H3-8
	LC22 at 0.00%	0.63	OK	Eq. H3-8
	LC23 at 0.00%	0.41	OK	Eq. H3-8
	LC24 at 0.00%	0.29	OK	Eq. H3-8
	LC25 at 0.00%	0.53	OK	Eq. H3-8
	LC26 at 0.00%	0.61	OK	Eq. H3-8
	LC27 at 0.00%	0.60	OK	Eq. H3-8
	LC28 at 81.25%	0.46	OK	Eq. H3-8
	LC29 at 0.00%	0.50	OK	Eq. H3-8
	LC3 at 0.00%	0.53	OK	Eq. H3-8
	LC30 at 0.00%	0.50	OK	Eq. H3-8
	LC31 at 0.00%	0.50	OK	Eq. H3-8
	LC32 at 81.25%	0.47	OK	Eq. H3-8
	LC33 at 81.25%	0.47	OK	Eq. H3-8
	LC34 at 0.00%	0.59	OK	Eq. H3-8
	LC35 at 0.00%	0.52	OK	Eq. H3-8

LC36 at 0.00%	0.53	OK	Eq. H3-8
LC37 at 0.00%	0.26	OK	Eq. H3-8
LC38 at 0.00%	0.30	OK	Eq. H3-8
LC39 at 0.00%	0.49	OK	Eq. H3-8
LC4 at 0.00%	0.55	OK	Sec. F1
LC40 at 0.00%	0.60	OK	Eq. H3-8
LC41 at 0.00%	0.30	OK	Eq. H3-8
LC42 at 0.00%	0.32	OK	Eq. H3-8
LC43 at 0.00%	0.31	OK	Eq. H3-8
LC44 at 0.00%	0.27	OK	Eq. H3-8
LC45 at 0.00%	0.29	OK	Eq. H3-8
LC46 at 0.00%	0.29	OK	Eq. H3-8
LC47 at 0.00%	0.29	OK	Eq. H3-8
LC48 at 0.00%	0.27	OK	Eq. H3-8
LC49 at 0.00%	0.27	OK	Eq. H3-8
LC5 at 81.25%	0.36	OK	Eq. H3-8
LC50 at 0.00%	0.31	OK	Eq. H3-8
LC51 at 0.00%	0.29	OK	Eq. H3-8
LC52 at 0.00%	0.29	OK	Eq. H3-8
LC53 at 0.00%	0.35	OK	Eq. H3-8
LC54 at 0.00%	0.37	OK	Eq. H3-8
LC55 at 0.00%	0.37	OK	Eq. H3-8
LC56 at 0.00%	0.33	OK	Eq. H3-8
LC57 at 0.00%	0.34	OK	Eq. H3-8
LC58 at 0.00%	0.34	OK	Eq. H3-8
LC59 at 0.00%	0.34	OK	Eq. H3-8
LC6 at 0.00%	0.31	OK	Eq. H3-8
LC60 at 0.00%	0.32	OK	Eq. H3-8
LC61 at 0.00%	0.33	OK	Eq. H3-8
LC62 at 0.00%	0.36	OK	Eq. H3-8
LC63 at 0.00%	0.35	OK	Eq. H3-8
LC64 at 0.00%	0.35	OK	Eq. H3-8
LC65 at 0.00%	0.53	OK	Eq. H3-8
LC66 at 0.00%	0.55	OK	Eq. H3-8
LC67 at 0.00%	0.54	OK	Eq. H3-8
LC68 at 0.00%	0.51	OK	Eq. H3-8
LC69 at 0.00%	0.52	OK	Eq. H3-8
LC7 at 81.25%	0.31	OK	Eq. H3-8
LC70 at 0.00%	0.52	OK	Eq. H3-8
LC71 at 0.00%	0.52	OK	Eq. H3-8
LC72 at 0.00%	0.50	OK	Eq. H3-8
LC73 at 0.00%	0.50	OK	Eq. H3-8
LC74 at 0.00%	0.54	OK	Eq. H3-8
LC75 at 0.00%	0.53	OK	Eq. H3-8
LC76 at 0.00%	0.53	OK	Eq. H3-8
LC77 at 0.00%	0.68	OK	Eq. H3-8
LC78 at 0.00%	0.70	OK	Eq. H3-8
LC79 at 0.00%	0.69	OK	Eq. H3-8
LC8 at 81.25%	0.46	OK	Eq. H3-8
LC80 at 0.00%	0.65	OK	Eq. H3-8
LC81 at 0.00%	0.67	OK	Eq. H3-8
LC82 at 0.00%	0.67	OK	Eq. H3-8
LC83 at 0.00%	0.67	OK	Eq. H3-8
LC84 at 0.00%	0.65	OK	Eq. H3-8
LC85 at 0.00%	0.65	OK	Eq. H3-8
LC86 at 0.00%	0.69	OK	Eq. H3-8
LC87 at 0.00%	0.67	OK	Eq. H3-8
LC88 at 0.00%	0.68	OK	Eq. H3-8
LC9 at 81.25%	0.33	OK	Eq. H3-8
W180 at 0.00%	0.07	OK	Eq. H2-1
W210 at 0.00%	0.28	OK	Sec. F1
W240 at 100.00%	0.12	OK	Eq. H2-1
W270 at 0.00%	0.32	OK	Sec. F1
W300 at 0.00%	0.12	OK	Eq. H2-1

	W330 at 0.00%	0.07	OK	Eq. H2-1
	WI180 at 0.00%	0.02	OK	Eq. H3-8
	WI210 at 0.00%	0.12	OK	Sec. F1
	WI240 at 0.00%	0.10	OK	Sec. F1
	WI270 at 0.00%	0.08	OK	Sec. F1
	WI300 at 100.00%	0.02	OK	Eq. H2-1
	WI330 at 100.00%	0.02	OK	Eq. H2-1
	WL180 at 0.00%	0.01	OK	Eq. H3-8
	WL210 at 0.00%	0.03	OK	Sec. F1
	WL240 at 0.00%	0.02	OK	Sec. F1
	WL270 at 0.00%	0.02	OK	Sec. F1
	WL300 at 100.00%	0.00	OK	Eq. H2-1
	WL330 at 81.25%	0.00	OK	Eq. H2-1
6	LC1 at 0.00%	0.21	OK	Eq. H2-1
	LC10 at 0.00%	0.40	OK	Sec. F1
	LC11 at 0.00%	0.20	OK	Eq. H2-1
	LC12 at 0.00%	0.20	OK	Eq. H2-1
	LC13 at 0.00%	0.18	OK	Eq. H2-1
	LC14 at 0.00%	0.42	OK	Sec. F1
	LC15 at 18.75%	0.12	OK	Sec. F1
	LC16 at 0.00%	0.39	OK	Sec. F1
	LC17 at 81.25%	0.16	OK	Sec. F1
	LC18 at 81.25%	0.19	OK	Eq. H2-1
	LC19 at 81.25%	0.22	OK	Eq. H2-1
	LC2 at 0.00%	0.42	OK	Sec. F1
	LC20 at 0.00%	0.40	OK	Sec. F1
	LC21 at 0.00%	0.20	OK	Sec. F1
	LC22 at 0.00%	0.40	OK	Sec. F1
	LC23 at 0.00%	0.18	OK	Eq. H2-1
	LC24 at 0.00%	0.18	OK	Eq. H2-1
	LC25 at 0.00%	0.24	OK	Eq. H2-1
	LC26 at 81.25%	0.23	OK	Sec. F1
	LC27 at 81.25%	0.23	OK	Sec. F1
	LC28 at 0.00%	0.25	OK	Eq. H2-1
	LC29 at 81.25%	0.25	OK	Sec. F1
	LC3 at 0.00%	0.12	OK	Eq. H2-1
	LC30 at 81.25%	0.26	OK	Sec. F1
	LC31 at 81.25%	0.26	OK	Sec. F1
	LC32 at 0.00%	0.25	OK	Eq. H2-1
	LC33 at 0.00%	0.25	OK	Eq. H2-1
	LC34 at 81.25%	0.23	OK	Sec. F1
	LC35 at 0.00%	0.23	OK	Eq. H2-1
	LC36 at 0.00%	0.23	OK	Eq. H2-1
	LC37 at 0.00%	0.12	OK	Eq. H2-1
	LC38 at 81.25%	0.40	OK	Sec. F1
	LC39 at 81.25%	0.25	OK	Sec. F1
	LC4 at 0.00%	0.39	OK	Sec. F1
	LC40 at 0.00%	0.14	OK	Eq. H2-1
	LC41 at 81.25%	0.45	OK	Sec. F1
	LC42 at 81.25%	0.45	OK	Sec. F1
	LC43 at 81.25%	0.45	OK	Sec. F1
	LC44 at 81.25%	0.45	OK	Sec. F1
	LC45 at 81.25%	0.45	OK	Sec. F1
	LC46 at 81.25%	0.46	OK	Sec. F1
	LC47 at 81.25%	**0.46**	**OK**	Sec. F1
	LC48 at 81.25%	0.45	OK	Sec. F1
	LC49 at 81.25%	0.45	OK	Sec. F1
	LC5 at 81.25%	0.20	OK	Sec. F1
	LC50 at 81.25%	0.45	OK	Sec. F1
	LC51 at 81.25%	0.45	OK	Sec. F1
	LC52 at 81.25%	0.45	OK	Sec. F1
	LC53 at 0.00%	0.16	OK	Eq. H2-1
	LC54 at 81.25%	0.15	OK	Sec. F1

	LC55 at 81.25%	0.15	OK	Sec. F1
	LC56 at 0.00%	0.16	OK	Eq. H2-1
	LC57 at 81.25%	0.16	OK	Sec. F1
	LC58 at 81.25%	0.16	OK	Sec. F1
	LC59 at 81.25%	0.16	OK	Sec. F1
	LC6 at 81.25%	0.23	OK	Eq. H2-1
	LC60 at 0.00%	0.16	OK	Eq. H2-1
	LC61 at 0.00%	0.16	OK	Eq. H2-1
	LC62 at 81.25%	0.15	OK	Sec. F1
	LC63 at 0.00%	0.16	OK	Eq. H2-1
	LC64 at 0.00%	0.16	OK	Eq. H2-1
	LC65 at 81.25%	0.26	OK	Sec. F1
	LC66 at 81.25%	0.26	OK	Sec. F1
	LC67 at 81.25%	0.26	OK	Sec. F1
	LC68 at 81.25%	0.27	OK	Sec. F1
	LC69 at 81.25%	0.27	OK	Sec. F1
	LC7 at 81.25%	0.26	OK	Eq. H2-1
	LC70 at 81.25%	0.27	OK	Sec. F1
	LC71 at 81.25%	0.27	OK	Sec. F1
	LC72 at 81.25%	0.27	OK	Sec. F1
	LC73 at 81.25%	0.27	OK	Sec. F1
	LC74 at 81.25%	0.26	OK	Sec. F1
	LC75 at 81.25%	0.26	OK	Sec. F1
	LC76 at 81.25%	0.26	OK	Sec. F1
	LC77 at 0.00%	0.14	OK	Eq. H2-1
	LC78 at 0.00%	0.13	OK	Eq. H2-1
	LC79 at 0.00%	0.13	OK	Eq. H2-1
	LC8 at 0.00%	0.40	OK	Sec. F1
	LC80 at 0.00%	0.14	OK	Eq. H2-1
	LC81 at 0.00%	0.13	OK	Eq. H2-1
	LC82 at 81.25%	0.13	OK	Sec. F1
	LC83 at 81.25%	0.13	OK	Sec. F1
	LC84 at 0.00%	0.14	OK	Eq. H2-1
	LC85 at 0.00%	0.14	OK	Eq. H2-1
	LC86 at 0.00%	0.13	OK	Eq. H2-1
	LC87 at 0.00%	0.14	OK	Eq. H2-1
	LC88 at 0.00%	0.14	OK	Eq. H2-1
	LC9 at 0.00%	0.23	OK	Sec. F1
	W180 at 81.25%	0.07	OK	Eq. H2-1
	W210 at 0.00%	0.25	OK	Sec. F1
	W240 at 18.75%	0.07	OK	Sec. F1
	W270 at 0.00%	0.26	OK	Sec. F1
	W300 at 0.00%	0.10	OK	Eq. H2-1
	W330 at 100.00%	0.07	OK	Eq. H2-1
	WI180 at 100.00%	0.02	OK	Eq. H2-1
	WI210 at 0.00%	0.08	OK	Sec. F1
	WI240 at 0.00%	0.06	OK	Sec. F1
	WI270 at 0.00%	0.06	OK	Sec. F1
	WI300 at 100.00%	0.03	OK	Eq. H2-1
	WI330 at 100.00%	0.03	OK	Eq. H2-1
	WL180 at 81.25%	0.01	OK	Eq. H2-1
	WL210 at 0.00%	0.02	OK	Sec. F1
	WL240 at 0.00%	0.02	OK	Sec. F1
	WL270 at 0.00%	0.01	OK	Sec. F1
	WL300 at 100.00%	0.01	OK	Eq. H2-1
	WL330 at 100.00%	0.01	OK	Eq. H2-1
16	LC1 at 100.00%	0.18	OK	Eq. H2-1
	LC10 at 100.00%	0.12	OK	Eq. H2-1
	LC11 at 100.00%	0.15	OK	Eq. H2-1
	LC12 at 100.00%	0.18	OK	Eq. H2-1
	LC13 at 100.00%	0.15	OK	Eq. H2-1
	LC14 at 0.00%	0.12	OK	Eq. H2-1
	LC15 at 0.00%	0.08	OK	Eq. H2-1

LC16 at 100.00%	0.09	OK	Eq. H2-1
LC17 at 46.88%	0.07	OK	Sec. F1
LC18 at 46.88%	0.04	OK	Eq. H2-1
LC19 at 46.88%	0.05	OK	Eq. H2-1
LC2 at 0.00%	0.13	OK	Eq. H2-1
LC20 at 100.00%	0.08	OK	Eq. H2-1
LC21 at 100.00%	0.10	OK	Eq. H2-1
LC22 at 0.00%	0.10	OK	Eq. H2-1
LC23 at 100.00%	0.12	OK	Eq. H2-1
LC24 at 100.00%	0.15	OK	Eq. H2-1
LC25 at 100.00%	0.20	OK	Eq. H2-1
LC26 at 100.00%	0.18	OK	Eq. H2-1
LC27 at 100.00%	0.18	OK	Eq. H2-1
LC28 at 100.00%	0.19	OK	Eq. H2-1
LC29 at 100.00%	0.18	OK	Eq. H2-1
LC3 at 100.00%	0.10	OK	Eq. H2-1
LC30 at 100.00%	0.17	OK	Eq. H2-1
LC31 at 100.00%	0.17	OK	Eq. H2-1
LC32 at 100.00%	0.19	OK	Eq. H2-1
LC33 at 100.00%	0.19	OK	Eq. H2-1
LC34 at 100.00%	0.18	OK	Eq. H2-1
LC35 at 100.00%	0.20	OK	Eq. H2-1
LC36 at 100.00%	0.20	OK	Eq. H2-1
LC37 at 100.00%	0.09	OK	Eq. H2-1
LC38 at 100.00%	0.10	OK	Eq. H2-1
LC39 at 100.00%	0.16	OK	Eq. H2-1
LC4 at 100.00%	0.12	OK	Eq. H2-1
LC40 at 100.00%	0.23	OK	Eq. H2-1
LC41 at 100.00%	0.10	OK	Eq. H2-1
LC42 at 100.00%	0.10	OK	Eq. H2-1
LC43 at 100.00%	0.10	OK	Eq. H2-1
LC44 at 100.00%	0.10	OK	Eq. H2-1
LC45 at 100.00%	0.10	OK	Eq. H2-1
LC46 at 100.00%	0.10	OK	Eq. H2-1
LC47 at 100.00%	0.10	OK	Eq. H2-1
LC48 at 100.00%	0.10	OK	Eq. H2-1
LC49 at 100.00%	0.10	OK	Eq. H2-1
LC5 at 100.00%	0.08	OK	Eq. H2-1
LC50 at 100.00%	0.10	OK	Eq. H2-1
LC51 at 100.00%	0.10	OK	Eq. H2-1
LC52 at 100.00%	0.10	OK	Eq. H2-1
LC53 at 100.00%	0.12	OK	Eq. H2-1
LC54 at 100.00%	0.12	OK	Eq. H2-1
LC55 at 100.00%	0.12	OK	Eq. H2-1
LC56 at 100.00%	0.12	OK	Eq. H2-1
LC57 at 100.00%	0.12	OK	Eq. H2-1
LC58 at 100.00%	0.11	OK	Eq. H2-1
LC59 at 100.00%	0.11	OK	Eq. H2-1
LC6 at 100.00%	0.05	OK	Eq. H2-1
LC60 at 100.00%	0.12	OK	Eq. H2-1
LC61 at 100.00%	0.12	OK	Eq. H2-1
LC62 at 100.00%	0.12	OK	Eq. H2-1
LC63 at 100.00%	0.12	OK	Eq. H2-1
LC64 at 100.00%	0.12	OK	Eq. H2-1
LC65 at 100.00%	0.18	OK	Eq. H2-1
LC66 at 100.00%	0.18	OK	Eq. H2-1
LC67 at 100.00%	0.18	OK	Eq. H2-1
LC68 at 100.00%	0.18	OK	Eq. H2-1
LC69 at 100.00%	0.18	OK	Eq. H2-1
LC7 at 46.88%	0.06	OK	Eq. H2-1
LC70 at 100.00%	0.18	OK	Eq. H2-1
LC71 at 100.00%	0.18	OK	Eq. H2-1
LC72 at 100.00%	0.18	OK	Eq. H2-1
LC73 at 100.00%	0.18	OK	Eq. H2-1

	LC74 at 100.00%	0.18	OK	Eq. H2-1
	LC75 at 100.00%	0.18	OK	Eq. H2-1
	LC76 at 100.00%	0.18	OK	Eq. H2-1
	LC77 at 100.00%	0.26	OK	Eq. H2-1
	LC78 at 100.00%	0.26	OK	Eq. H2-1
	LC79 at 100.00%	0.26	OK	Eq. H2-1
	LC8 at 100.00%	0.11	OK	Eq. H2-1
	LC80 at 100.00%	0.26	OK	Eq. H2-1
	LC81 at 100.00%	0.26	OK	Eq. H2-1
	LC82 at 100.00%	0.26	OK	Eq. H2-1
	LC83 at 100.00%	0.26	OK	Eq. H2-1
	LC84 at 100.00%	0.26	OK	Eq. H2-1
	LC85 at 100.00%	0.26	OK	Eq. H2-1
	LC86 at 100.00%	0.26	OK	Eq. H2-1
	LC87 at 100.00%	0.26	OK	Eq. H2-1
	LC88 at 100.00%	**0.26**	**OK**	Eq. H2-1
	LC9 at 100.00%	0.13	OK	Eq. H2-1
	W180 at 100.00%	0.04	OK	Eq. H2-1
	W210 at 0.00%	0.06	OK	Eq. H2-1
	W240 at 50.00%	0.04	OK	Eq. H2-1
	W270 at 50.00%	0.04	OK	Eq. H2-1
	W300 at 50.00%	0.05	OK	Sec. F1
	W330 at 100.00%	0.04	OK	Eq. H2-1
	WI180 at 50.00%	0.02	OK	Sec. F1
	WI210 at 0.00%	0.02	OK	Eq. H2-1
	WI240 at 50.00%	0.02	OK	Eq. H2-1
	WI270 at 50.00%	0.02	OK	Eq. H2-1
	WI300 at 50.00%	0.02	OK	Sec. F1
	WI330 at 50.00%	0.02	OK	Sec. F1
	WL180 at 100.00%	0.00	OK	Eq. H2-1
	WL210 at 0.00%	0.01	OK	Eq. H2-1
	WL240 at 50.00%	0.00	OK	Eq. H2-1
	WL270 at 50.00%	0.00	OK	Eq. H2-1
	WL300 at 50.00%	0.00	OK	Sec. F1
	WL330 at 50.00%	0.00	OK	Sec. F1
17	LC1 at 0.00%	0.09	OK	Eq. H2-1
	LC10 at 0.00%	0.09	OK	Eq. H2-1
	LC11 at 0.00%	0.10	OK	Eq. H2-1
	LC12 at 50.00%	0.13	OK	Eq. H2-1
	LC13 at 50.00%	0.07	OK	Eq. H2-1
	LC14 at 50.00%	0.06	OK	Eq. H2-1
	LC15 at 0.00%	0.10	OK	Eq. H2-1
	LC16 at 0.00%	0.15	OK	Eq. H2-1
	LC17 at 0.00%	0.14	OK	Eq. H2-1
	LC18 at 0.00%	0.14	OK	Eq. H2-1
	LC19 at 0.00%	0.15	OK	Eq. H2-1
	LC2 at 0.00%	0.08	OK	Eq. H2-1
	LC20 at 0.00%	0.15	OK	Eq. H2-1
	LC21 at 0.00%	0.10	OK	Eq. H2-1
	LC22 at 0.00%	0.05	OK	Eq. H2-1
	LC23 at 50.00%	0.08	OK	Eq. H2-1
	LC24 at 50.00%	0.11	OK	Eq. H2-1
	LC25 at 0.00%	0.20	OK	Eq. H2-1
	LC26 at 0.00%	0.20	OK	Eq. H2-1
	LC27 at 0.00%	0.20	OK	Eq. H2-1
	LC28 at 0.00%	0.22	OK	Eq. H2-1
	LC29 at 0.00%	0.21	OK	Eq. H2-1
	LC3 at 0.00%	0.13	OK	Eq. H2-1
	LC30 at 0.00%	0.22	OK	Eq. H2-1
	LC31 at 0.00%	0.22	OK	Eq. H2-1
	LC32 at 0.00%	0.22	OK	Eq. H2-1
	LC33 at 0.00%	0.22	OK	Eq. H2-1
	LC34 at 0.00%	0.20	OK	Eq. H2-1

LC35 at 0.00%	0.21	OK	Eq. H2-1
LC36 at 0.00%	0.21	OK	Eq. H2-1
LC37 at 0.00%	0.10	OK	Eq. H2-1
LC38 at 0.00%	0.12	OK	Eq. H2-1
LC39 at 0.00%	0.19	OK	Eq. H2-1
LC4 at 0.00%	0.18	OK	Eq. H2-1
LC40 at 0.00%	0.27	OK	Eq. H2-1
LC41 at 0.00%	0.11	OK	Eq. H2-1
LC42 at 0.00%	0.11	OK	Eq. H2-1
LC43 at 0.00%	0.11	OK	Eq. H2-1
LC44 at 0.00%	0.11	OK	Eq. H2-1
LC45 at 0.00%	0.11	OK	Eq. H2-1
LC46 at 0.00%	0.11	OK	Eq. H2-1
LC47 at 0.00%	0.11	OK	Eq. H2-1
LC48 at 0.00%	0.11	OK	Eq. H2-1
LC49 at 0.00%	0.11	OK	Eq. H2-1
LC5 at 0.00%	0.17	OK	Eq. H2-1
LC50 at 0.00%	0.11	OK	Eq. H2-1
LC51 at 0.00%	0.11	OK	Eq. H2-1
LC52 at 0.00%	0.11	OK	Eq. H2-1
LC53 at 0.00%	0.13	OK	Eq. H2-1
LC54 at 0.00%	0.13	OK	Eq. H2-1
LC55 at 0.00%	0.13	OK	Eq. H2-1
LC56 at 0.00%	0.13	OK	Eq. H2-1
LC57 at 0.00%	0.13	OK	Eq. H2-1
LC58 at 0.00%	0.13	OK	Eq. H2-1
LC59 at 0.00%	0.14	OK	Eq. H2-1
LC6 at 0.00%	0.17	OK	Eq. H2-1
LC60 at 0.00%	0.14	OK	Eq. H2-1
LC61 at 0.00%	0.13	OK	Eq. H2-1
LC62 at 0.00%	0.13	OK	Eq. H2-1
LC63 at 0.00%	0.13	OK	Eq. H2-1
LC64 at 0.00%	0.13	OK	Eq. H2-1
LC65 at 0.00%	0.20	OK	Eq. H2-1
LC66 at 0.00%	0.20	OK	Eq. H2-1
LC67 at 0.00%	0.20	OK	Eq. H2-1
LC68 at 0.00%	0.21	OK	Eq. H2-1
LC69 at 0.00%	0.20	OK	Eq. H2-1
LC7 at 0.00%	0.18	OK	Eq. H2-1
LC70 at 0.00%	0.21	OK	Eq. H2-1
LC71 at 0.00%	0.21	OK	Eq. H2-1
LC72 at 0.00%	0.21	OK	Eq. H2-1
LC73 at 0.00%	0.21	OK	Eq. H2-1
LC74 at 0.00%	0.20	OK	Eq. H2-1
LC75 at 0.00%	0.20	OK	Eq. H2-1
LC76 at 0.00%	0.20	OK	Eq. H2-1
LC77 at 0.00%	0.30	OK	Eq. H2-1
LC78 at 0.00%	0.30	OK	Eq. H2-1
LC79 at 0.00%	0.30	OK	Eq. H2-1
LC8 at 0.00%	0.19	OK	Eq. H2-1
LC80 at 0.00%	0.30	OK	Eq. H2-1
LC81 at 0.00%	0.30	OK	Eq. H2-1
LC82 at 0.00%	0.30	OK	Eq. H2-1
LC83 at 0.00%	0.30	OK	Eq. H2-1
LC84 at 0.00%	**0.30**	**OK**	Eq. H2-1
LC85 at 0.00%	0.30	OK	Eq. H2-1
LC86 at 0.00%	0.30	OK	Eq. H2-1
LC87 at 0.00%	0.30	OK	Eq. H2-1
LC88 at 0.00%	0.30	OK	Eq. H2-1
LC9 at 0.00%	0.14	OK	Eq. H2-1
W180 at 0.00%	0.03	OK	Eq. H2-1
W210 at 100.00%	0.04	OK	Eq. H2-1
W240 at 100.00%	0.02	OK	Eq. H2-1
W270 at 50.00%	0.03	OK	Eq. H2-1

	W300 at 50.00%	0.03	OK	Eq. H2-1
	W330 at 50.00%	0.05	OK	Sec. F1
	WI180 at 50.00%	0.02	OK	Sec. F1
	WI210 at 50.00%	0.02	OK	Eq. H2-1
	WI240 at 50.00%	0.02	OK	Sec. F1
	WI270 at 50.00%	0.02	OK	Sec. F1
	WI300 at 50.00%	0.02	OK	Sec. F1
	WI330 at 50.00%	0.02	OK	Sec. F1
	WL180 at 100.00%	0.00	OK	Eq. H2-1
	WL210 at 50.00%	0.00	OK	Eq. H2-1
	WL240 at 50.00%	0.00	OK	Eq. H2-1
	WL270 at 50.00%	0.00	OK	Sec. F1
	WL300 at 50.00%	0.00	OK	Sec. F1
	WL330 at 50.00%	0.00	OK	Sec. F1
18	LC1 at 100.00%	0.14	OK	Eq. H2-1
	LC10 at 100.00%	0.07	OK	Eq. H2-1
	LC11 at 100.00%	0.13	OK	Eq. H2-1
	LC12 at 100.00%	0.17	OK	Eq. H2-1
	LC13 at 100.00%	0.12	OK	Eq. H2-1
	LC14 at 100.00%	0.06	OK	Eq. H2-1
	LC15 at 46.88%	0.06	OK	Eq. H2-1
	LC16 at 100.00%	0.07	OK	Eq. H2-1
	LC17 at 50.00%	0.08	OK	Sec. F1
	LC18 at 46.88%	0.06	OK	Eq. H2-1
	LC19 at 46.88%	0.04	OK	Eq. H2-1
	LC2 at 100.00%	0.09	OK	Eq. H2-1
	LC20 at 100.00%	0.06	OK	Eq. H2-1
	LC21 at 100.00%	0.07	OK	Eq. H2-1
	LC22 at 100.00%	0.05	OK	Eq. H2-1
	LC23 at 100.00%	0.11	OK	Eq. H2-1
	LC24 at 100.00%	0.14	OK	Eq. H2-1
	LC25 at 100.00%	0.15	OK	Eq. H2-1
	LC26 at 100.00%	0.12	OK	Eq. H2-1
	LC27 at 100.00%	0.12	OK	Eq. H2-1
	LC28 at 100.00%	0.13	OK	Eq. H2-1
	LC29 at 100.00%	0.11	OK	Eq. H2-1
	LC3 at 100.00%	0.07	OK	Eq. H2-1
	LC30 at 100.00%	0.11	OK	Eq. H2-1
	LC31 at 100.00%	0.11	OK	Eq. H2-1
	LC32 at 100.00%	0.13	OK	Eq. H2-1
	LC33 at 100.00%	0.13	OK	Eq. H2-1
	LC34 at 100.00%	0.12	OK	Eq. H2-1
	LC35 at 100.00%	0.14	OK	Eq. H2-1
	LC36 at 100.00%	0.15	OK	Eq. H2-1
	LC37 at 100.00%	0.06	OK	Eq. H2-1
	LC38 at 100.00%	0.23	OK	Eq. H2-1
	LC39 at 100.00%	0.12	OK	Eq. H2-1
	LC4 at 100.00%	0.09	OK	Eq. H2-1
	LC40 at 100.00%	0.07	OK	Eq. H2-1
	LC41 at 100.00%	0.27	OK	Eq. H2-1
	LC42 at 100.00%	0.26	OK	Eq. H2-1
	LC43 at 100.00%	0.26	OK	Eq. H2-1
	LC44 at 100.00%	0.26	OK	Eq. H2-1
	LC45 at 100.00%	0.26	OK	Eq. H2-1
	LC46 at 100.00%	0.26	OK	Eq. H2-1
	LC47 at 100.00%	0.26	OK	Eq. H2-1
	LC48 at 100.00%	0.26	OK	Eq. H2-1
	LC49 at 100.00%	0.26	OK	Eq. H2-1
	LC5 at 50.00%	0.08	OK	Sec. F1
	LC50 at 100.00%	0.26	OK	Eq. H2-1
	LC51 at 100.00%	0.27	OK	Eq. H2-1
	LC52 at 100.00%	**0.27**	**OK**	Eq. H2-1
	LC53 at 100.00%	0.08	OK	Eq. H2-1

	LC54 at 100.00%	0.08	OK	Eq. H2-1
	LC55 at 100.00%	0.08	OK	Eq. H2-1
	LC56 at 100.00%	0.08	OK	Eq. H2-1
	LC57 at 100.00%	0.08	OK	Eq. H2-1
	LC58 at 100.00%	0.08	OK	Eq. H2-1
	LC59 at 100.00%	0.08	OK	Eq. H2-1
	LC6 at 46.88%	0.06	OK	Eq. H2-1
	LC60 at 100.00%	0.08	OK	Eq. H2-1
	LC61 at 100.00%	0.08	OK	Eq. H2-1
	LC62 at 100.00%	0.08	OK	Eq. H2-1
	LC63 at 100.00%	0.09	OK	Eq. H2-1
	LC64 at 100.00%	0.09	OK	Eq. H2-1
	LC65 at 100.00%	0.14	OK	Eq. H2-1
	LC66 at 100.00%	0.13	OK	Eq. H2-1
	LC67 at 100.00%	0.13	OK	Eq. H2-1
	LC68 at 100.00%	0.14	OK	Eq. H2-1
	LC69 at 100.00%	0.13	OK	Eq. H2-1
	LC7 at 46.88%	0.05	OK	Eq. H2-1
	LC70 at 100.00%	0.13	OK	Eq. H2-1
	LC71 at 100.00%	0.13	OK	Eq. H2-1
	LC72 at 100.00%	0.14	OK	Eq. H2-1
	LC73 at 100.00%	0.14	OK	Eq. H2-1
	LC74 at 100.00%	0.13	OK	Eq. H2-1
	LC75 at 100.00%	0.14	OK	Eq. H2-1
	LC76 at 100.00%	0.14	OK	Eq. H2-1
	LC77 at 100.00%	0.07	OK	Eq. H2-1
	LC78 at 100.00%	0.06	OK	Eq. H2-1
	LC79 at 100.00%	0.06	OK	Eq. H2-1
	LC8 at 100.00%	0.08	OK	Eq. H2-1
	LC80 at 100.00%	0.07	OK	Eq. H2-1
	LC81 at 100.00%	0.06	OK	Eq. H2-1
	LC82 at 100.00%	0.06	OK	Eq. H2-1
	LC83 at 100.00%	0.06	OK	Eq. H2-1
	LC84 at 100.00%	0.07	OK	Eq. H2-1
	LC85 at 100.00%	0.07	OK	Eq. H2-1
	LC86 at 100.00%	0.06	OK	Eq. H2-1
	LC87 at 100.00%	0.07	OK	Eq. H2-1
	LC88 at 100.00%	0.07	OK	Eq. H2-1
	LC9 at 100.00%	0.09	OK	Eq. H2-1
	W180 at 100.00%	0.04	OK	Eq. H2-1
	W210 at 50.00%	0.02	OK	Sec. F1
	W240 at 50.00%	0.03	OK	Sec. F1
	W270 at 50.00%	0.02	OK	Sec. F1
	W300 at 50.00%	0.04	OK	Sec. F1
	W330 at 100.00%	0.05	OK	Eq. H2-1
	WI180 at 100.00%	0.02	OK	Eq. H2-1
	WI210 at 50.00%	0.01	OK	Eq. H3-8
	WI240 at 50.00%	0.01	OK	Sec. F1
	WI270 at 50.00%	0.01	OK	Sec. F1
	WI300 at 100.00%	0.02	OK	Eq. H2-1
	WI330 at 100.00%	0.02	OK	Eq. H2-1
	WL180 at 100.00%	0.00	OK	Eq. H2-1
	WL210 at 50.00%	0.00	OK	Eq. H3-8
	WL240 at 50.00%	0.00	OK	Sec. F1
	WL270 at 50.00%	0.00	OK	Sec. F1
	WL300 at 100.00%	0.00	OK	Eq. H2-1
	WL330 at 100.00%	0.00	OK	Eq. H2-1
19	LC1 at 50.00%	0.06	OK	Eq. H2-1
	LC10 at 0.00%	0.10	OK	Eq. H2-1
	LC11 at 0.00%	0.07	OK	Eq. H2-1
	LC12 at 50.00%	0.06	OK	Eq. H2-1
	LC13 at 50.00%	0.05	OK	Eq. H2-1
	LC14 at 0.00%	0.06	OK	Eq. H2-1

LC15 at 0.00%	0.06	OK	Eq. H2-1
LC16 at 0.00%	0.07	OK	Eq. H2-1
LC17 at 0.00%	0.09	OK	Eq. H2-1
LC18 at 0.00%	0.11	OK	Eq. H2-1
LC19 at 0.00%	0.13	OK	Eq. H2-1
LC2 at 0.00%	0.08	OK	Eq. H2-1
LC20 at 0.00%	0.08	OK	Eq. H2-1
LC21 at 0.00%	0.08	OK	Eq. H2-1
LC22 at 0.00%	0.07	OK	Eq. H2-1
LC23 at 0.00%	0.05	OK	Eq. H2-1
LC24 at 50.00%	0.05	OK	Eq. H2-1
LC25 at 0.00%	0.14	OK	Eq. H2-1
LC26 at 0.00%	0.14	OK	Eq. H2-1
LC27 at 0.00%	0.14	OK	Eq. H2-1
LC28 at 0.00%	0.15	OK	Eq. H2-1
LC29 at 0.00%	0.15	OK	Eq. H2-1
LC3 at 0.00%	0.08	OK	Eq. H2-1
LC30 at 0.00%	0.15	OK	Eq. H2-1
LC31 at 0.00%	0.15	OK	Eq. H2-1
LC32 at 0.00%	0.14	OK	Eq. H2-1
LC33 at 0.00%	0.15	OK	Eq. H2-1
LC34 at 0.00%	0.14	OK	Eq. H2-1
LC35 at 0.00%	0.14	OK	Eq. H2-1
LC36 at 0.00%	0.14	OK	Eq. H2-1
LC37 at 0.00%	0.07	OK	Eq. H2-1
LC38 at 0.00%	0.26	OK	Eq. H2-1
LC39 at 0.00%	0.14	OK	Eq. H2-1
LC4 at 0.00%	0.09	OK	Eq. H2-1
LC40 at 0.00%	0.08	OK	Eq. H2-1
LC41 at 0.00%	0.29	OK	Eq. H2-1
LC42 at 0.00%	0.29	OK	Eq. H2-1
LC43 at 0.00%	0.29	OK	Eq. H2-1
LC44 at 0.00%	0.29	OK	Eq. H2-1
LC45 at 0.00%	0.29	OK	Eq. H2-1
LC46 at 0.00%	0.29	OK	Eq. H2-1
LC47 at 0.00%	**0.30**	**OK**	Eq. H2-1
LC48 at 0.00%	0.29	OK	Eq. H2-1
LC49 at 0.00%	0.29	OK	Eq. H2-1
LC5 at 0.00%	0.11	OK	Eq. H2-1
LC50 at 0.00%	0.29	OK	Eq. H2-1
LC51 at 0.00%	0.29	OK	Eq. H2-1
LC52 at 0.00%	0.29	OK	Eq. H2-1
LC53 at 0.00%	0.09	OK	Eq. H2-1
LC54 at 0.00%	0.09	OK	Eq. H2-1
LC55 at 0.00%	0.09	OK	Eq. H2-1
LC56 at 0.00%	0.09	OK	Eq. H2-1
LC57 at 0.00%	0.09	OK	Eq. H2-1
LC58 at 0.00%	0.09	OK	Eq. H2-1
LC59 at 0.00%	0.10	OK	Eq. H2-1
LC6 at 0.00%	0.14	OK	Eq. H2-1
LC60 at 0.00%	0.09	OK	Eq. H2-1
LC61 at 0.00%	0.09	OK	Eq. H2-1
LC62 at 0.00%	0.09	OK	Eq. H2-1
LC63 at 0.00%	0.09	OK	Eq. H2-1
LC64 at 0.00%	0.09	OK	Eq. H2-1
LC65 at 0.00%	0.15	OK	Eq. H2-1
LC66 at 0.00%	0.15	OK	Eq. H2-1
LC67 at 0.00%	0.15	OK	Eq. H2-1
LC68 at 0.00%	0.15	OK	Eq. H2-1
LC69 at 0.00%	0.16	OK	Eq. H2-1
LC7 at 0.00%	0.16	OK	Eq. H2-1
LC70 at 0.00%	0.16	OK	Eq. H2-1
LC71 at 0.00%	0.16	OK	Eq. H2-1
LC72 at 0.00%	0.15	OK	Eq. H2-1

		LC73 at 0.00%	0.15	OK	Eq. H2-1
		LC74 at 0.00%	0.15	OK	Eq. H2-1
		LC75 at 0.00%	0.15	OK	Eq. H2-1
		LC76 at 0.00%	0.15	OK	Eq. H2-1
		LC77 at 0.00%	0.07	OK	Eq. H2-1
		LC78 at 0.00%	0.07	OK	Eq. H2-1
		LC79 at 0.00%	0.07	OK	Eq. H2-1
		LC8 at 0.00%	0.11	OK	Eq. H2-1
		LC80 at 0.00%	0.08	OK	Eq. H2-1
		LC81 at 0.00%	0.08	OK	Eq. H2-1
		LC82 at 0.00%	0.08	OK	Eq. H2-1
		LC83 at 0.00%	0.08	OK	Eq. H2-1
		LC84 at 0.00%	0.07	OK	Eq. H2-1
		LC85 at 0.00%	0.08	OK	Eq. H2-1
		LC86 at 0.00%	0.07	OK	Eq. H2-1
		LC87 at 0.00%	0.07	OK	Eq. H2-1
		LC88 at 0.00%	0.07	OK	Eq. H2-1
		LC9 at 0.00%	0.10	OK	Eq. H2-1
		W180 at 0.00%	0.04	OK	Eq. H2-1
		W210 at 0.00%	0.02	OK	Eq. H3-8
		W240 at 100.00%	0.01	OK	Eq. H3-8
		W270 at 100.00%	0.01	OK	Eq. H3-8
		W300 at 100.00%	0.04	OK	Eq. H3-8
		W330 at 50.00%	0.03	OK	Eq. H3-8
		WI180 at 50.00%	0.02	OK	Sec. F1
		WI210 at 50.00%	0.00	OK	Sec. F1
		WI240 at 50.00%	0.01	OK	Sec. F1
		WI270 at 50.00%	0.01	OK	Sec. F1
		WI300 at 50.00%	0.01	OK	Sec. F1
		WI330 at 50.00%	0.01	OK	Sec. F1
		WL180 at 0.00%	0.00	OK	Eq. H2-1
		WL210 at 50.00%	0.00	OK	Sec. F1
		WL240 at 50.00%	0.00	OK	Sec. F1
		WL270 at 50.00%	0.00	OK	Sec. F1
		WL300 at 50.00%	0.00	OK	Sec. F1
		WL330 at 50.00%	0.00	OK	Sec. F1
PIPE 2x0.154	**14**	LC1 at 33.33%	0.26	OK	Eq. H1-1b
		LC10 at 33.33%	0.08	OK	Eq. H1-1b
		LC11 at 33.33%	0.30	OK	Eq. H1-1b
		LC12 at 33.33%	**0.35**	**OK**	Eq. H1-1b
		LC13 at 33.33%	0.25	OK	Eq. H1-1b
		LC14 at 31.25%	0.22	OK	Eq. H1-1b
		LC15 at 31.25%	0.20	OK	Eq. H1-1b
		LC16 at 66.67%	0.07	OK	Eq. H1-1b
		LC17 at 33.33%	0.25	OK	Eq. H1-1b
		LC18 at 33.33%	0.30	OK	Eq. H1-1b
		LC19 at 64.58%	0.23	OK	Eq. H1-1b
		LC2 at 31.25%	0.22	OK	Eq. H1-1b
		LC20 at 31.25%	0.22	OK	Eq. H1-1b
		LC21 at 31.25%	0.20	OK	Eq. H1-1b
		LC22 at 66.67%	0.07	OK	Eq. H1-1b
		LC23 at 33.33%	0.30	OK	Eq. H1-1b
		LC24 at 33.33%	0.35	OK	Eq. H1-1b
		LC25 at 33.33%	0.16	OK	Eq. H1-1b
		LC26 at 33.33%	0.10	OK	Eq. H1-1b
		LC27 at 33.33%	0.10	OK	Eq. H1-1b
		LC28 at 33.33%	0.08	OK	Eq. H1-1b
		LC29 at 31.25%	0.08	OK	Eq. H1-1b
		LC3 at 31.25%	0.20	OK	Eq. H1-1b
		LC30 at 64.58%	0.09	OK	Eq. H1-1b
		LC31 at 64.58%	0.10	OK	Eq. H1-1b
		LC32 at 33.33%	0.10	OK	Eq. H1-1b
		LC33 at 33.33%	0.10	OK	Eq. H1-1b

LC34 at 33.33%	0.08	OK	Eq. H1-1b
LC35 at 33.33%	0.15	OK	Eq. H1-1b
LC36 at 33.33%	0.13	OK	Eq. H1-1b
LC37 at 33.33%	0.02	OK	Eq. H1-1b
LC38 at 33.33%	0.06	OK	Eq. H1-1b
LC39 at 33.33%	0.08	OK	Eq. H1-1b
LC4 at 66.67%	0.07	OK	Eq. H1-1b
LC40 at 33.33%	0.04	OK	Eq. H1-1b
LC41 at 33.33%	0.07	OK	Eq. H1-1b
LC42 at 33.33%	0.06	OK	Eq. H1-1b
LC43 at 33.33%	0.06	OK	Eq. H1-1b
LC44 at 64.58%	0.05	OK	Eq. H1-1b
LC45 at 64.58%	0.05	OK	Eq. H1-1b
LC46 at 64.58%	0.06	OK	Eq. H1-1b
LC47 at 64.58%	0.06	OK	Eq. H1-1b
LC48 at 64.58%	0.05	OK	Eq. H1-1b
LC49 at 64.58%	0.05	OK	Eq. H1-1b
LC5 at 33.33%	0.24	OK	Eq. H1-1b
LC50 at 33.33%	0.06	OK	Eq. H1-1b
LC51 at 33.33%	0.07	OK	Eq. H1-1b
LC52 at 33.33%	0.07	OK	Eq. H1-1b
LC53 at 33.33%	0.04	OK	Eq. H1-1b
LC54 at 33.33%	0.04	OK	Eq. H1-1b
LC55 at 33.33%	0.04	OK	Eq. H1-1b
LC56 at 33.33%	0.04	OK	Eq. H1-1b
LC57 at 64.58%	0.04	OK	Eq. H1-1b
LC58 at 64.58%	0.04	OK	Eq. H1-1b
LC59 at 64.58%	0.04	OK	Eq. H1-1b
LC6 at 33.33%	0.29	OK	Eq. H1-1b
LC60 at 33.33%	0.04	OK	Eq. H1-1b
LC61 at 33.33%	0.04	OK	Eq. H1-1b
LC62 at 33.33%	0.04	OK	Eq. H1-1b
LC63 at 33.33%	0.05	OK	Eq. H1-1b
LC64 at 33.33%	0.05	OK	Eq. H1-1b
LC65 at 33.33%	0.11	OK	Eq. H1-1b
LC66 at 33.33%	0.10	OK	Eq. H1-1b
LC67 at 33.33%	0.10	OK	Eq. H1-1b
LC68 at 33.33%	0.10	OK	Eq. H1-1b
LC69 at 64.58%	0.08	OK	Eq. H1-1b
LC7 at 64.58%	0.23	OK	Eq. H1-1b
LC70 at 64.58%	0.09	OK	Eq. H1-1b
LC71 at 64.58%	0.09	OK	Eq. H1-1b
LC72 at 33.33%	0.10	OK	Eq. H1-1b
LC73 at 33.33%	0.10	OK	Eq. H1-1b
LC74 at 33.33%	0.09	OK	Eq. H1-1b
LC75 at 33.33%	0.11	OK	Eq. H1-1b
LC76 at 33.33%	0.11	OK	Eq. H1-1b
LC77 at 33.33%	0.05	OK	Eq. H1-1b
LC78 at 64.58%	0.04	OK	Eq. H1-1b
LC79 at 64.58%	0.04	OK	Eq. H1-1b
LC8 at 31.25%	0.22	OK	Eq. H1-1b
LC80 at 33.33%	0.04	OK	Eq. H1-1b
LC81 at 64.58%	0.04	OK	Eq. H1-1b
LC82 at 64.58%	0.05	OK	Eq. H1-1b
LC83 at 64.58%	0.05	OK	Eq. H1-1b
LC84 at 33.33%	0.05	OK	Eq. H1-1b
LC85 at 33.33%	0.05	OK	Eq. H1-1b
LC86 at 64.58%	0.04	OK	Eq. H1-1b
LC87 at 33.33%	0.06	OK	Eq. H1-1b
LC88 at 33.33%	0.06	OK	Eq. H1-1b
LC9 at 31.25%	0.20	OK	Eq. H1-1b
W180 at 33.33%	0.14	OK	Eq. H1-1b
W210 at 31.25%	0.14	OK	Sec. F1
W240 at 31.25%	0.12	OK	Sec. F1

	W270 at 66.67%	0.04	OK	Sec. F1
	W300 at 33.33%	0.17	OK	Eq. H1-1b
	W330 at 33.33%	0.20	OK	Eq. H1-1b
	WI180 at 33.33%	0.12	OK	Eq. H1-1b
	WI210 at 31.25%	0.07	OK	Sec. F1
	WI240 at 31.25%	0.08	OK	Sec. F1
	WI270 at 31.25%	0.05	OK	Sec. F1
	WI300 at 33.33%	0.10	OK	Eq. H1-1b
	WI330 at 33.33%	0.08	OK	Eq. H1-1b
	WL180 at 33.33%	0.01	OK	Eq. H1-1b
	WL210 at 31.25%	0.02	OK	Sec. F1
	WL240 at 31.25%	0.02	OK	Sec. F1
	WL270 at 31.25%	0.01	OK	Sec. F1
	WL300 at 33.33%	0.02	OK	Eq. H1-1b
	WL330 at 33.33%	0.02	OK	Eq. H1-1b
22	LC1 at 45.31%	0.24	OK	Eq. H1-1b
	LC10 at 43.75%	0.43	OK	Eq. H1-1b
	LC11 at 34.38%	0.28	OK	Eq. H1-1b
	LC12 at 43.75%	0.36	OK	Eq. H1-1b
	LC13 at 43.75%	0.24	OK	Eq. H1-1b
	LC14 at 43.75%	0.42	OK	Eq. H1-1b
	LC15 at 43.75%	0.30	OK	Eq. H1-1b
	LC16 at 45.31%	0.49	OK	Eq. H1-1b
	LC17 at 43.75%	0.25	OK	Eq. H1-1b
	LC18 at 43.75%	0.36	OK	Eq. H1-1b
	LC19 at 43.75%	0.25	OK	Eq. H1-1b
	LC2 at 43.75%	0.43	OK	Eq. H1-1b
	LC20 at 45.31%	0.44	OK	Eq. H1-1b
	LC21 at 43.75%	0.28	OK	Eq. H1-1b
	LC22 at 43.75%	0.43	OK	Eq. H1-1b
	LC23 at 34.38%	0.27	OK	Eq. H1-1b
	LC24 at 43.75%	0.36	OK	Eq. H1-1b
	LC25 at 34.38%	0.17	OK	Eq. H1-1b
	LC26 at 43.75%	0.13	OK	Eq. H1-1b
	LC27 at 43.75%	0.12	OK	Eq. H1-1b
	LC28 at 45.31%	0.15	OK	Eq. H1-1b
	LC29 at 43.75%	0.11	OK	Eq. H1-1b
	LC3 at 43.75%	0.30	OK	Eq. H1-1b
	LC30 at 43.75%	0.10	OK	Eq. H1-1b
	LC31 at 43.75%	0.14	OK	Eq. H1-1b
	LC32 at 45.31%	0.17	OK	Eq. H1-1b
	LC33 at 45.31%	0.16	OK	Eq. H1-1b
	LC34 at 43.75%	0.11	OK	Eq. H1-1b
	LC35 at 45.31%	0.15	OK	Eq. H1-1b
	LC36 at 45.31%	0.14	OK	Eq. H1-1b
	LC37 at 65.63%	0.03	OK	Eq. H1-1b
	LC38 at 65.63%	0.07	OK	Eq. H1-1b
	LC39 at 65.63%	0.04	OK	Eq. H1-1b
	LC4 at 45.31%	**0.50**	**OK**	Eq. H1-1b
	LC40 at 45.31%	0.19	OK	Eq. H1-1b
	LC41 at 34.38%	0.08	OK	Eq. H1-1b
	LC42 at 34.38%	0.08	OK	Eq. H1-1b
	LC43 at 34.38%	0.08	OK	Eq. H1-1b
	LC44 at 65.63%	0.08	OK	Eq. H1-1b
	LC45 at 65.63%	0.08	OK	Eq. H1-1b
	LC46 at 65.63%	0.08	OK	Eq. H1-1b
	LC47 at 65.63%	0.08	OK	Eq. H1-1b
	LC48 at 65.63%	0.08	OK	Eq. H1-1b
	LC49 at 65.63%	0.08	OK	Eq. H1-1b
	LC5 at 43.75%	0.26	OK	Eq. H1-1b
	LC50 at 34.38%	0.08	OK	Eq. H1-1b
	LC51 at 34.38%	0.09	OK	Eq. H1-1b
	LC52 at 34.38%	0.09	OK	Eq. H1-1b

	LC53 at 45.31%	0.06	OK	Eq. H1-1b
	LC54 at 34.38%	0.05	OK	Eq. H1-1b
	LC55 at 34.38%	0.05	OK	Eq. H1-1b
	LC56 at 45.31%	0.06	OK	Eq. H1-1b
	LC57 at 65.63%	0.05	OK	Eq. H1-1b
	LC58 at 65.63%	0.05	OK	Eq. H1-1b
	LC59 at 65.63%	0.05	OK	Eq. H1-1b
	LC6 at 43.75%	0.36	OK	Eq. H1-1b
	LC60 at 45.31%	0.07	OK	Eq. H1-1b
	LC61 at 45.31%	0.06	OK	Eq. H1-1b
	LC62 at 34.38%	0.05	OK	Eq. H1-1b
	LC63 at 45.31%	0.06	OK	Eq. H1-1b
	LC64 at 45.31%	0.06	OK	Eq. H1-1b
	LC65 at 34.38%	0.07	OK	Eq. H1-1b
	LC66 at 65.63%	0.06	OK	Eq. H1-1b
	LC67 at 65.63%	0.06	OK	Eq. H1-1b
	LC68 at 34.38%	0.07	OK	Eq. H1-1b
	LC69 at 65.63%	0.07	OK	Eq. H1-1b
	LC7 at 43.75%	0.25	OK	Eq. H1-1b
	LC70 at 65.63%	0.07	OK	Eq. H1-1b
	LC71 at 65.63%	0.07	OK	Eq. H1-1b
	LC72 at 34.38%	0.07	OK	Eq. H1-1b
	LC73 at 34.38%	0.07	OK	Eq. H1-1b
	LC74 at 65.63%	0.06	OK	Eq. H1-1b
	LC75 at 34.38%	0.07	OK	Eq. H1-1b
	LC76 at 34.38%	0.07	OK	Eq. H1-1b
	LC77 at 34.38%	0.21	OK	Eq. H1-1b
	LC78 at 34.38%	0.21	OK	Eq. H1-1b
	LC79 at 34.38%	0.21	OK	Eq. H1-1b
	LC8 at 45.31%	0.44	OK	Eq. H1-1b
	LC80 at 65.63%	0.22	OK	Eq. H1-1b
	LC81 at 65.63%	0.22	OK	Eq. H1-1b
	LC82 at 65.63%	0.22	OK	Eq. H1-1b
	LC83 at 65.63%	0.22	OK	Eq. H1-1b
	LC84 at 45.31%	0.23	OK	Eq. H1-1b
	LC85 at 65.63%	0.22	OK	Eq. H1-1b
	LC86 at 34.38%	0.21	OK	Eq. H1-1b
	LC87 at 34.38%	0.22	OK	Eq. H1-1b
	LC88 at 34.38%	0.22	OK	Eq. H1-1b
	LC9 at 45.31%	0.29	OK	Eq. H1-1b
	W180 at 43.75%	0.15	OK	Eq. H1-1b
	W210 at 45.31%	0.27	OK	Eq. H1-1b
	W240 at 43.75%	0.18	OK	Eq. H1-1b
	W270 at 45.31%	0.29	OK	Eq. H1-1b
	W300 at 43.75%	0.15	OK	Eq. H1-1b
	W330 at 43.75%	0.22	OK	Eq. H1-1b
	WI180 at 43.75%	0.13	OK	Eq. H1-1b
	WI210 at 43.75%	0.10	OK	Eq. H1-1b
	WI240 at 43.75%	0.10	OK	Eq. H1-1b
	WI270 at 43.75%	0.09	OK	Eq. H1-1b
	WI300 at 43.75%	0.10	OK	Eq. H1-1b
	WI330 at 43.75%	0.09	OK	Eq. H1-1b
	WL180 at 43.75%	0.02	OK	Eq. H1-1b
	WL210 at 43.75%	0.03	OK	Eq. H1-1b
	WL240 at 43.75%	0.02	OK	Eq. H1-1b
	WL270 at 43.75%	0.02	OK	Eq. H1-1b
	WL300 at 43.75%	0.02	OK	Eq. H1-1b
	WL330 at 43.75%	0.02	OK	Eq. H1-1b
25	LC1 at 33.33%	0.15	OK	Eq. H1-1b
	LC10 at 66.67%	0.07	OK	Eq. H1-1b
	LC11 at 33.33%	0.12	OK	Eq. H1-1b
	LC12 at 33.33%	0.14	OK	Eq. H1-1b
	LC13 at 33.33%	0.15	OK	Eq. H1-1b

LC14 at 66.67%	0.10	OK	Eq. H1-1b
LC15 at 66.67%	0.08	OK	Eq. H1-1b
LC16 at 66.67%	0.07	OK	Eq. H1-1b
LC17 at 33.33%	0.10	OK	Eq. H1-1b
LC18 at 64.58%	0.13	OK	Eq. H1-1b
LC19 at 64.58%	0.15	OK	Eq. H1-1b
LC2 at 66.67%	0.10	OK	Eq. H1-1b
LC20 at 66.67%	0.10	OK	Eq. H1-1b
LC21 at 66.67%	0.08	OK	Eq. H1-1b
LC22 at 66.67%	0.07	OK	Eq. H1-1b
LC23 at 33.33%	0.11	OK	Eq. H1-1b
LC24 at 33.33%	0.14	OK	Eq. H1-1b
LC25 at 33.33%	0.05	OK	Eq. H1-1b
LC26 at 64.58%	0.04	OK	Eq. H1-1b
LC27 at 64.58%	0.04	OK	Eq. H1-1b
LC28 at 33.33%	0.03	OK	Eq. H1-1b
LC29 at 64.58%	0.04	OK	Eq. H1-1b
LC3 at 66.67%	0.08	OK	Eq. H1-1b
LC30 at 64.58%	0.04	OK	Eq. H1-1b
LC31 at 64.58%	0.05	OK	Eq. H1-1b
LC32 at 33.33%	0.04	OK	Eq. H1-1b
LC33 at 33.33%	0.03	OK	Eq. H1-1b
LC34 at 64.58%	0.03	OK	Eq. H1-1b
LC35 at 33.33%	0.04	OK	Eq. H1-1b
LC36 at 33.33%	0.04	OK	Eq. H1-1b
LC37 at 33.33%	0.01	OK	Eq. H1-1b
LC38 at 33.33%	0.17	OK	Eq. H1-1b
LC39 at 33.33%	0.07	OK	Eq. H1-1b
LC4 at 66.67%	0.07	OK	Eq. H1-1b
LC40 at 33.33%	0.03	OK	Eq. H1-1b
LC41 at 33.33%	**0.23**	**OK**	Eq. H1-1b
LC42 at 33.33%	0.22	OK	Eq. H1-1b
LC43 at 33.33%	0.22	OK	Eq. H1-1b
LC44 at 33.33%	0.23	OK	Eq. H1-1b
LC45 at 33.33%	0.21	OK	Eq. H1-1b
LC46 at 33.33%	0.22	OK	Eq. H1-1b
LC47 at 33.33%	0.22	OK	Eq. H1-1b
LC48 at 33.33%	0.23	OK	Eq. H1-1b
LC49 at 33.33%	0.23	OK	Eq. H1-1b
LC5 at 33.33%	0.10	OK	Eq. H1-1b
LC50 at 33.33%	0.22	OK	Eq. H1-1b
LC51 at 33.33%	0.23	OK	Eq. H1-1b
LC52 at 33.33%	0.23	OK	Eq. H1-1b
LC53 at 33.33%	0.02	OK	Eq. H1-1b
LC54 at 33.33%	0.01	OK	Eq. H1-1b
LC55 at 33.33%	0.01	OK	Eq. H1-1b
LC56 at 64.58%	0.01	OK	Eq. H1-1b
LC57 at 64.58%	0.02	OK	Eq. H1-1b
LC58 at 64.58%	0.02	OK	Eq. H1-1b
LC59 at 64.58%	0.02	OK	Eq. H1-1b
LC6 at 64.58%	0.13	OK	Eq. H1-1b
LC60 at 64.58%	0.01	OK	Eq. H1-1b
LC61 at 64.58%	0.01	OK	Eq. H1-1b
LC62 at 64.58%	0.01	OK	Eq. H1-1b
LC63 at 33.33%	0.02	OK	Eq. H1-1b
LC64 at 33.33%	0.02	OK	Eq. H1-1b
LC65 at 33.33%	0.09	OK	Eq. H1-1b
LC66 at 33.33%	0.08	OK	Eq. H1-1b
LC67 at 33.33%	0.08	OK	Eq. H1-1b
LC68 at 33.33%	0.08	OK	Eq. H1-1b
LC69 at 64.58%	0.08	OK	Eq. H1-1b
LC7 at 64.58%	0.15	OK	Eq. H1-1b
LC70 at 64.58%	0.08	OK	Eq. H1-1b
LC71 at 64.58%	0.08	OK	Eq. H1-1b

	LC72 at 33.33%	0.08	OK	Eq. H1-1b
	LC73 at 33.33%	0.08	OK	Eq. H1-1b
	LC74 at 33.33%	0.08	OK	Eq. H1-1b
	LC75 at 33.33%	0.09	OK	Eq. H1-1b
	LC76 at 33.33%	0.09	OK	Eq. H1-1b
	LC77 at 33.33%	0.04	OK	Eq. H1-1b
	LC78 at 64.58%	0.03	OK	Eq. H1-1b
	LC79 at 64.58%	0.03	OK	Eq. H1-1b
	LC8 at 66.67%	0.10	OK	Eq. H1-1b
	LC80 at 33.33%	0.03	OK	Eq. H1-1b
	LC81 at 64.58%	0.03	OK	Eq. H1-1b
	LC82 at 64.58%	0.03	OK	Eq. H1-1b
	LC83 at 64.58%	0.03	OK	Eq. H1-1b
	LC84 at 33.33%	0.03	OK	Eq. H1-1b
	LC85 at 33.33%	0.03	OK	Eq. H1-1b
	LC86 at 64.58%	0.03	OK	Eq. H1-1b
	LC87 at 33.33%	0.03	OK	Eq. H1-1b
	LC88 at 33.33%	0.04	OK	Eq. H1-1b
	LC9 at 66.67%	0.08	OK	Eq. H1-1b
	W180 at 64.58%	0.09	OK	Eq. H1-1b
	W210 at 66.67%	0.06	OK	Sec. F1
	W240 at 66.67%	0.05	OK	Sec. F1
	W270 at 66.67%	0.04	OK	Sec. F1
	W300 at 33.33%	0.07	OK	Eq. H1-1b
	W330 at 33.33%	0.08	OK	Eq. H1-1b
	WI180 at 33.33%	0.04	OK	Eq. H1-1b
	WI210 at 66.67%	0.02	OK	Sec. F1
	WI240 at 66.67%	0.02	OK	Sec. F1
	WI270 at 66.67%	0.02	OK	Sec. F1
	WI300 at 33.33%	0.03	OK	Eq. H1-1b
	WI330 at 33.33%	0.03	OK	Eq. H1-1b
	WL180 at 33.33%	0.01	OK	Eq. H1-1b
	WL210 at 66.67%	0.01	OK	Sec. F1
	WL240 at 66.67%	0.00	OK	Sec. F1
	WL270 at 66.67%	0.00	OK	Sec. F1
	WL300 at 33.33%	0.01	OK	Eq. H1-1b
	WL330 at 33.33%	0.01	OK	Eq. H1-1b
26	LC1 at 100.00%	0.05	OK	Eq. H1-1b
	LC10 at 100.00%	0.24	OK	Eq. H1-1b
	LC11 at 0.00%	0.13	OK	Eq. H1-1b
	LC12 at 0.00%	0.07	OK	Eq. H1-1b
	LC13 at 0.00%	0.06	OK	Eq. H1-1b
	LC14 at 100.00%	0.15	OK	Eq. H1-1b
	LC15 at 0.00%	0.11	OK	Eq. H1-1b
	LC16 at 100.00%	0.27	OK	Eq. H1-1b
	LC17 at 0.00%	0.20	OK	Eq. H1-1b
	LC18 at 0.00%	0.15	OK	Eq. H1-1b
	LC19 at 0.00%	0.11	OK	Eq. H1-1b
	LC2 at 100.00%	0.16	OK	Eq. H1-1b
	LC20 at 100.00%	0.19	OK	Eq. H1-1b
	LC21 at 0.00%	0.09	OK	Eq. H1-1b
	LC22 at 100.00%	0.22	OK	Eq. H1-1b
	LC23 at 0.00%	0.14	OK	Eq. H1-1b
	LC24 at 0.00%	0.08	OK	Eq. H1-1b
	LC25 at 100.00%	0.07	OK	Eq. H1-1b
	LC26 at 100.00%	0.11	OK	Eq. H1-1b
	LC27 at 100.00%	0.11	OK	Eq. H1-1b
	LC28 at 100.00%	0.11	OK	Eq. H1-1b
	LC29 at 0.00%	0.11	OK	Eq. H1-1b
	LC3 at 0.00%	0.12	OK	Eq. H1-1b
	LC30 at 0.00%	0.10	OK	Eq. H1-1b
	LC31 at 0.00%	0.12	OK	Eq. H1-1b
	LC32 at 100.00%	0.12	OK	Eq. H1-1b

LC33 at 100.00%	0.11	OK	Eq. H1-1b
LC34 at 100.00%	0.11	OK	Eq. H1-1b
LC35 at 100.00%	0.07	OK	Eq. H1-1b
LC36 at 100.00%	0.07	OK	Eq. H1-1b
LC37 at 100.00%	0.04	OK	Eq. H1-1b
LC38 at 100.00%	0.05	OK	Eq. H1-1b
LC39 at 100.00%	0.02	OK	Eq. H1-1b
LC4 at 100.00%	**0.28**	**OK**	Eq. H1-1b
LC40 at 100.00%	0.17	OK	Eq. H1-1b
LC41 at 100.00%	0.06	OK	Eq. H1-1b
LC42 at 100.00%	0.06	OK	Eq. H1-1b
LC43 at 100.00%	0.06	OK	Eq. H1-1b
LC44 at 100.00%	0.06	OK	Eq. H1-1b
LC45 at 100.00%	0.06	OK	Eq. H1-1b
LC46 at 100.00%	0.06	OK	Eq. H1-1b
LC47 at 100.00%	0.06	OK	Eq. H1-1b
LC48 at 100.00%	0.07	OK	Eq. H1-1b
LC49 at 100.00%	0.06	OK	Eq. H1-1b
LC5 at 0.00%	0.21	OK	Eq. H1-1b
LC50 at 100.00%	0.06	OK	Eq. H1-1b
LC51 at 100.00%	0.06	OK	Eq. H1-1b
LC52 at 100.00%	0.06	OK	Eq. H1-1b
LC53 at 100.00%	0.05	OK	Eq. H1-1b
LC54 at 100.00%	0.06	OK	Eq. H1-1b
LC55 at 100.00%	0.06	OK	Eq. H1-1b
LC56 at 100.00%	0.06	OK	Eq. H1-1b
LC57 at 100.00%	0.06	OK	Eq. H1-1b
LC58 at 100.00%	0.06	OK	Eq. H1-1b
LC59 at 100.00%	0.06	OK	Eq. H1-1b
LC6 at 0.00%	0.16	OK	Eq. H1-1b
LC60 at 100.00%	0.06	OK	Eq. H1-1b
LC61 at 100.00%	0.06	OK	Eq. H1-1b
LC62 at 100.00%	0.06	OK	Eq. H1-1b
LC63 at 100.00%	0.05	OK	Eq. H1-1b
LC64 at 100.00%	0.05	OK	Eq. H1-1b
LC65 at 100.00%	0.01	OK	Eq. H1-1b
LC66 at 100.00%	0.02	OK	Eq. H1-1b
LC67 at 100.00%	0.02	OK	Eq. H1-1b
LC68 at 100.00%	0.02	OK	Eq. H1-1b
LC69 at 6.25%	0.02	OK	Eq. H1-1b
LC7 at 0.00%	0.12	OK	Eq. H1-1b
LC70 at 6.25%	0.02	OK	Eq. H1-1b
LC71 at 12.50%	0.02	OK	Eq. H1-1b
LC72 at 100.00%	0.03	OK	Eq. H1-1b
LC73 at 100.00%	0.02	OK	Eq. H1-1b
LC74 at 100.00%	0.02	OK	Eq. H1-1b
LC75 at 100.00%	0.01	OK	Eq. H1-1b
LC76 at 100.00%	0.01	OK	Eq. H1-1b
LC77 at 100.00%	0.19	OK	Eq. H1-1b
LC78 at 100.00%	0.19	OK	Eq. H1-1b
LC79 at 100.00%	0.19	OK	Eq. H1-1b
LC8 at 100.00%	0.20	OK	Eq. H1-1b
LC80 at 100.00%	0.20	OK	Eq. H1-1b
LC81 at 100.00%	0.19	OK	Eq. H1-1b
LC82 at 100.00%	0.19	OK	Eq. H1-1b
LC83 at 100.00%	0.19	OK	Eq. H1-1b
LC84 at 100.00%	0.20	OK	Eq. H1-1b
LC85 at 100.00%	0.20	OK	Eq. H1-1b
LC86 at 100.00%	0.19	OK	Eq. H1-1b
LC87 at 100.00%	0.19	OK	Eq. H1-1b
LC88 at 100.00%	0.19	OK	Eq. H1-1b
LC9 at 0.00%	0.10	OK	Eq. H1-1b
W180 at 0.00%	0.05	OK	Eq. H1-1b
W210 at 0.00%	0.10	OK	Eq. H1-1b

W240 at 0.00%	0.05	OK	Eq. H1-1b
W270 at 100.00%	0.14	OK	Eq. H1-1b
W300 at 0.00%	0.11	OK	Eq. H1-1b
W330 at 0.00%	0.07	OK	Eq. H1-1b
WI180 at 0.00%	0.05	OK	Eq. H1-1b
WI210 at 100.00%	0.04	OK	Eq. H1-1b
WI240 at 100.00%	0.04	OK	Eq. H1-1b
WI270 at 0.00%	0.03	OK	Eq. H1-1b
WI300 at 0.00%	0.03	OK	Eq. H1-1b
WI330 at 0.00%	0.03	OK	Eq. H1-1b
WL180 at 0.00%	0.01	OK	Eq. H1-1b
WL210 at 100.00%	0.01	OK	Eq. H1-1b
WL240 at 100.00%	0.01	OK	Eq. H1-1b
WL270 at 100.00%	0.01	OK	Eq. H1-1b
WL300 at 0.00%	0.01	OK	Eq. H1-1b
WL330 at 0.00%	0.01	OK	Eq. H1-1b

Bentley

Current Date: 6/5/2018 3:01 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2040\CT2040.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
2	10.4167	0.00	0.00	0
3	5.2084	0.00	0.00	0
4	5.2084	0.00	-3.00	0
5	8.7084	0.00	0.00	0
6	1.7084	0.00	0.00	0
7	0.00	3.00	0.00	0
8	10.4167	3.00	0.00	0
9	5.2084	3.00	0.00	0
10	5.2084	3.00	-3.00	0
11	8.7084	3.00	0.00	0
12	1.7084	3.00	0.00	0
21	5.2084	0.00	0.20	0
22	5.2084	3.00	0.20	0
24	5.2084	6.00	0.20	0
27	5.2084	-3.00	0.20	0
29	2.4084	3.00	-0.60	0
32	4.5084	3.00	-2.40	0
33	4.5084	0.00	-2.40	0
36	2.4084	0.00	-0.60	0
37	8.0084	3.00	-0.60	0
40	5.9084	3.00	-2.40	0

41	8.0084	0.00	-0.60	0
44	5.9084	0.00	-2.40	0
45	0.00	0.00	0.20	0
46	0.00	3.00	0.20	0
47	0.00	6.00	0.20	0
48	0.00	-3.00	0.20	0
49	10.4167	0.00	0.20	0
50	10.4167	3.00	0.20	0
51	10.4167	6.00	0.20	0
52	10.4167	-3.00	0.20	0
53	0.00	1.00	0.20	0
54	2.00	1.00	-4.80	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
4	1	1	1	1	1	1
10	1	1	1	1	1	1
54	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	2		L 3X3X3_16	A36	0.00	0.00	0.00
2	4	6		L 3X3X3_16	A36	0.00	0.00	0.00
3	4	5		L 3X3X3_16	A36	0.00	0.00	0.00
4	7	8		L 3X3X3_16	A36	0.00	0.00	0.00
5	10	12		L 3X3X3_16	A36	0.00	0.00	0.00
6	10	11		L 3X3X3_16	A36	0.00	0.00	0.00
14	27	24		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
16	32	36		L 3X3X3_16	A36	0.00	0.00	0.00
17	29	33		L 3X3X3_16	A36	0.00	0.00	0.00
18	40	41		L 3X3X3_16	A36	0.00	0.00	0.00
19	37	44		L 3X3X3_16	A36	0.00	0.00	0.00
22	48	47		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
25	52	51		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
26	53	54		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	270.00	0	0.00	0.00	0.00
3	270.00	0	0.00	0.00	0.00
4	180.00	0	0.00	0.00	0.00
5	90.00	0	0.00	0.00	0.00
6	180.00	0	0.00	0.00	0.00
18	270.00	0	0.00	0.00	0.00
19	270.00	0	0.00	0.00	0.00

Town of Hamden, CT

Property Listing Report | Map Block Lot 2526-011-01-0000 | Account

Property Information

Property Location	191 BENHAM ST
Owner	APOSTLES OF THE SACRED HEART
Co-Owner	
Mailing Address	265 BENHAM ST HAMDEN CT 06514
Land Use	431V CELL SITE M00
Land Class	I
Zoning Code	R3
Census Tract	6
Sub Lot	
Neighborhood	100
Acreage	0
Lot Setting/Desc	Suburban Above Street
Survey Map	
Utilities	Public Water,Public Sewer,Gas/Electric
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	
Total Living Area	

Report Created On 9/1/2016

Town of Hamden, CT

Property Listing Report | **Map Block Lot** 2526-011-01-0000 | **Account**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras		
Outbuildings		
Land		
Total		

Outbuilding and Extra Items

Type	Description
SHED COM MAS	240.00 S.F.
SHED COM MAS	360.00 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

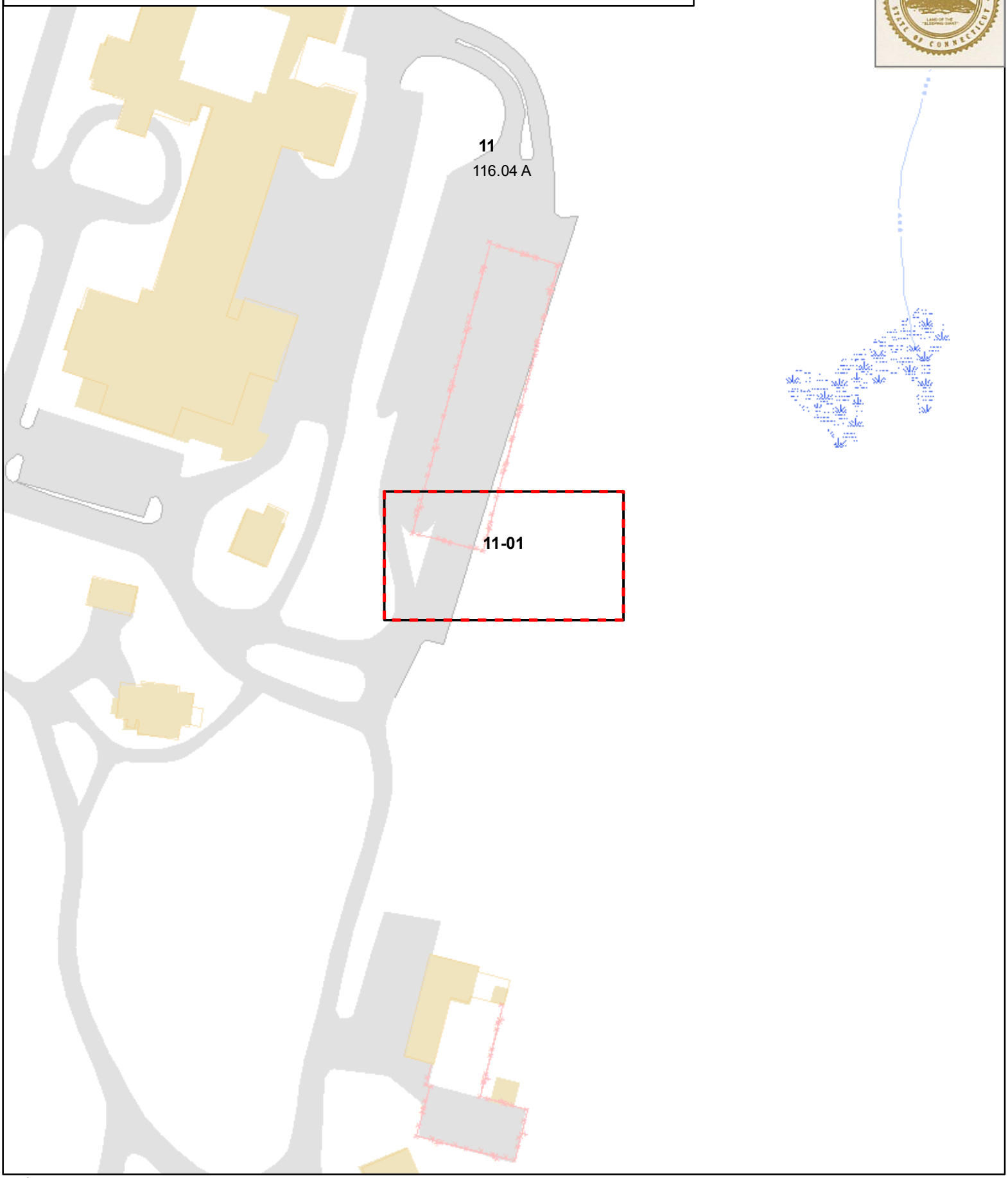
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
APOSTLES OF THE SACRED HEART	726/ 301	6/13/1985	

Report Created On 9/1/2016

Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 2526-011-01-0000 Address: 191 BENHAM ST



N

Approximate Scale: **1 inch = 100 feet**

0 50 100 150 200 Feet

TOWN OF HAMDEN

CONNECTICUT

August 24, 2000

New Haven Register
40 Sargent Drive
New Haven, CT. 06511
Attn: Judy

FAX# 865-8360
Bill: 287-2592

RE: LEGAL NOTICE TO APPEAR IN THE NEW HAVEN REGISTER ON TUESDAY, AUGUST 29, 2000.

DP71964 – Special Meetings and Public Hearings were held on Tuesday, August 22, 2000 starting at 7:30 p.m. of the **Zoning Section**, and the **Planning Section**, and the **Planning & Zoning Commission**. All meetings were held in the Council Chambers, Memorial Town Hall and the following actions were taken:

1. Site Plan/WS 00-1267. 2582 Whitney Ave. B-1. Restaurant expansion from 61 to 108 seats. Whitney & Hawthorne LLC., Property Owner. ZaRus Grille, Applicant. **APPROVED WITH CONDITIONS.**

2. Site Plan/WS 00-1272. 720 Sherman Ave. M-1. Expansion of existing manufacturing/office. Amphenol Corporation , Property Owner. Paul Pizzo, Applicant. **APPROVED WITH CONDITIONS.**

3. Site Plan 00-1276. 2039 Dixwell Ave. CDD-1. Laundromat/Dry Cleaners. Rosalie Lambert Family Trust, Owner. **APPROVED WITH CONDITIONS.**

4. Site Plan 00-1257. 265 Benham St. R-3. Telecommunication Antenna. Sandy Carter, Applicant. **APPROVED WITH CONDITIONS.**

5. Resubdivision 00-1201. High Ridge Rd. R-2. 2 lots. Leslie Corey, Property Owner. Leslie Corey, Applicant. **APPROVED WITH CONDITIONS.**

6. Resubdivision/WS/FP 00-1202. Chatterton Way. Lot #1. R-2. Natalie Wheatley, Property Owner and Applicant. **APPROVED WITH CONDITIONS.**

MINUTES: THE ZONING SECTION, Planning & Zoning Commission, Town of Hamden, held a Special Meeting on Tuesday, August 22, 2000 in the Council Chambers, Memorial Town Hall, immediately following the Planning and Zoning Commission meeting. The following issues were discussed:

Connolly Parkway frontage. Mr. Thompson said he has not seen that letter. Mr. O'Brien said the bond is $3,350. The RWA submitted a letter today asking that their inspectors continue to be granted access to the site. Mr. Ingengro said he believes the items the Town Engineer is asking for were completed a year ago, and he feels the sidewalk was revisited with the prior Town Planner and they were not required to replace the sidewalk, but to repair it. The previous applicant posted the bond. Mr. O'Brien asked the property owner if he would be willing to replace 100' of sidewalk. Mr. Lambert, the property owner, said they did 100' of sidewalk when Auto Tune filed their application. If the engineering detail is not on file Mr. Lambert is willing to submit it.

Mr. Crocco said Mr. Savarese's conditions should be made part of the motion. Mr. Crocco said the applicant will provide the information requested by Mr. Savarese. The sidewalk must be inspected and there is already a bond.

Mr. McDonagh made a motion to approve Site Plan 00-1276 subject to the following conditions:

Prior to the issuance of a Zoning Permit, the applicant must:

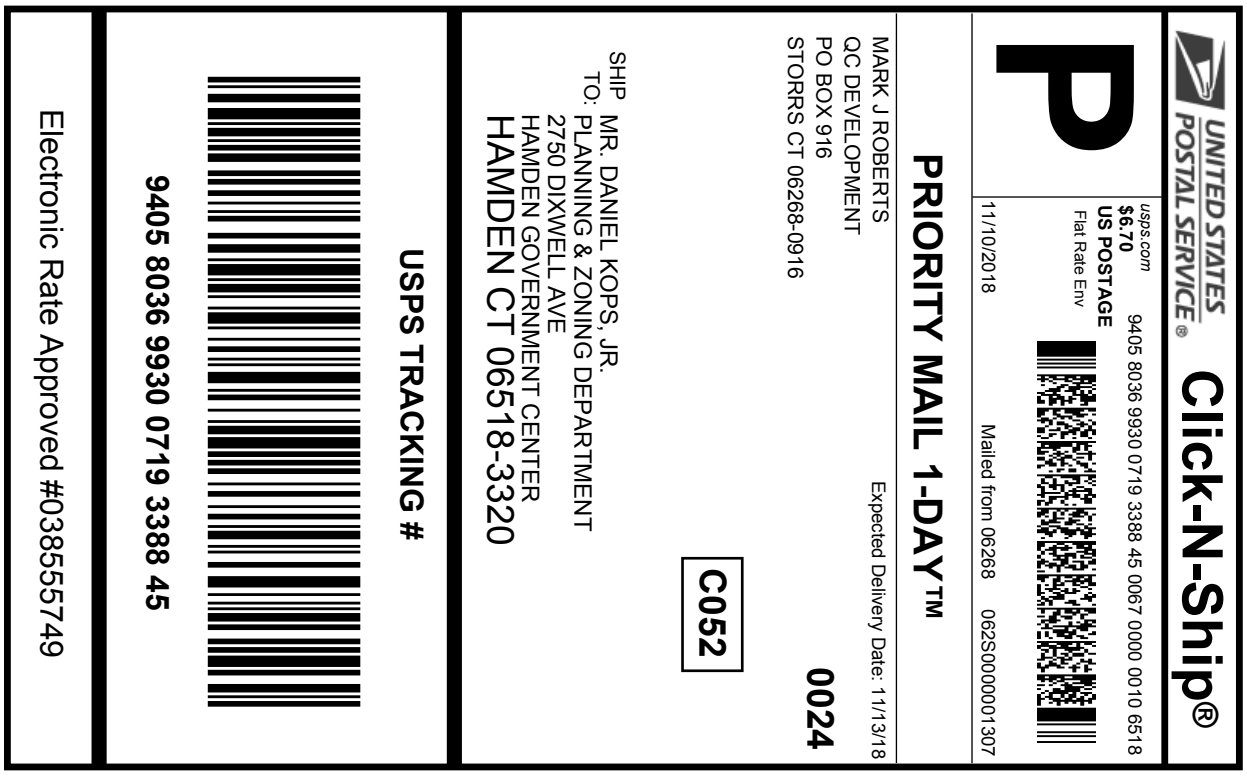
1. **Submit an easement from 27 Connolly Parkway for the common driveway:**
2. **Submit landscaping details for approval of the Town Planner;**
3. **Post a bond in an amount estimated by the applicant and approved by the Town Planner;**
4. **Submit drainage information from previous application.**
5. **The sidewalk must be inspected and repaired or replaced as necessary.**

Mr. Sims seconded the motion. The vote was unanimous, in favor.

Mr. Thompson said they are making no substantial changes to the site and the landscaping is existing.

4. Site Plan 00-1257
   265 Benham Street, R-3 Zone
   Telecommunication Antenna
   Sandy Carter, Agent
   Verizon Cellular, Applicant

Mr. O'Brien said the Town Police and Fire Departments entered into agreement between Verizon Telecommunications and the Sisters at Sacred Heart Academy, and if the Town Police and Fire antennas are going to be on the tower, the tower is not subject to zoning. This Commission approved an 8-24, which went to the Council and was approved and then signed by the Mayor.



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Trans. #:	448295350
Print Date:	11/08/2018
Ship Date:	11/10/2018
Expected Delivery Date:	11/13/2018
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: MR. DANIEL KOPS, JR.
PLANNING & ZONING DEPARTMENT
2750 DIXWELL AVE
HAMDEN GOVERNMENT CENTER
HAMDEN CT 06518-3320

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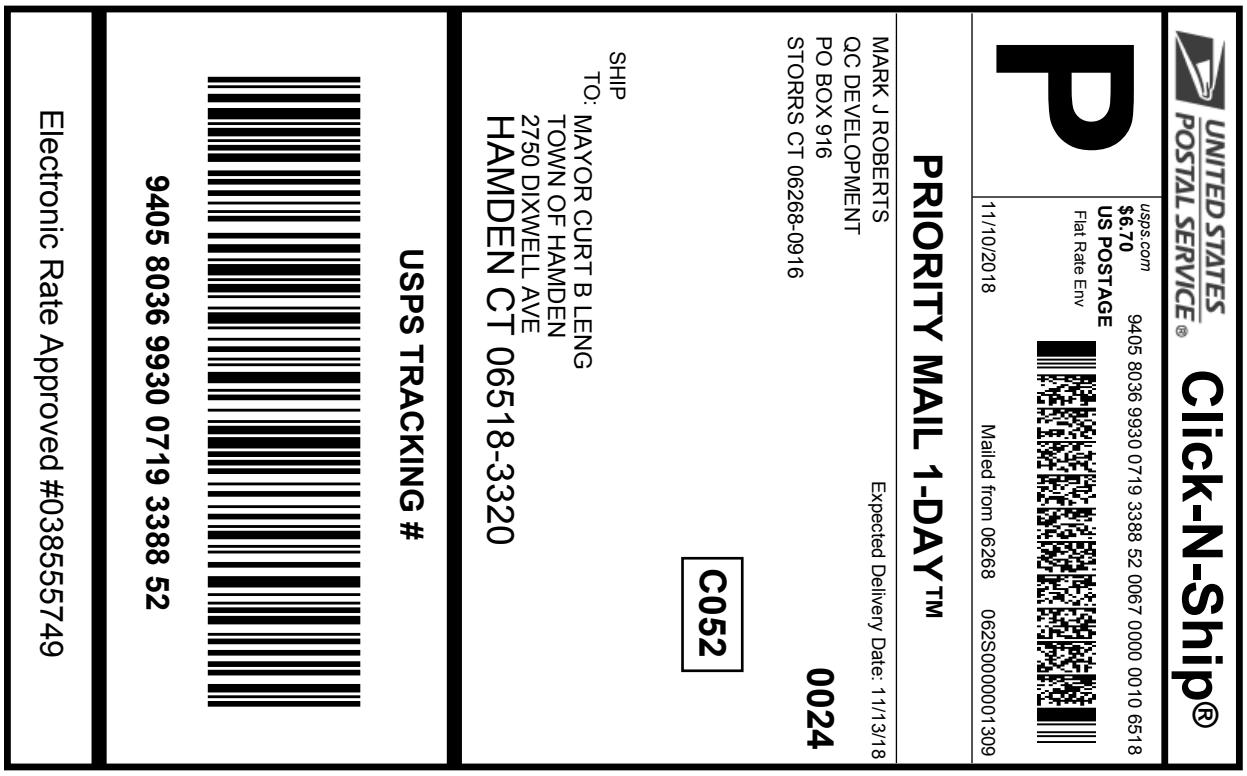

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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0719 3388 52

Trans. #:	448295350
Print Date:	11/08/2018
Ship Date:	11/10/2018
Expected Delivery Date:	11/13/2018
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 CURT B LENG
TOWN OF HAMDEN
2750 DIXWELL AVE
HAMDEN CT 06518-3320

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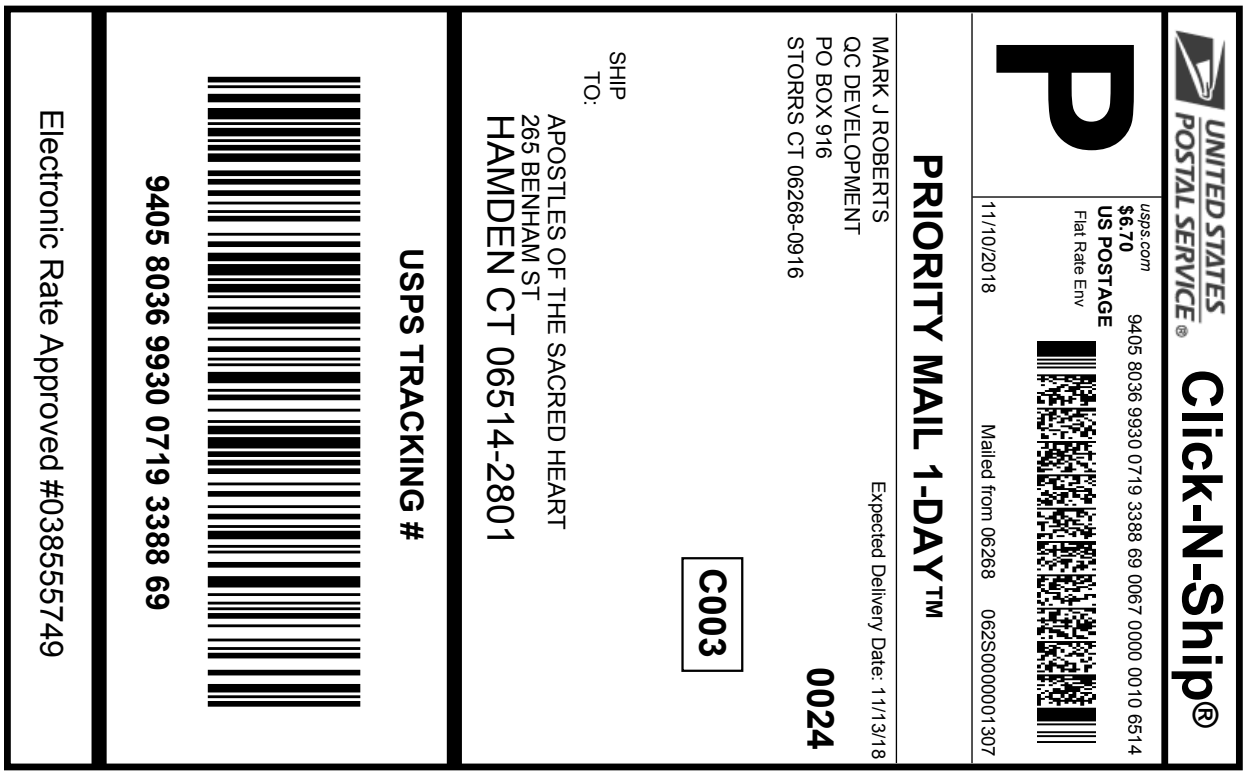

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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0719 3388 69

Trans. #:	448295350
Print Date:	11/08/2018
Ship Date:	11/10/2018
Expected Delivery Date:	11/13/2018
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: APOSTLES OF THE SACRED HEART
265 BENHAM ST
HAMDEN CT 06514-2801

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