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

July 20, 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) – CT0968
303 Boxwood Lane, Danbury, CT 06811
N 41.39497222
W 73.48674267

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 98-foot level of the existing 100-foot Self Support Tower at 303 Boxwood Lane, Danbury, CT. The tower and property are owned by the State of Connecticut (WCSU). AT&T now intends to install (3) Andrew antennas, (3) Ericsson RRUS-32 B66, (3) RRUS-E2 and (3) RRUS-12. AT&T will also remove (3) Ericsson RRUS-12 /A2 and replace them with (3) RRUS-32 B2. The new antennas and RRUs will all be installed at the 98-foot level of the tower.

This facility was approved by the Siting Council in Docket # 176 on October 21, 1996. This approval included no condition(s) 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 Mark D. Boughton, Mayor of the City of Danbury, and the Danbury Planning & Zoning

Department, as well as the tower and property 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.

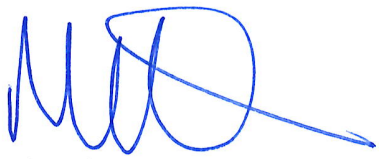
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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: Mark D. Boughton - as Elected Official
Sharon Calitro – Director of Planning & Zoning
John Murphy – WCSU, as Tower/Property Owner

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT0968

Danbury Boxwood Lane
303 Boxwood Lane
Danbury, CT 06811

July 17, 2018

EBI Project Number: 6218004980

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	41.50 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

July 17, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT0968 – Danbury Boxwood Lane**

EBI Consulting was directed to analyze the proposed AT&T facility located at **303 Boxwood Lane, Danbury, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **303 Boxwood Lane, Danbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 LTE channels (2300 MHz (WCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 4 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 4 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 4 LTE channels (2100 MHz (AWS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **CCI OPA-65R-LCUU-H4 and the Commscope SBNHH-1D65A** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerlines of the proposed antennas are **98 feet** above ground level (AGL) for **Sector A**, **98 feet** above ground level (AGL) for **Sector B** and **98 feet** above ground level (AGL) for Sector C.

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4
Gain:	11.15 / 14.65 dBd	Gain:	11.15 / 14.65 dBd	Gain:	11.15 / 14.65 dBd
Height (AGL):	**98 feet**	Height (AGL):	**98 feet**	Height (AGL):	**98 feet**
Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts
ERP (W):	4,282.81	ERP (W):	4,282.81	ERP (W):	4,282.81
Antenna A1 MPE%	**2.07 %**	Antenna B1 MPE%	**2.07 %**	Antenna C1 MPE%	**2.07 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4
Gain:	10.55 / 13.55 / 11.15 dBd	Gain:	10.55 / 13.55 / 11.15 dBd	Gain:	10.55 / 13.55 / 11.15 dBd
Height (AGL):	**98 feet**	Height (AGL):	**98 feet**	Height (AGL):	**98 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS) / 850 MHz	Frequency Bands	700 MHz / 1900 MHz (PCS) / 850 MHz	Frequency Bands	700 MHz / 1900 MHz (PCS) / 850 MHz
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	320 Watts	Total TX Power(W):	320 Watts	Total TX Power(W):	320 Watts
ERP (W):	5,573.97	ERP (W):	5,573.97	ERP (W):	5,573.97
Antenna A2 MPE%	**3.15 %**	Antenna B2 MPE%	**3.15 %**	Antenna C2 MPE%	**3.15 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope SBNHH-1D65A	Make / Model:	Commscope SBNHH-1D65A	Make / Model:	Commscope SBNHH-1D65A
Gain:	10.85 / 14.65 dBd	Gain:	10.85 / 14.65 dBd	Gain:	10.85 / 14.65 dBd
Height (AGL):	**98 feet**	Height (AGL):	**98 feet**	Height (AGL):	**98 feet**
Frequency Bands	700 MHz / 2100 MHz (AWS)	Frequency Bands	700 MHz / 2100 MHz (AWS)	Frequency Bands	700 MHz / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts
ERP (W):	4,473.86	ERP (W):	4,473.86	ERP (W):	4,473.86
Antenna A3 MPE%	**2.37 %**	Antenna B3 MPE%	**2.37 %**	Antenna C3 MPE%	**2.37 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**7.59 %**
Sprint	7.72 %
T-Mobile	10.69 %
WCXI	15.50 %
Site Total MPE %:	**41.50 %**

AT&T Sector A Total:	7.59 %
AT&T Sector B Total:	7.59 %
AT&T Sector C Total:	7.59 %
Site Total:	41.50 %

AT&T Max Values Per Sector:

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	390.95	98	3.32	850 MHz	567	0.58%
AT&T 2300 MHz (WCS) LTE – Antenna 1	4	875.23	98	14.87	2300 MHz (WCS)	1000	1.49%
AT&T 700 MHz LTE – Antenna 2	2	454.00	98	3.86	700 MHz	467	0.83%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	905.86	98	15.39	1900 MHz (PCS)	1000	1.54%
AT&T 850 MHz LTE – Antenna 2	2	521.27	98	4.43	850 MHz	567	0.78%
AT&T 700 MHz LTE – Antenna 3	2	486.47	98	4.13	700 MHz	467	0.88%
AT&T 2100 MHz (AWS) LTE – Antenna 3	4	875.23	98	14.87	2100 MHz (AWS)	1000	1.49%
						Total:	**7.59%**

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	7.59 %
Sector B:	7.59 %
Sector C:	7.59 %
AT&T Maximum Total (per sector):	7.59 %
Site Total:	41.50 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **41.50 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

PROJECT INFORMATION

SCOPE OF WORK:	TOP – INSTALL (3) 4' HEXPORT ANTENNAS IN POSITION 4, (3) RRUS–E2, (3) RRUS–32 B66 & (3) 850 RRUS–12. REPLACE (3) 1900 RRUS–11 & A2 UMTS WITH (3) RRUS–32 B2. INSTALL (1) SQUID, (1) FIBER & (2) DC CABLES. BOTTOM – REPLACE BB WITH (2) RBS 5216. INSTALL 2ND XMU & IDLE CABLE.
SITE ADDRESS:	303 BOXWOOD LANE DANBURY, CT 06811
LATITUDE:	41° 23' 40.99" N (NAD 83)*
LONGITUDE:	73° 29' 12.00" W (NAD 83)* *PER RFDS
JURISDICTION:	CITY OF DANBURY
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NAME OF APPLICANT:	AT&T MOBILITY 550 COCHITUATE ROAD SUITES 13 & 14 FRAMINGHAM, MA 01701

at&t Mobility

SITE NAME: DANBURY BOXWOOD LANE 4C/5C/6C/RETROFIT
SITE NUMBER: CT0968
PACE NO.: MRCTB026993 (4C) / MRCTB026995 (5C) / MRCTB027001 (6C) / MRCTB027255 (RETROFIT)

DRAWING INDEX

		REV
T01	TITLE SHEET	0
G01	GENERAL NOTES	0
C01	PROPOSED SITE & SHELTER PLAN	0
C02	PROPOSED ELEVATION & CONSTRUCTION DETAILS	0
C03	EQUIPMENT PLUMBING DIAGRAM	0
E01	GROUNDING NOTES & DETAILS	0

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:

1. AS REQUIRED UNDER TIA/EIA 222H – STANDARD, SAI COMMUNICATIONS SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED CONNECTICUT STRUCTURAL ENGINEER CERTIFYING THAT, THE EXISTING TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, SUPPORTS AND APPURTENANCES AND COMPLIES WITH THE CURRENT CONNECTICUT STATE BUILDING CODE AND EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

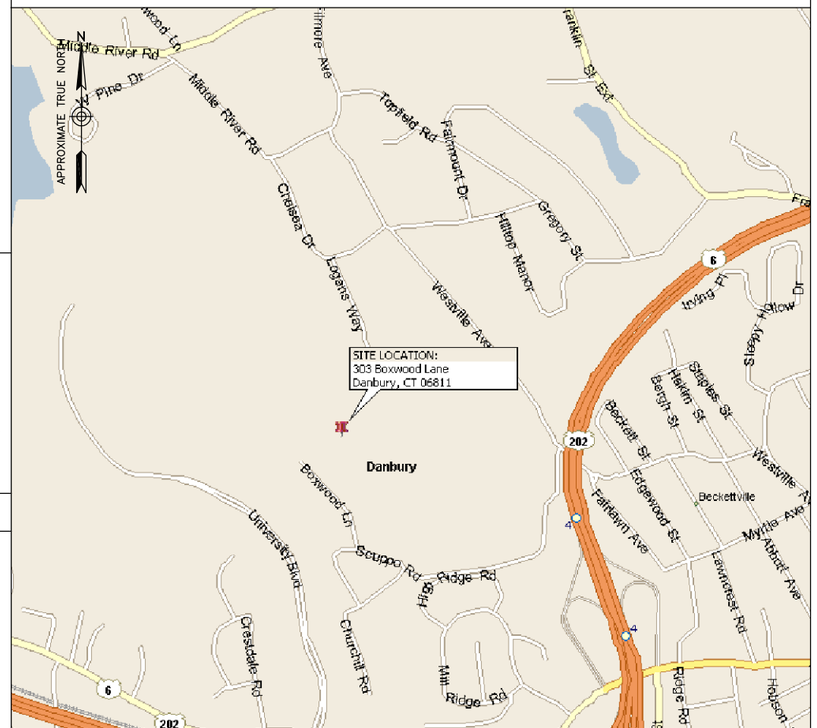
CONTACT & UTILITY INFORMATION

CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	BENJAMIN REVETTE, P.E.	DEWBERRY ENGINEERS INC.	(617) 531–0823
SAC:	TIM BURKS	SAI COMMUNICATIONS	(860) 989–0001

UTILITIES		
POWER:	CONNECTICUT LIGHT & POWER	(860) 286–2000
TELCO:	AT&T	(888) 944–0447

VICINITY MAP

DIRECTIONS: FROM FRAMINGHAM, MA: TAKE I–90 W. TAKE EXIT 9 TO MERGE ONTO I–84 TOWARD RT–20/HARTFORD. TAKE EXIT 4 FOR US–6 W/US–2–2 W. TOWARD LAKE AVE. TURN RIGHT ONTO US–202 W/US–6 W/LAKE AVE. EXT. TURN RIGHT ONTO MILL RIDGE RD. TURN RIGHT ONTO HIGH RIDGE RD. TURN LEFT AT THE 1ST CROSS STREET ONTO SCUPPO RD. TURN RIGHT ONTO BOXWOOD LN. THE SITE WILL BE ON THE RIGHT.



APPLICABLE BUILDING CODES AND STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS AND DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES AND DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR 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:
2016 CONNECTICUT STATE BUILDING CODE (2012 INTERNATIONAL BUILDING CODE)

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC)

CONTRACTOR'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, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222–H, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR–1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

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.

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

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

DANBURY BOXWOOD LANE
4C/5C/6C/RETROFIT
SITE NO. CT0968

303 BOXWOOD LANE
DANBURY, CT 06811

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	06/28/18	FOR CONSTRUCTION	MR	KB	BBR
B	03/05/18	FOR REVIEW	MR	KB	BBR
A	02/09/18	FOR REVIEW	MR	KB	BBR

SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: MR

STATE OF CONNECTICUT · BENJAMIN B. REVETTE · 28971 · LICENSED PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, CT 06067

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	T01	0

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – SAI
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR 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.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR 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 CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR 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. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR 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.
17. 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.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
5. AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
26. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

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at&t Mobility
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ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	06/28/18	FOR CONSTRUCTION	MR	KB	BBR
B	03/05/18	FOR REVIEW	MR	KB	BBR
A	02/09/18	FOR REVIEW	MR	KB	BBR

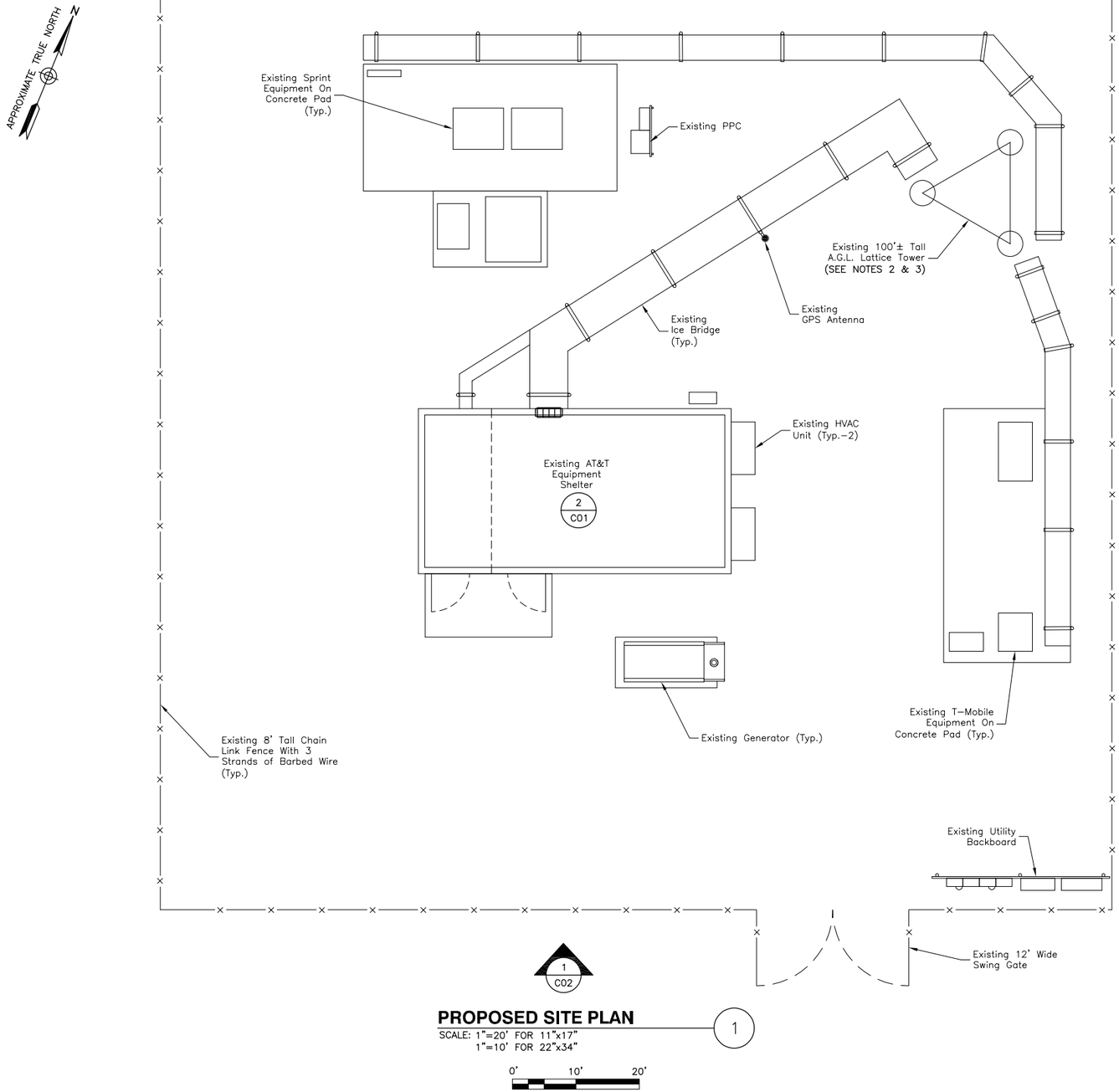
SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
LICENSED PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, CT 06067

GENERAL NOTES

DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	G01	0

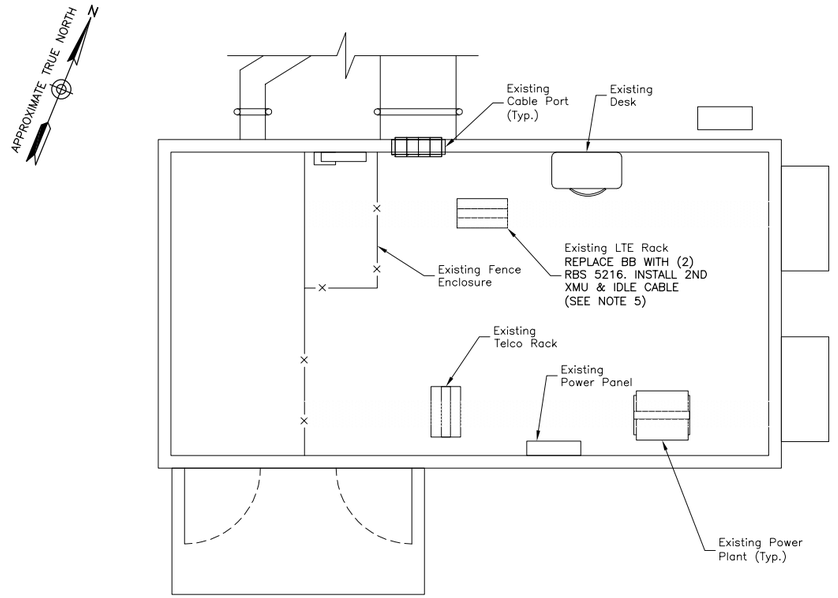


PROPOSED SITE PLAN

1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'



PROPOSED SHELTER PLAN

2

SCALE: 1"=6' FOR 11"x17"
1"=3' FOR 22"x34"

0' 3' 6'

NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE MOUNT ANALYSIS BY HUDSON DESIGN GROUP, LLC. DATED 06–13–18 & MOUNT MODIFICATION DRAWINGS BY HUDSON DESIGN GROUP, LLC. DATED 06–17–18.
3. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
4. NOT ALL INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

TOP – INSTALL (3) 4' HEXPORT ANTENNAS IN POSITION 4, (3) RRUS–E2, (3) RRUS–32 B66 & (3) 850 RRUS–12. REPLACE (3) 1900 RRUS–11 & A2 UMTS WITH (3) RRUS–32 B2. INSTALL (1) SQUID, (1) FIBER & (2) DC CABLES.

BOTTOM – REPLACE BB WITH (2) RBS 5216. INSTALL 2ND XMU & IDLE CABLE.

6. ALL SPACING REQUIREMENTS FOR PROPOSED RRU MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT EXCEED THE TOP OF THE TOWER OR INTERFERE WITH OTHER RAD CENTERS.
7. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:
   - 3'–0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS
   - 6'–0" MINIMUM SEPARATION BETWEEN UMTS & LTE
8. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MOUNT ANALYSIS (BY OTHERS).

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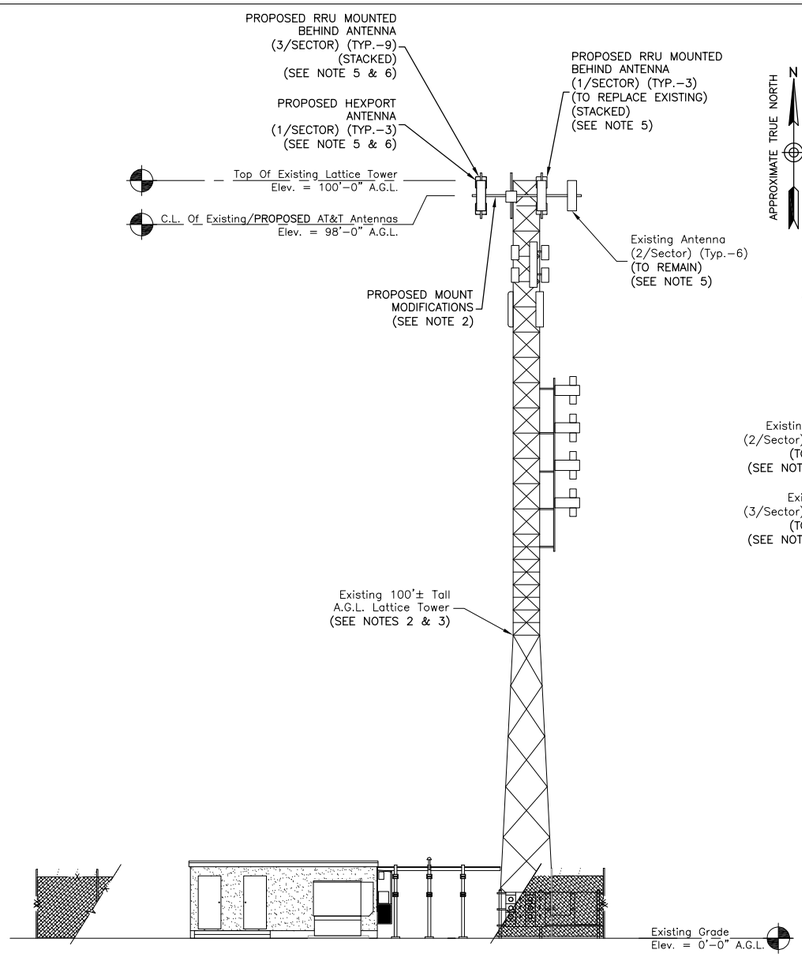
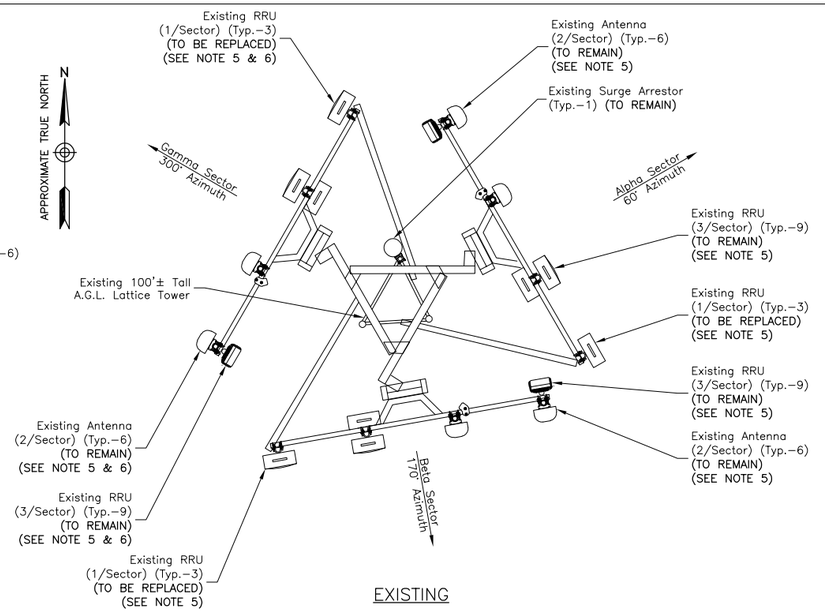
PROPOSED SITE & SHELTER PLAN

DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	C01	0



PROPOSED ELEVATION 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"
0' 10' 20'



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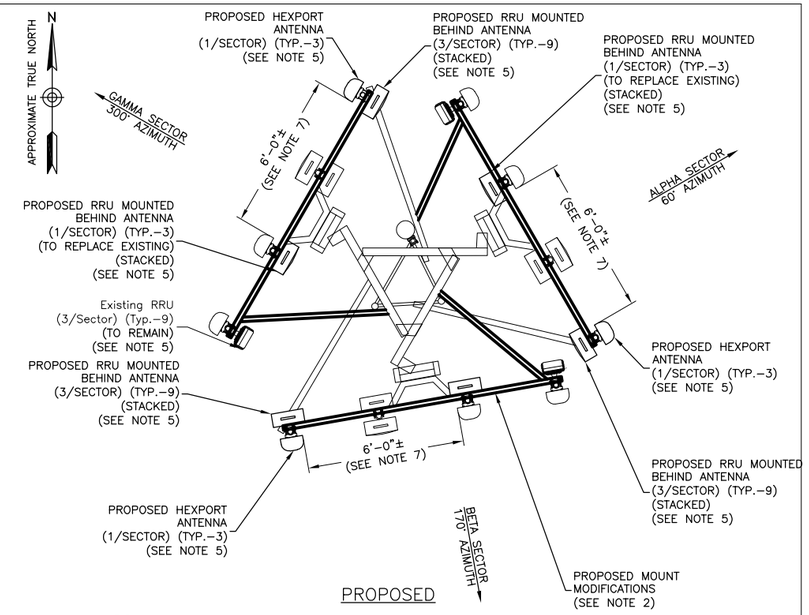

PROPOSED

ANTENNA ORIENTATION PLAN 2

SCALE: N.T.S.

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (LxWxD)	COAX JUMPERS	FIBER JUMPERS
ALPHA	UMTS 850/WCS	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700 BC/PCS/850	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–12 850 (P) RRUS–32 B2	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	(E) 4
	–	–	–	–	–	–	–	–	–	(P) 2
	LTE 700 DE/AWS	(P) SBNHH–1D65A	55.0 x 11.9 x 7.1	98'±	60°	–	(P) RRUS–E2 700 (P) RRUS–32 B66	20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	–
BETA	UMTS 850/WCS	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700 BC/PCS/850	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–12 850 (P) RRUS–32 B2	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	(E) 4
	–	–	–	–	–	–	–	–	–	(P) 2
	LTE 700 DE/AWS	(P) SBNHH–1D65A	55.0 x 11.9 x 7.1	98'±	60°	–	(P) RRUS–E2 700 (P) RRUS–32 B66	20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	–
GAMMA	UMTS 850/WCS	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700 BC/PCS/850	(E) OPA–65R–LCUU–H4	48.0 x 15.0 x 7.0	98'±	60°	–	(E) RRUS–11 700 (P) RRUS–12 850 (P) RRUS–32 B2	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	(E) 4
	–	–	–	–	–	–	–	–	–	(P) 2
	LTE 700 DE/AWS	(P) SBNHH–1D65A	55.0 x 11.9 x 7.1	98'±	60°	–	(P) RRUS–E2 700 (P) RRUS–32 B66	20.4 x 18.5 x 7.5 27.2 x 12.1 x 7.0	–	–

NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE MOUNT ANALYSIS BY HUDSON DESIGN GROUP, LLC. DATED 06–13–18 & MOUNT MODIFICATION DRAWINGS BY HUDSON DESIGN GROUP, LLC. DATED 06–17–18.
3. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
4. NOT ALL INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

TOP – INSTALL (3) 4' HEXPORT ANTENNAS IN POSITION 4, (3) RRUS–E2, (3) RRUS–32 B66 & (3) 850 RRUS–12. REPLACE (3) 1900 RRUS–11 & A2 UMTS WITH (3) RRUS–32 B2. INSTALL (1) SQUID, (1) FIBER & (2) DC CABLES.

BOTTOM – REPLACE BB WITH (2) RBS 5216. INSTALL 2ND XMU & IDLE CABLE.

6. ALL SPACING REQUIREMENTS FOR PROPOSED RRU MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT EXCEED THE TOP OF THE TOWER OR INTERFERE WITH OTHER RAD CENTERS.
7. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:
   - 3'–0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS
   - 6'–0" MINIMUM SEPARATION BETWEEN 700BC & 700DE
8. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MOUNT ANALYSIS (BY OTHERS).

FINAL EQUIPMENT CONFIGURATION 3

SCALE: N.T.S.

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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	06/28/18	FOR CONSTRUCTION	MR	KB	BBR
B	03/05/18	FOR REVIEW	MR	KB	BBR
A	02/09/18	FOR REVIEW	MR	KB	BBR

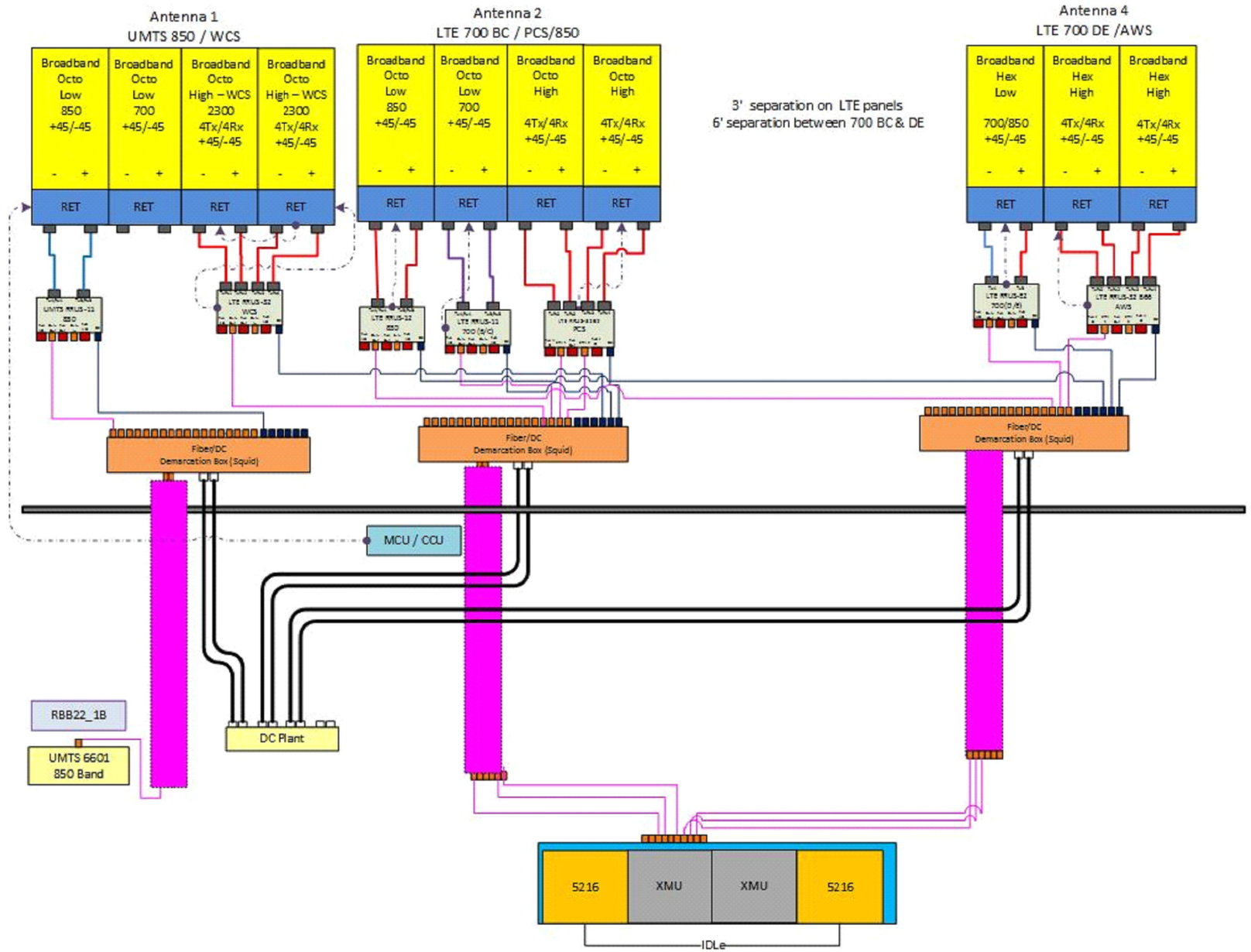
SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
LICENSED PROFESSIONAL ENGINEER

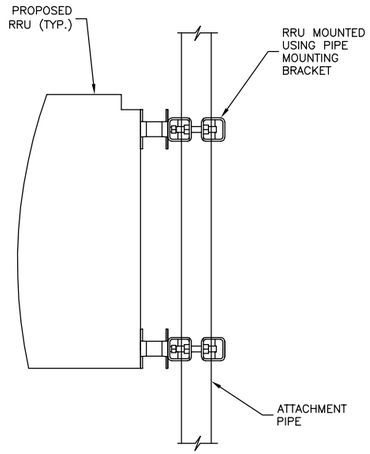
AT&T MOBILITY
ROCKY HILL, CT 06067

PROPOSED ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	C02	0



EQUIPMENT PLUMBING DIAGRAM (1)
SCALE: N.T.S.



MOUNTING CLEARANCE
TOP: 1'–6" – 3'–0"
SIDES: 4"–12"
BOTTOM: 16"
FRONT: 2'–0" – 4'–0"

REMOTE ATTACHMENT DETAIL (2)
SCALE: N.T.S.

NOTES:
1. EQUIPMENT PLUMBING DIAGRAM PER RFDS DATED 10/31/17.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION & SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: MR

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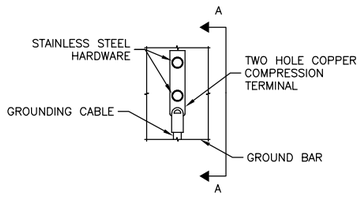
EQUIPMENT PLUMBING DIAGRAM

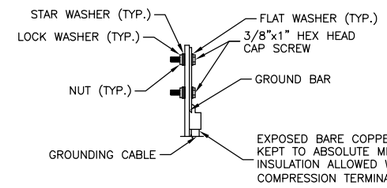
DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	C03	0

GROUNDING NOTES:

1. THE CONTRACTOR 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 CONTRACTOR 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. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. 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 TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM SAI COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



ELEVATION

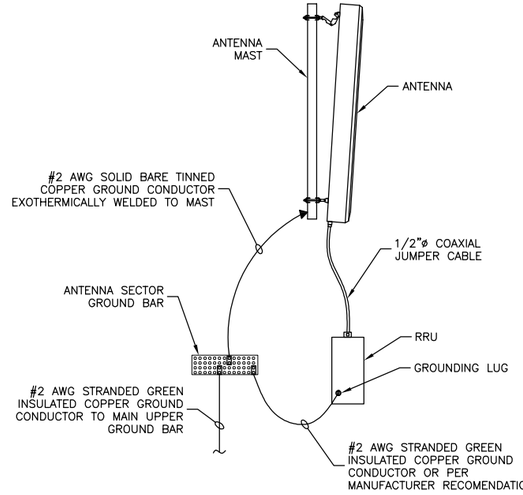


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL 1

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA/RRU GROUNDING DETAIL 2

SCALE: N.T.S

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STATE OF CONNECTICUT
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GROUNDING NOTES & DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50019239/50083724	E01	0

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

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

NOTES:

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

NOTES:

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

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: CT0968
SITE NAME: DANBURY
BOXWOOD LANE
303 BOXWOOD LANE
DANBURY, CT 06811
FAIRFIELD COUNTY

at&t
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/17/18	ISSUED FOR CONSTRUCTION	EB	AT	DJC

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

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

AT&T

STRUCTURAL NOTES
MOUNT MODIFICATION

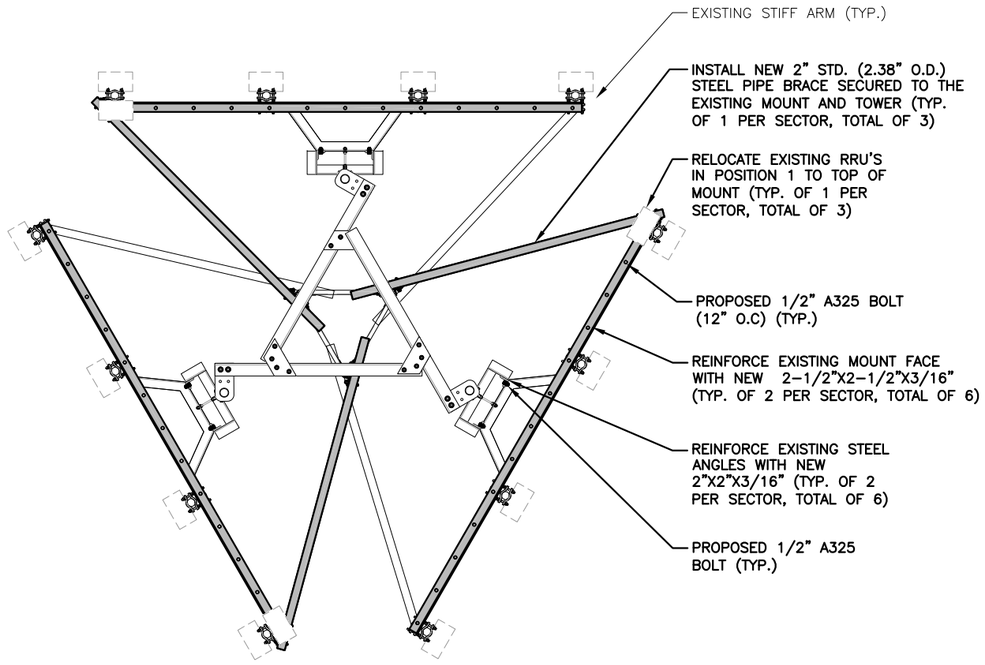
SITE NUMBER	DRAWING NUMBER	REV
12684103	SN–1	1

NOTE:

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

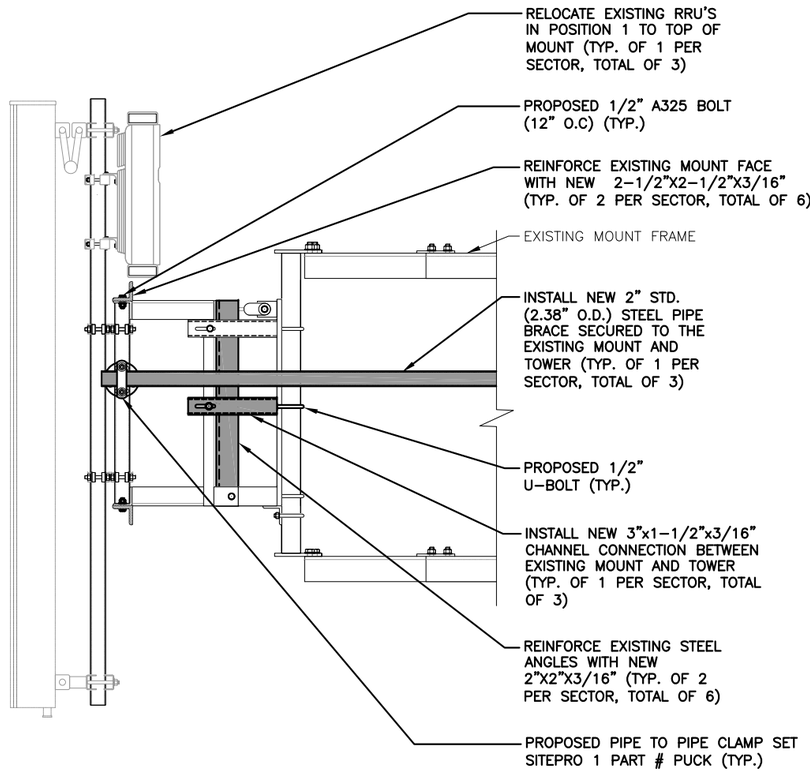
NOTE:

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 13, 2018



PROPOSED MOUNT REINFORCEMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
1 / S-1

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



PROPOSED MOUNT REINFORCEMENT DETAIL
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
2 / S-1

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

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

AT&T

STRUCTURAL DETAILS
MOUNT MODIFICATION

SITE NUMBER	DRAWING NUMBER	REV
12684103	S-1	1

NOTE:

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

NOTE:

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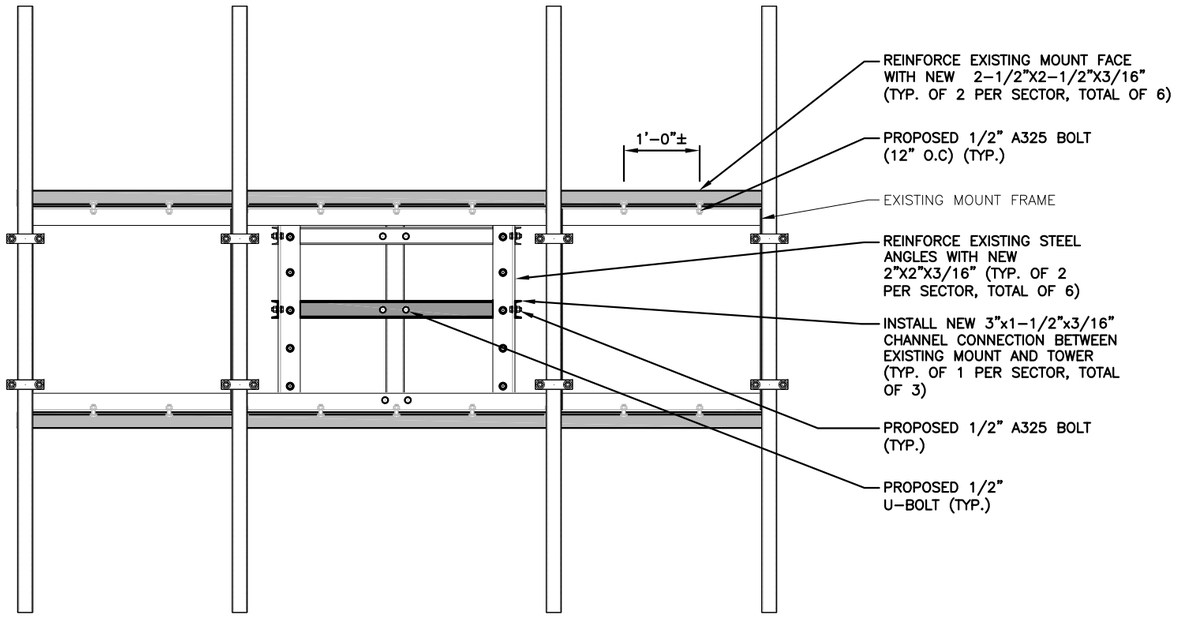
HUDSON DESIGN GROUP, LLC.
DATED: JUNE 13, 2018

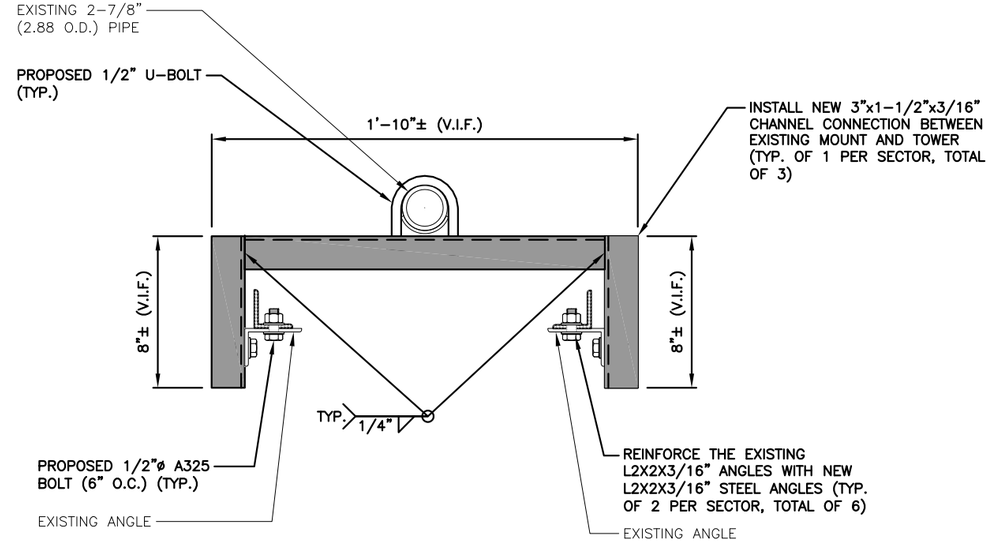


PROPOSED MOUNT MODIFICATIONS DETAIL (FRONT)

1 / S-2

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

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



PROPOSED CONNECTION DETAIL

2 / S-2

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

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NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/17/18	ISSUED FOR CONSTRUCTION	EB	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28355 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL DETAILS
MOUNT MODIFICATION

SITE NUMBER	DRAWING NUMBER	REV
12684103	S-2	1

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

100' Existing NUDD Lattice Tower

Project: LTE 1900 4T4R/4C/5C/6C

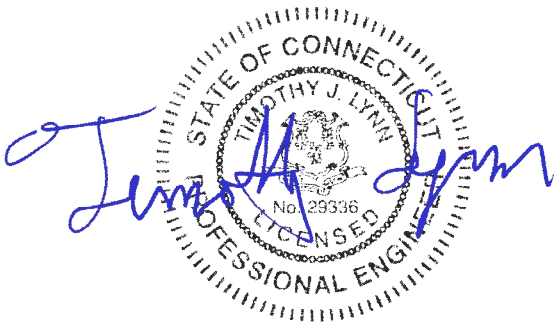
AT&T Site Ref: CT0968

303 Boxwood Lane,
Danbury, CT

CENTEK Project No. 18027.00

~~Date: March 16, 2018~~

Rev 1: July 5, 2018



Prepared for:

AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T on the existing self supporting lattice tower located in Danbury, Connecticut.

The host tower is a 100-ft, three-legged self-support lattice tower originally designed and manufactured by Fred A. Nudd Corporation; file no: 96-4992 dated January 21, 1997. Subsequent reinforcements were made to the tower per Centek job no. 361A dated November 28, 2001 and Centek job no. 10106 dated August 16, 2010. The tower geometry, structure member sizes and the foundation system information were taken from the aforementioned design documents.

Antenna and appurtenance information were obtained from a previous structural report prepared by Centek job no. 16159.06 dated October 13, 2016 and a AT&T RF data sheet.

The tower is made up of five (5) steel sections consisting of A500-42, A500-50, and A500-61ksi pipe legs. Diagonal lateral support bracing consists of A36 single angle and steel rod construction. The vertical tower sections are connected by bolted flange plates while the pipe legs and bracing are connected by welded connections (40'-100'), bolted and welded gusset connections (0'-40'). The tower face width is 7.5-ft at the bottom tapering to 3.5-ft at the top.

Antenna and Appurtenance Summary

The existing tower was designed to support several communication antennas. The existing, proposed and future loads considered in this analysis consist of the following:

- Unknown (Existing):
  Antennas: One (1) 3' parabolic grid antenna with a RAD center elevation of 96-ft above the existing tower base.
  Coax Cables: One (1) 1/2" ∅ coax cable.
- Sprint (Existing/Reserved):
  Antennas: Three (3) RFS APXVSPP18-C-A20 panel antennas, three (3) RFS APXVTM14 panel antennas, six (6) Alcatel-Lucent 1900 MHz RRH's, three (3) Alcatel-Lucent 800 MHz RRH's and three (3) Alcatel-Lucent TD-RRH8x20 remote radio heads mounted on three (3) sector frames with a RAD center elevation of 89-ft above the existing tower base.
  Coax Cables: Four (4) 1-1/4" ∅ fiber cables and one (1) RET cable.
- T-Mobile: (Existing to Remain):
  Antennas: Three (3) Ericsson AIR21 panel antennas, three (3) Ericsson KRC-118 057/01 panel antennas, three (3) TMA's and three (3) Ericsson RRUS-11 remote radio heads mounted on three (3) SitePro WiMAX Tower mounts (p/n CWT02) with a RAD center elevation of 83-ft above the existing tower base.
  Coax Cables: One (1) 1 5/8" ∅ fiber cable, twelve (12) 1 5/8" ∅ and one (1) 7/8" ∅ coax cables.
- WCSU FM (Existing):
  Antennas: One (1) 4-Bay Shively Labs 6810 FM Antenna w/ Radomes with a RAD center elevation of 65-ft above the existing tower base.
  Coax Cables: One (1) 1 5/8" ∅ coax cable.

- Sprint (Existing):
  Antennas: (1) GPS antenna mounted to a 2' standoff mount with a RAD center elevation of 30-ft above the existing tower base.
  Coax Cables: One (1) 1/2" ∅ coax cable.
- AT&T Mobility (Existing to Remain):
  Antennas: Six (6) CCI OPA-65R-LUCC-H4 panel antennas, six (6) Ericsson RRUS-11 remote radio heads, three (3) Ericsson RRUS-32 remote radio heads and two (2) Raycap DC6-48-60-18-8F surge arrestors mounted on three (3) existing sector frames with a RAD center elevation of 98-ft above the existing tower base.
  Coax Cables: Two (2) fiber cable, four (4) dc control cables and three (3) RET cables running on a face of the existing tower
- AT&T Mobility (Existing to Remove):
  Antennas: Three (3) Ericsson RRUS-12 remote radio heads and three (3) Ericsson A2 units mounted on three (3) existing sector frames with a RAD center elevation of 98-ft above the existing tower base.
- **AT&T Mobility (Proposed):**
  Antennas: Three (3) Commscope SBNHH-1D65A panel antennas, three (3) Ericsson RRUS-12 remote radio heads, three (3) Ericsson RRUS-E2 remote radio heads, three (3) Ericsson RRUS-32 B2 remote radio heads, three (3) Ericsson RRUS-32 B66 remote radio heads and one (1) Raycap DC6-48-60-18-8F surge arrestor mounted on three (3) existing sector frames with a RAD center elevation of 98-ft above the existing tower base.
  Coax Cables: One (1) fiber cable, two (2) dc control cables and three (3) RET cables running on a face of the existing tower
  Mount Modifications: Install (6) L2.5x2.5x3/16 angles, (6) L2x2x3/16 angles and (3) C3 channel assemblies attached to existing mount per the mount modification drawings prepared by Hudson Design Group dated June 17, 2018.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables shall be routed as specified on in Section 3 of this report.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC[1] and the wind speed data available in the TIA-222-G-2005 Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 0.75" radial ice on the tower structure and its components.

Basic Wind Speed:	Fairfield; v = 90-110 mph (3-second gust)	*[Annex B of TIA-222-G-2005]*
	Danbury; v = 93 mph (3 second gust)	*[Appendix N of the 2016 CT Building Code]*
Load Cases:	Load Case 1; 93 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix N of the 2016 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 0.75" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-G-2005]*

[1] The 2012 International Building Code as amended by the 2016 Connecticut State Building Code (CSBC).

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower. Allowable stresses were determined based on Table 4-8 of the TIA code.

- Calculated stresses were found to be within allowable limits. In Load Case 2, per tnxtower "Section Capacity Table", this tower was found to be at **97.7%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T4)	40'-0"-53'-4"	97.7%	**PASS**
Diagonal (T2)	60'-0"-80'-0"	93.2%	**PASS**

Foundation and Anchors

The existing foundation consists of three (3) 2.0-ft ∅ x 4.25-ft long reinforced concrete piers on a 14.5-ft square x 3-ft thick reinforced concrete pad bearing directly on existing sub grade. The existing foundation dimensions and sub-grade conditions used in the analysis of the existing foundation were obtained from the aforementioned manufacturers original design documents; Fred A. Nudd Corporation; file no: 96-4992. Tower legs are connected to the foundation by means of (4) 1.5" ∅, ASTM A36 anchor bolts per leg, embedded into the concrete foundation structure.

- The tower reactions developed from the governing Load Case 1 were used in the verification of the foundation:

Reactions	Vector	Proposed Base Reactions
Base	Shear	**14 kips**
	Compression	**23 kips**
	Moment	**972 kip-ft**
Leg	Shear	**11 kips**
	Compression	**157 kips**
	Uplift	**141 kips**

- The anchor bolts were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Tension	60.8%	**PASS**

- The foundation was found to be within allowable limits.

Foundation	Design Limit	TIA-222-G Section 9.4 FS[1]	Proposed Loading (FS)[1]	Result
Reinforced Concrete Mat	OTM[2]	1.0	1.57	**PASS**

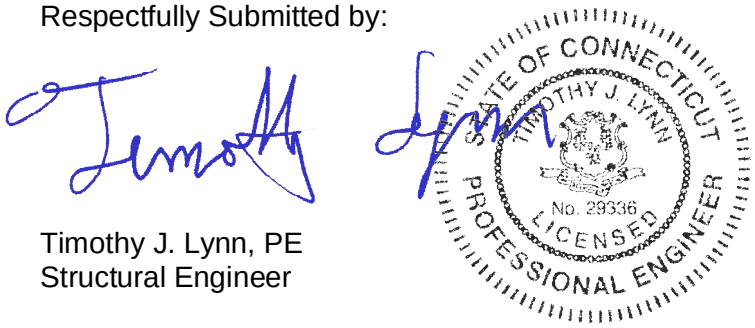
C o n c l u s i o n

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration with the below recommendations.

The analysis is based, in part, on the information provided to this office by AT&T. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of CENTEK engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provide to CENTEK engineering, Inc. 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 are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. 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. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. CENTEK engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

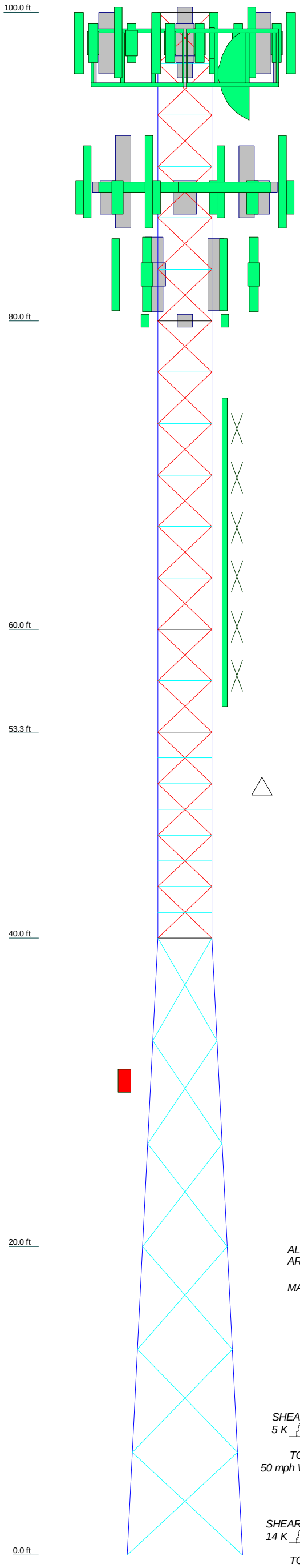
General Description of Structural Analysis Program

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly ERITower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section	T1	T2	T3	T4	T5	T6
Legs	P2.5x.276	P2.5x.276 (GR)	P3x.3 (GR)	P3x.3 (GR)	P5x.258 (GR)	P5x.258 (GR)
Leg Grade	A500-50	A500-50	A500M-61	A500M-61	A500-42	A500-42
Diagonals	SR 5/8	SR 5/8	SR 3/4	SR 3/4	L2x2x3/16	L2 1/2x2 1/2x3/16
Diagonal Grade	A36	A36	A36	A36	A36	A36
Top Girts	L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	N.A.	N.A.
Bottom Girts	N.A.	N.A.	2L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	N.A.	N.A.
Horizontals	L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	2L1 1/2x1 1/2x3/16	L2 1/2x2 1/2x5/16	N.A.	N.A.
Sec. Horizontals	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Face Width (ft)	3.5	1.1	0.5	1.3	2.5	2.6
# Panels @ (ft)	12 @ 3.33333		2 @ 3.335	4 @ 3.3325	5.5	6 @ 6.66667
Weight (K)	0.8				7.5	8.8



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) OPA-65R-LCUU-H4 (ATI - Existing)	98	13-ft T-Frame (Sprint - Existing)	89
(2) OPA-65R-LCUU-H4 (ATI - Existing)	98	13-ft T-Frame (Sprint - Existing)	89
(2) OPA-65R-LCUU-H4 (ATI - Existing)	98	13-ft T-Frame (Sprint - Existing)	89
SBNHH-1D65A (ATI - Proposed)	98	FD-RRH 2x50 800 (Sprint - Existing)	88
SBNHH-1D65A (ATI - Proposed)	98	FD-RRH 2x50 800 (Sprint - Existing)	88
SBNHH-1D65A (ATI - Proposed)	98	FD-RRH 2x50 800 (Sprint - Existing)	88
(2) RRUS-11 (ATI - Existing)	98	TD-RRH8x20-25 (Sprint - Existing)	88
RRUS-12 (ATI - Proposed)	98	TD-RRH8x20-25 (Sprint - Existing)	88
RRUS-32 (ATI - Existing)	98	TD-RRH8x20-25 (Sprint - Existing)	88
(2) RRUS-32 (ATI - Proposed)	98	(2) FD-RRH 4x45 1900 (Sprint - Existing)	88
RRUS-E2 (ATI - Proposed)	98	(2) FD-RRH 4x45 1900 (Sprint - Existing)	88
(2) RRUS-11 (ATI - Existing)	98	(2) FD-RRH 4x45 1900 (Sprint - Existing)	88
RRUS-12 (ATI - Proposed)	98	AIR21 B2A/B4P (T-Mobile - Existing)	83
RRUS-32 (ATI - Existing)	98	AIR21 B2A/B4P (T-Mobile - Existing)	83
(2) RRUS-32 (ATI - Proposed)	98	AIR21 B2A/B4P (T-Mobile - Existing)	83
RRUS-E2 (ATI - Proposed)	98	KRC 118 057/1 (T-Mobile - Existing)	83
(2) RRUS-11 (ATI - Existing)	98	KRC 118 057/1 (T-Mobile - Existing)	83
RRUS-12 (ATI - Proposed)	98	KRC 118 057/1 (T-Mobile - Existing)	83
RRUS-32 (ATI - Existing)	98	RRUS-11 (T-Mobile - Existing)	83
(2) RRUS-32 (ATI - Proposed)	98	RRUS-11 (T-Mobile - Existing)	83
RRUS-E2 (ATI - Proposed)	98	RRUS-11 (T-Mobile - Existing)	83
DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	98	Site Pro WiMAX Tower Mount CWT02 (T-Mobile - Existing)	83
DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	98		
DC6-48-60-18-8F Surge Arrestor (ATI - Proposed)	98	Site Pro WiMAX Tower Mount CWT02 (T-Mobile - Existing)	83
12' Boom Starmount (ATI - Existing)	97		
Mount Mods (ATI - Proposed)	97	Site Pro WiMAX Tower Mount CWT02 (T-Mobile - Existing)	83
12' Boom Starmount (ATI - Existing)	97		
Mount Mods (ATI - Proposed)	97	ATMAA1412D-1A20 Twin TMA (T-Mobile - Existing)	80
12' Boom Starmount (ATI - Existing)	97		
Mount Mods (ATI - Proposed)	97	ATMAA1412D-1A20 Twin TMA (T-Mobile - Existing)	80
Parabolic Grid	96		
APXVSPP18-C-A20 (Sprint - Existing)	89	ATMAA1412D-1A20 Twin TMA (T-Mobile - Existing)	80
APXVSPP18-C-A20 (Sprint - Existing)	89		
APXVSPP18-C-A20 (Sprint - Existing)	89	6810 4 Bay	65
APXVTM14 (Sprint - Existing)	89	2.5" Tube x 2' Standoff (Sprint)	30
APXVTM14 (Sprint - Existing)	89	GPS (Sprint)	30
APXVTM14 (Sprint - Existing)	89		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A500M-61	61 ksi	75 ksi
A36	36 ksi	58 ksi	A500-42	42 ksi	58 ksi

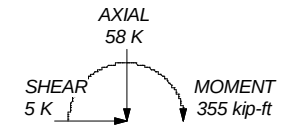
TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. Grouted pipe f'c is 5 ksi
8. 3/4" dia SR used for sections T3 _T4 to account for 5/8" SR with 1/4" bar
9. TOWER RATING: 97.7%

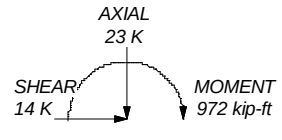
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 157 K
SHEAR: 11 K

UPLIFT: -141 K
SHEAR: 10 K



TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE



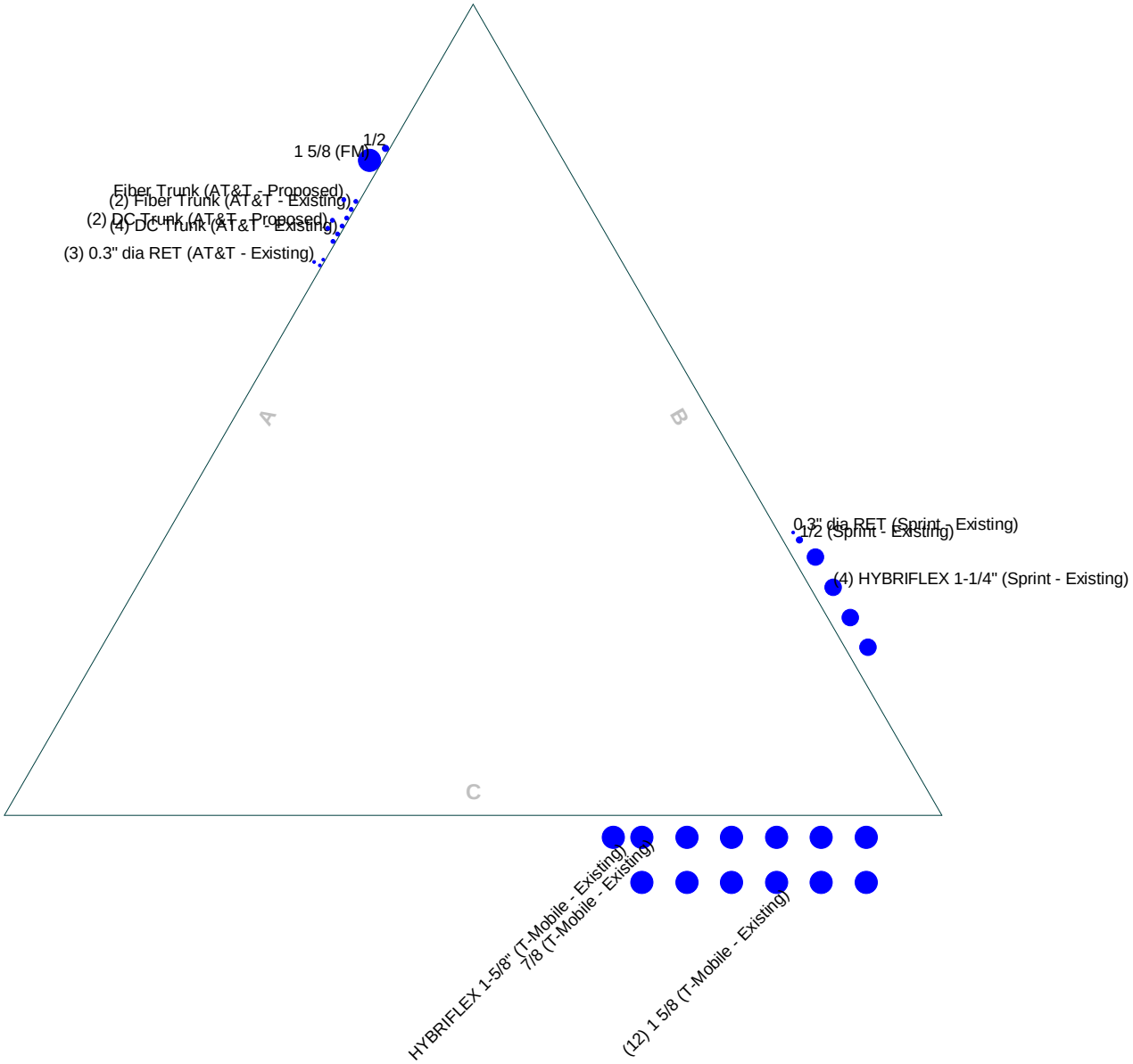
TORQUE 4 kip-ft
REACTIONS - 93 mph WIND

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: **18027.00 - CT0968**		
Project: **100' Nudd Lattice - 303 Boxwood Lane, Danbury, CT**		
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 07/05/18	Scale: NTS
Path: J:\Jobs\1802700.WI\04_Structural\Backup Documentation\Calcs\Rev (1)\ERI Files\100-ft NUDD Lattice Tower Danbury, CT.eri		Dwg No. E-1

Feed Line Plan

Round Flat App In Face App Out Face



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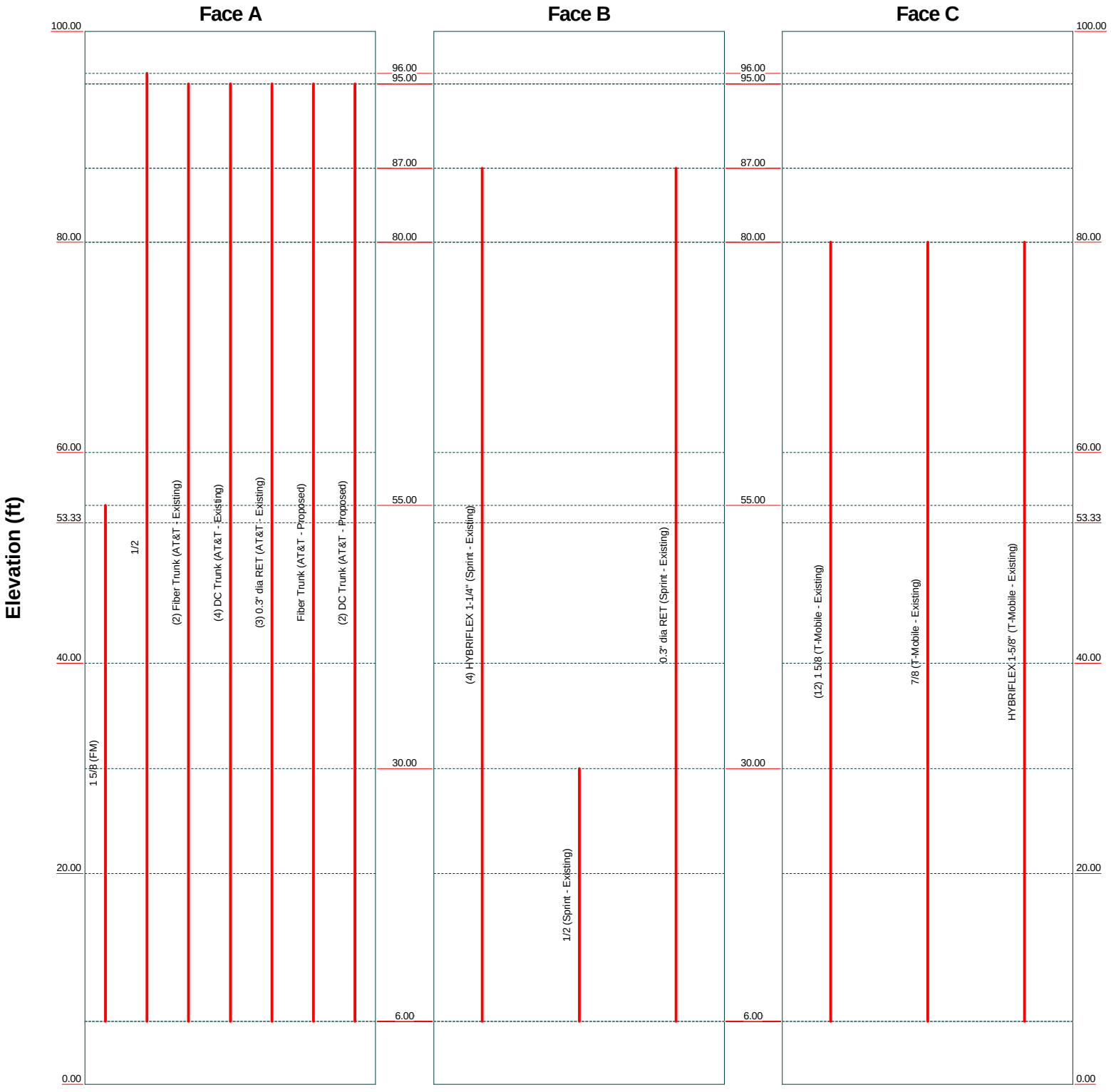
Code: TIA-222-G		Date: 07/05/18	Scale: NTS
Path: J:\Jobs\1802700.W\04_Structural\Backup Documentation\Calcs\Rev (3)\ERI Files\100-ft NUDD Lattice Tower Danbury, CT.eri			Dwg No. E-7

Feed Line Distribution Chart
0' - 100'

Round | Flat | App In Face | App Out Face | Truss Leg



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Path: J:\Jobs\18027\00 WI\04_Structural\Backup Documentation\Calcs\Rev (3)\ER Files\100-ft NUDD Lattice Tower Danbury, CT.eri			Dwg No. E-7

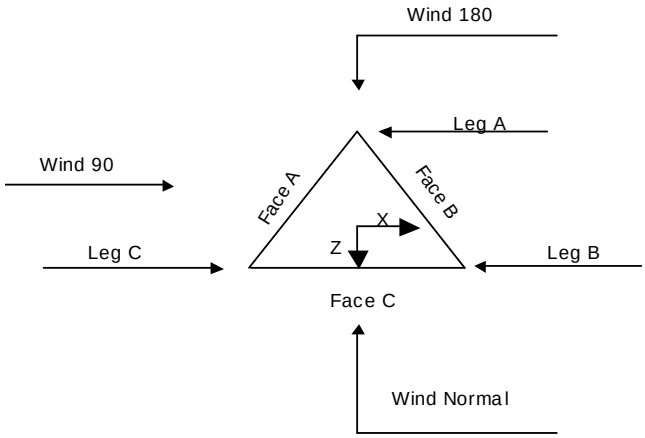
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 100.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 7.50 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
3/4" dia SR used for sections T3 & T4 to account for 5/8" SR with 1/4" bar.
Tension only take-up is 0.0313 in.
A non-linear (P-delta) analysis was used.
Grouted pipe f'_c is 5 ksi.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	100.00-80.00			3.50	1	20.00
T2	80.00-60.00			3.50	1	20.00
T3	60.00-53.33			3.50	1	6.67
T4	53.33-40.00			3.50	1	13.33
T5	40.00-20.00			3.50	1	20.00
T6	20.00-0.00			5.50	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	100.00-80.00	3.33	TX Brace	No	Yes	0.0000	0.0000
T2	80.00-60.00	3.33	TX Brace	No	Yes	0.0000	0.0000
T3	60.00-53.33	3.34	TX Brace	No	Yes	0.0000	0.0000
T4	53.33-40.00	3.33	TX Brace	No	Yes	0.0000	0.0000
T5	40.00-20.00	6.67	X Brace	No	No	0.0000	0.0000
T6	20.00-0.00	6.67	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 100.00-80.00	Pipe	P2.5x.276	A500-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 80.00-60.00	Grouted Pipe	P2.5x.276	A500-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 60.00-53.33	Grouted Pipe	P3x.3	A500M-61 (61 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 53.33-40.00	Grouted Pipe	P3x.3	A500M-61 (61 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 40.00-20.00	Grouted Pipe	P5x.258	A500-42 (42 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T6 20.00-0.00	Grouted Pipe	P5x.258	A500-42 (42 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 100.00-80.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T2 80.00-60.00	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 60.00-53.33	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T4 53.33-40.00	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 100.00-80.00	None	Solid Round		A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 80.00-60.00	None	Single Angle		A36 (36 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 60.00-53.33	None	Single Angle		A36 (36 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 53.33-40.00	None	Single Angle		A36 (36 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T4 53.33-40.00	Equal Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 60.00-53.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 53.33-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
60.00-53.33				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
53.33-40.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T6 20.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T2 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T3 60.00-53.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T4 53.33-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T5 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T6 20.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 100.00-80.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T2 80.00-60.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T3 60.00-53.33	Flange	0.7500 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T4 53.33-40.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.7500 A325N	1
T5 40.00-20.00	Flange	1.0000 A325N	6	0.6250 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T6 20.00-0.00	Flange	1.5000 A36	4	0.6250 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0

Grouted Pipe Properties

Size	F_y ksi	A_s in^2	A_c in^2	Wt plf	E_c ksi	E_m ksi	F_{ym} ksi
P2.5x.276 (GR)	50	2.2535	4.2383	16.498	4031	35064	58
P3x.3 (GR)	55	3.0159	6.6052	24.023	4031	36062	64
P5x.258 (GR)	42	4.2999	20.0058	56.310	4031	44002	62

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (FM)	A	No	Ar (CaAa)	55.00 - 6.00	0.0000	0.3	1	1	1.9800	1.9800		1.04
1/2	A	No	Ar (CaAa)	96.00 - 6.00	0.0000	0.32	1	1	0.5800	0.5800		0.25

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
HYBRIFLEX 1-1/4" (Sprint - Existing)	B	No	Ar (CaAa)	87.00 - 6.00	1.0000	0.25	4	4	1.5400	1.5400		1.30
1/2 (Sprint - Existing)	B	No	Ar (CaAa)	30.00 - 6.00	1.0000	0.17	1	1	0.5800	0.5800		0.25
0.3" dia RET (Sprint - Existing)	B	No	Ar (CaAa)	87.00 - 6.00	1.0000	0.16	1	1	0.3000	0.3000		0.00
1 5/8 (T-Mobile - Existing)	C	No	Ar (CaAa)	80.00 - 6.00	1.0000	-0.3	12	6	1.9800	1.9800		1.04
7/8 (T-Mobile - Existing)	C	No	Ar (CaAa)	80.00 - 6.00	1.0000	-0.18	1	1	1.1100	1.1100		0.54
Fiber Trunk (AT&T - Existing)	A	No	Ar (CaAa)	95.00 - 6.00	0.0000	0.25	2	2	0.4000	0.4000		1.00
DC Trunk (AT&T - Existing)	A	No	Ar (CaAa)	95.00 - 6.00	0.0000	0.22	4	4	0.4000	0.4000		0.11
0.3" dia RET (AT&T - Existing)	A	No	Ar (CaAa)	95.00 - 6.00	0.0000	0.18	3	2	0.3000	0.3000		0.00
HYBRIFLEX 1-5/8" (T-Mobile - Existing)	C	No	Ar (CaAa)	80.00 - 6.00	1.0000	-0.15	1	1	1.9800	1.9800		1.90
Fiber Trunk (AT&T - Proposed)	A	No	Ar (CaAa)	95.00 - 6.00	1.0000	0.25	1	1	0.4000	0.4000		1.00
DC Trunk (AT&T - Proposed)	A	No	Ar (CaAa)	95.00 - 6.00	1.0000	0.22	2	2	0.4000	0.4000		0.11

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	100.00-80.00	A	0.000	0.000	7.678	0.000	0.06
		B	0.000	0.000	4.522	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
T2	80.00-60.00	A	0.000	0.000	10.160	0.000	0.08
		B	0.000	0.000	12.920	0.000	0.10
		C	0.000	0.000	53.700	0.000	0.30
T3	60.00-53.33	A	0.000	0.000	3.719	0.000	0.03
		B	0.000	0.000	4.309	0.000	0.03
		C	0.000	0.000	17.909	0.000	0.10
T4	53.33-40.00	A	0.000	0.000	9.411	0.000	0.07
		B	0.000	0.000	8.611	0.000	0.07
		C	0.000	0.000	35.791	0.000	0.20
T5	40.00-20.00	A	0.000	0.000	14.120	0.000	0.10
		B	0.000	0.000	13.500	0.000	0.11
		C	0.000	0.000	53.700	0.000	0.30

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T6	20.00-0.00	A	0.000	0.000	9.884	0.000	0.07
		B	0.000	0.000	9.856	0.000	0.08
		C	0.000	0.000	37.590	0.000	0.21

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	100.00-80.00	A	1.658	0.000	0.000	58.345	0.000	0.55
		B		0.000	0.000	15.578	0.000	0.22
		C		0.000	0.000	0.000	0.000	0.00
T2	80.00-60.00	A	1.617	0.000	0.000	75.791	0.000	0.70
		B		0.000	0.000	44.082	0.000	0.60
		C		0.000	0.000	85.726	0.000	2.00
T3	60.00-53.33	A	1.583	0.000	0.000	25.730	0.000	0.24
		B		0.000	0.000	14.585	0.000	0.20
		C		0.000	0.000	28.427	0.000	0.66
T4	53.33-40.00	A	1.553	0.000	0.000	55.752	0.000	0.54
		B		0.000	0.000	28.938	0.000	0.39
		C		0.000	0.000	56.519	0.000	1.30
T5	40.00-20.00	A	1.486	0.000	0.000	80.966	0.000	0.76
		B		0.000	0.000	46.276	0.000	0.60
		C		0.000	0.000	83.833	0.000	1.91
T6	20.00-0.00	A	1.331	0.000	0.000	52.353	0.000	0.46
		B		0.000	0.000	33.334	0.000	0.40
		C		0.000	0.000	57.127	0.000	1.26

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	100.00-80.00	0.2536	-0.8467	0.1035	-0.5387
T2	80.00-60.00	2.0997	1.9075	1.0495	0.6561
T3	60.00-53.33	1.9981	1.7832	1.0094	0.5995
T4	53.33-40.00	1.8029	1.5201	0.7771	0.3828
T5	40.00-20.00	2.2279	1.7454	1.3877	0.6047
T6	20.00-0.00	2.6119	1.9038	1.8101	0.7296

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	1/2	80.00 - 96.00	0.6000	0.4243
T1	4	HYBRIFLEX 1-1/4"	80.00 - 87.00	0.6000	0.4243
T1	6	0.3" dia RET	80.00 - 87.00	0.6000	0.4243
T1	9	Fiber Trunk	80.00 - 95.00	0.6000	0.4243

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	10	DC Trunk	80.00 - 95.00	0.6000	0.4243
T1	11	0.3" dia RET	80.00 - 95.00	0.6000	0.4243
T1	13	Fiber Trunk	80.00 - 95.00	0.6000	0.4243
T1	14	DC Trunk	80.00 - 95.00	0.6000	0.4243
T2	2	1/2	60.00 - 80.00	0.6000	0.4331
T2	4	HYBRIFLEX 1-1/4"	60.00 - 80.00	0.6000	0.4331
T2	6	0.3" dia RET	60.00 - 80.00	0.6000	0.4331
T2	7	1 5/8	60.00 - 80.00	0.6000	0.4331
T2	8	7/8	60.00 - 80.00	0.6000	0.4331
T2	9	Fiber Trunk	60.00 - 80.00	0.6000	0.4331
T2	10	DC Trunk	60.00 - 80.00	0.6000	0.4331
T2	11	0.3" dia RET	60.00 - 80.00	0.6000	0.4331
T2	12	HYBRIFLEX 1-5/8"	60.00 - 80.00	0.6000	0.4331
T2	13	Fiber Trunk	60.00 - 80.00	0.6000	0.4331
T2	14	DC Trunk	60.00 - 80.00	0.6000	0.4331
T3	1	1 5/8	53.33 - 55.00	0.6000	0.4183
T3	2	1/2	53.33 - 60.00	0.6000	0.4183
T3	4	HYBRIFLEX 1-1/4"	53.33 - 60.00	0.6000	0.4183
T3	6	0.3" dia RET	53.33 - 60.00	0.6000	0.4183
T3	7	1 5/8	53.33 - 60.00	0.6000	0.4183
T3	8	7/8	53.33 - 60.00	0.6000	0.4183
T3	9	Fiber Trunk	53.33 - 60.00	0.6000	0.4183
T3	10	DC Trunk	53.33 - 60.00	0.6000	0.4183
T3	11	0.3" dia RET	53.33 - 60.00	0.6000	0.4183
T3	12	HYBRIFLEX 1-5/8"	53.33 - 60.00	0.6000	0.4183
T3	13	Fiber Trunk	53.33 - 60.00	0.6000	0.4183
T3	14	DC Trunk	53.33 - 60.00	0.6000	0.4183
T4	1	1 5/8	40.00 - 53.33	0.6000	0.2922
T4	2	1/2	40.00 - 53.33	0.6000	0.2922
T4	4	HYBRIFLEX 1-1/4"	40.00 - 53.33	0.6000	0.2922
T4	6	0.3" dia RET	40.00 - 53.33	0.6000	0.2922
T4	7	1 5/8	40.00 - 53.33	0.6000	0.2922
T4	8	7/8	40.00 - 53.33	0.6000	0.2922
T4	9	Fiber Trunk	40.00 - 53.33	0.6000	0.2922
T4	10	DC Trunk	40.00 - 53.33	0.6000	0.2922
T4	11	0.3" dia RET	40.00 - 53.33	0.6000	0.2922
T4	12	HYBRIFLEX 1-5/8"	40.00 - 53.33	0.6000	0.2922
T4	13	Fiber Trunk	40.00 - 53.33	0.6000	0.2922
T4	14	DC Trunk	40.00 - 53.33	0.6000	0.2922
T5	1	1 5/8	20.00 - 40.00	0.6000	0.5531
T5	2	1/2	20.00 - 40.00	0.6000	0.5531
T5	4	HYBRIFLEX 1-1/4"	20.00 - 40.00	0.6000	0.5531
T5	5	1/2	20.00 - 30.00	0.6000	0.5531
T5	6	0.3" dia RET	20.00 - 40.00	0.6000	0.5531
T5	7	1 5/8	20.00 - 40.00	0.6000	0.5531
T5	8	7/8	20.00 - 40.00	0.6000	0.5531
T5	9	Fiber Trunk	20.00 - 40.00	0.6000	0.5531
T5	10	DC Trunk	20.00 - 40.00	0.6000	0.5531
T5	11	0.3" dia RET	20.00 - 40.00	0.6000	0.5531
T5	12	HYBRIFLEX 1-5/8"	20.00 - 40.00	0.6000	0.5531
T5	13	Fiber Trunk	20.00 - 40.00	0.6000	0.5531
T5	14	DC Trunk	20.00 - 40.00	0.6000	0.5531
T6	1	1 5/8	6.00 - 20.00	0.6000	0.6000
T6	2	1/2	6.00 - 20.00	0.6000	0.6000
T6	4	HYBRIFLEX 1-1/4"	6.00 - 20.00	0.6000	0.6000
T6	5	1/2	6.00 - 20.00	0.6000	0.6000
T6	6	0.3" dia RET	6.00 - 20.00	0.6000	0.6000
T6	7	1 5/8	6.00 - 20.00	0.6000	0.6000
T6	8	7/8	6.00 - 20.00	0.6000	0.6000
T6	9	Fiber Trunk	6.00 - 20.00	0.6000	0.6000
T6	10	DC Trunk	6.00 - 20.00	0.6000	0.6000
T6	11	0.3" dia RET	6.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	12	HYBRIFLEX 1-5/8"	6.00 - 20.00	0.6000	0.6000
T6	13	Fiber Trunk	6.00 - 20.00	0.6000	0.6000
T6	14	DC Trunk	6.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) OPA-65R-LCUU-H4	A	From Leg	3.00	0.0000	98.00	No Ice	5.94	3.36	0.06
(AT&T - Existing)			0.00			1/2" Ice	6.28	3.66	0.10
			0.00			1" Ice	6.62	3.97	0.14
(2) OPA-65R-LCUU-H4	B	From Leg	3.00	0.0000	98.00	No Ice	5.94	3.36	0.06
(AT&T - Existing)			0.00			1/2" Ice	6.28	3.66	0.10
			0.00			1" Ice	6.62	3.97	0.14
(2) OPA-65R-LCUU-H4	C	From Leg	3.00	0.0000	98.00	No Ice	5.94	3.36	0.06
(AT&T - Existing)			0.00			1/2" Ice	6.28	3.66	0.10
			0.00			1" Ice	6.62	3.97	0.14
SBNHH-1D65A	A	From Leg	3.00	0.0000	98.00	No Ice	5.88	3.86	0.04
(AT&T - Proposed)			0.00			1/2" Ice	6.25	4.22	0.08
			0.00			1" Ice	6.62	4.57	0.12
SBNHH-1D65A	B	From Leg	3.00	0.0000	98.00	No Ice	5.88	3.86	0.04
(AT&T - Proposed)			0.00			1/2" Ice	6.25	4.22	0.08
			0.00			1" Ice	6.62	4.57	0.12
SBNHH-1D65A	C	From Leg	3.00	0.0000	98.00	No Ice	5.88	3.86	0.04
(AT&T - Proposed)			0.00			1/2" Ice	6.25	4.22	0.08
			0.00			1" Ice	6.62	4.57	0.12
(2) RRUS-11	A	From Leg	2.00	0.0000	98.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			0.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
RRUS-12	A	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
RRUS-32	A	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
(2) RRUS-32	A	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Proposed)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-E2	A	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
(2) RRUS-11	B	From Leg	2.00	0.0000	98.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			0.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
RRUS-12	B	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
RRUS-32	B	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) RRUS-32	B	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Proposed)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-E2	B	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
(2) RRUS-11	C	From Leg	2.00	0.0000	98.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			0.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
RRUS-12	C	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
RRUS-32	C	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
(2) RRUS-32	C	From Leg	2.00	0.0000	98.00	No Ice	3.31	2.42	0.08
(AT&T - Proposed)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-E2	C	From Leg	2.00	0.0000	98.00	No Ice	3.15	1.29	0.06
(AT&T - Proposed)			0.00			1/2" Ice	3.36	1.44	0.08
			0.00			1" Ice	3.59	1.60	0.11
DC6-48-60-18-8F Surge	A	From Leg	0.00	0.0000	98.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	B	From Leg	0.00	0.0000	98.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	C	From Leg	0.00	0.0000	98.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Proposed)			0.00			1" Ice	2.29	2.29	0.06
12' Boom Starmount	A	From Leg	1.50	0.0000	97.00	No Ice	15.00	8.00	0.47
(AT&T - Existing)			0.00			1/2" Ice	20.00	11.00	0.68
			0.00			1" Ice	26.00	14.00	0.88
Mount Mods	A	From Leg	1.50	0.0000	97.00	No Ice	5.00	5.00	0.12
(AT&T - Proposed)			0.00			1/2" Ice	8.00	8.00	0.15
			0.00			1" Ice	11.00	11.00	0.18
12' Boom Starmount	B	From Leg	1.50	0.0000	97.00	No Ice	15.00	8.00	0.47
(AT&T - Existing)			0.00			1/2" Ice	20.00	11.00	0.68
			0.00			1" Ice	26.00	14.00	0.88
Mount Mods	B	From Leg	1.50	0.0000	97.00	No Ice	5.00	5.00	0.12
(AT&T - Proposed)			0.00			1/2" Ice	8.00	8.00	0.15
			0.00			1" Ice	11.00	11.00	0.18
12' Boom Starmount	C	From Leg	1.50	0.0000	97.00	No Ice	15.00	8.00	0.47
(AT&T - Existing)			0.00			1/2" Ice	20.00	11.00	0.68
			0.00			1" Ice	26.00	14.00	0.88
Mount Mods	C	From Leg	1.50	0.0000	97.00	No Ice	5.00	5.00	0.12
(AT&T - Proposed)			0.00			1/2" Ice	8.00	8.00	0.15
			0.00			1" Ice	11.00	11.00	0.18
Parabolic Grid	B	From Leg	0.50	0.0000	96.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	2.00	2.00	0.04
			0.00			1" Ice	2.80	2.80	0.06
APXVSPP18-C-A20	A	From Leg	3.00	0.0000	89.00	No Ice	8.02	5.28	0.06
(Sprint - Existing)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C-A20	B	From Leg	3.00	0.0000	89.00	No Ice	8.02	5.28	0.06
(Sprint - Existing)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20	C	From Leg	3.00	0.0000	89.00	No Ice	8.02	5.28	0.06
(Sprint - Existing)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVTM14	A	From Leg	3.00	0.0000	89.00	No Ice	6.34	3.61	0.06
(Sprint - Existing)			4.00			1/2" Ice	6.72	3.97	0.10
			0.00			1" Ice	7.10	4.33	0.14
APXVTM14	B	From Leg	3.00	0.0000	89.00	No Ice	6.34	3.61	0.06
(Sprint - Existing)			4.00			1/2" Ice	6.72	3.97	0.10
			0.00			1" Ice	7.10	4.33	0.14
APXVTM14	C	From Leg	3.00	0.0000	89.00	No Ice	6.34	3.61	0.06
(Sprint - Existing)			4.00			1/2" Ice	6.72	3.97	0.10
			0.00			1" Ice	7.10	4.33	0.14
(2) FD-RRH 4x45 1900	A	From Leg	3.00	0.0000	88.00	No Ice	2.32	2.38	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
(2) FD-RRH 4x45 1900	B	From Leg	3.00	0.0000	88.00	No Ice	2.32	2.38	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
(2) FD-RRH 4x45 1900	C	From Leg	3.00	0.0000	88.00	No Ice	2.32	2.38	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
FD-RRH 2x50 800	A	From Leg	3.00	0.0000	88.00	No Ice	2.06	1.93	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.24	2.11	0.09
			0.00			1" Ice	2.43	2.29	0.11
FD-RRH 2x50 800	B	From Leg	3.00	0.0000	88.00	No Ice	2.06	1.93	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.24	2.11	0.09
			0.00			1" Ice	2.43	2.29	0.11
FD-RRH 2x50 800	C	From Leg	3.00	0.0000	88.00	No Ice	2.06	1.93	0.06
(Sprint - Existing)			0.00			1/2" Ice	2.24	2.11	0.09
			0.00			1" Ice	2.43	2.29	0.11
TD-RRH8x20-25	A	From Leg	3.00	0.0000	88.00	No Ice	4.05	1.53	0.07
(Sprint - Existing)			0.00			1/2" Ice	4.30	1.71	0.10
			0.00			1" Ice	4.56	1.90	0.13
TD-RRH8x20-25	B	From Leg	3.00	0.0000	88.00	No Ice	4.05	1.53	0.07
(Sprint - Existing)			0.00			1/2" Ice	4.30	1.71	0.10
			0.00			1" Ice	4.56	1.90	0.13
TD-RRH8x20-25	C	From Leg	3.00	0.0000	88.00	No Ice	4.05	1.53	0.07
(Sprint - Existing)			0.00			1/2" Ice	4.30	1.71	0.10
			0.00			1" Ice	4.56	1.90	0.13
13-ft T-Frame	A	From Leg	1.00	0.0000	89.00	No Ice	11.70	11.70	0.53
(Sprint - Existing)			0.00			1/2" Ice	16.40	16.40	0.74
			0.00			1" Ice	21.10	21.10	0.96
13-ft T-Frame	B	From Leg	1.00	0.0000	89.00	No Ice	11.70	11.70	0.53
(Sprint - Existing)			0.00			1/2" Ice	16.40	16.40	0.74
			0.00			1" Ice	21.10	21.10	0.96
13-ft T-Frame	C	From Leg	1.00	0.0000	89.00	No Ice	11.70	11.70	0.53
(Sprint - Existing)			0.00			1/2" Ice	16.40	16.40	0.74
			0.00			1" Ice	21.10	21.10	0.96
AIR21 B2A/B4P	A	From Leg	2.00	0.0000	83.00	No Ice	6.05	4.36	0.08
(T-Mobile - Existing)			2.00			1/2" Ice	6.42	4.70	0.12
			0.00			1" Ice	6.80	5.06	0.17
AIR21 B2A/B4P	B	From Leg	2.00	0.0000	83.00	No Ice	6.05	4.36	0.08
(T-Mobile - Existing)			2.00			1/2" Ice	6.42	4.70	0.12
			0.00			1" Ice	6.80	5.06	0.17
AIR21 B2A/B4P	C	From Leg	2.00	0.0000	83.00	No Ice	6.05	4.36	0.08
(T-Mobile - Existing)			2.00			1/2" Ice	6.42	4.70	0.12
			0.00			1" Ice	6.80	5.06	0.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
KRC 118 057/1	A	From Leg	2.00	0.0000	83.00	No Ice	7.65	5.27	0.12
(T-Mobile - Existing)			-2.00			1/2" Ice	8.05	5.64	0.18
			0.00			1" Ice	8.45	6.02	0.24
KRC 118 057/1	B	From Leg	2.00	0.0000	83.00	No Ice	7.65	5.27	0.12
(T-Mobile - Existing)			-2.00			1/2" Ice	8.05	5.64	0.18
			0.00			1" Ice	8.45	6.02	0.24
KRC 118 057/1	C	From Leg	2.00	0.0000	83.00	No Ice	7.65	5.27	0.12
(T-Mobile - Existing)			-2.00			1/2" Ice	8.05	5.64	0.18
			0.00			1" Ice	8.45	6.02	0.24
RRUS-11	A	From Leg	2.00	0.0000	83.00	No Ice	2.57	1.07	0.05
(T-Mobile - Existing)			-2.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
RRUS-11	B	From Leg	2.00	0.0000	83.00	No Ice	2.57	1.07	0.05
(T-Mobile - Existing)			-2.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
RRUS-11	C	From Leg	2.00	0.0000	83.00	No Ice	2.57	1.07	0.05
(T-Mobile - Existing)			-2.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
ATMAA1412D-1A20 Twin	A	From Leg	1.00	0.0000	80.00	No Ice	1.00	0.33	0.01
TMA			0.00			1/2" Ice	1.13	0.41	0.02
(T-Mobile - Existing)			0.00			1" Ice	1.26	0.50	0.03
ATMAA1412D-1A20 Twin	B	From Leg	1.00	0.0000	80.00	No Ice	1.00	0.33	0.01
TMA			0.00			1/2" Ice	1.13	0.41	0.02
(T-Mobile - Existing)			0.00			1" Ice	1.26	0.50	0.03
ATMAA1412D-1A20 Twin	C	From Leg	1.00	0.0000	80.00	No Ice	1.00	0.33	0.01
TMA			0.00			1/2" Ice	1.13	0.41	0.02
(T-Mobile - Existing)			0.00			1" Ice	1.26	0.50	0.03
Site Pro WiMAX Tower	A	From Leg	1.00	0.0000	83.00	No Ice	2.85	2.85	0.15
Mount CWT02			0.00			1/2" Ice	4.05	4.05	0.20
(T-Mobile - Existing)			0.00			1" Ice	5.25	5.25	0.25
Site Pro WiMAX Tower	B	From Leg	1.00	0.0000	83.00	No Ice	2.85	2.85	0.15
Mount CWT02			0.00			1/2" Ice	4.05	4.05	0.20
(T-Mobile - Existing)			0.00			1" Ice	5.25	5.25	0.25
Site Pro WiMAX Tower	C	From Leg	1.00	0.0000	83.00	No Ice	2.85	2.85	0.15
Mount CWT02			0.00			1/2" Ice	4.05	4.05	0.20
(T-Mobile - Existing)			0.00			1" Ice	5.25	5.25	0.25
6810 4 Bay	B	From Leg	1.00	0.0000	65.00	No Ice	28.90	28.90	0.43
			0.00			1/2" Ice	34.00	34.00	1.01
			0.00			1" Ice	39.10	39.10	1.60
2.5" Tube x 2' Standoff	C	From Leg	1.00	0.0000	30.00	No Ice	1.11	0.63	0.12
(Sprint)			0.00			1/2" Ice	1.44	0.84	0.13
			0.00			1" Ice	1.79	1.06	0.14
GPS	C	From Leg	2.00	0.0000	30.00	No Ice	1.00	1.00	0.01
(Sprint)			0.00			1/2" Ice	1.50	1.50	0.01
			0.00			1" Ice	2.00	2.00	0.02

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	90.00	0.959	18	74.792	A	2.445	12.397	9.583	64.57	7.678	0.000
100.00-80.00					B	2.445	12.397		64.57	4.522	0.000
					C	2.445	12.397		64.57	0.000	0.000
T2 80.00-60.00	70.00	0.892	17	74.792	A	2.445	12.397	9.583	64.57	10.160	0.000
					B	2.445	12.397		64.57	12.920	0.000
					C	2.445	12.397		64.57	53.700	0.000
T3 60.00-53.33	56.67	0.84	16	25.290	A	0.809	5.003	3.891	66.95	3.719	0.000
					B	0.809	5.003		66.95	4.309	0.000
					C	0.809	5.003		66.95	17.909	0.000
T4 53.33-40.00	46.67	0.795	15	50.543	A	4.679	9.991	7.776	53.01	9.411	0.000
					B	4.679	9.991		53.01	8.611	0.000
					C	4.679	9.991		53.01	35.791	0.000
T5 40.00-20.00	30.00	0.701	13	99.283	A	7.278	18.574	18.574	71.85	14.120	0.000
					B	7.278	18.574		71.85	13.500	0.000
					C	7.278	18.574		71.85	53.700	0.000
T6 20.00-0.00	10.00	0.7	13	139.283	A	10.818	18.574	18.574	63.19	9.884	0.000
					B	10.818	18.574		63.19	9.856	0.000
					C	10.818	18.574		63.19	37.590	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 100.00-80.00	90.00	0.959	5	1.6583	80.319	A	2.445	43.792	20.639	44.64	58.345	0.000
						B	2.445	43.792		44.64	15.578	0.000
						C	2.445	43.792		44.64	0.000	0.000
T2 80.00-60.00	70.00	0.892	5	1.6171	80.182	A	2.445	43.013	20.364	44.80	75.791	0.000
						B	2.445	43.013		44.80	44.082	0.000
						C	2.445	43.013		44.80	85.726	0.000
T3 60.00-53.33	56.67	0.84	5	1.5833	27.051	A	0.809	14.927	7.411	47.10	25.730	0.000
						B	0.809	14.927		47.10	14.585	0.000
						C	0.809	14.927		47.10	28.427	0.000
T4 53.33-40.00	46.67	0.795	4	1.5529	53.993	A	4.679	33.537	14.676	38.40	55.752	0.000
						B	4.679	33.537		38.40	28.938	0.000
						C	4.679	33.537		38.40	56.519	0.000
T5 40.00-20.00	30.00	0.701	4	1.4858	104.242	A	7.278	39.309	28.496	61.17	80.966	0.000
						B	7.278	39.309		61.17	46.276	0.000
						C	7.278	39.309		61.17	83.833	0.000
T6 20.00-0.00	10.00	0.7	4	1.3312	143.726	A	10.818	38.984	27.464	55.15	52.353	0.000
						B	10.818	38.984		55.15	33.334	0.000
						C	10.818	38.984		55.15	57.127	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	90.00	0.959	8	74.792	A	2.445	12.397	9.583	64.57	7.678	0.000
100.00-80.00					B	2.445	12.397		64.57	4.522	0.000
					C	2.445	12.397		64.57	0.000	0.000
T2 80.00-60.00	70.00	0.892	7	74.792	A	2.445	12.397	9.583	64.57	10.160	0.000
					B	2.445	12.397		64.57	12.920	0.000
					C	2.445	12.397		64.57	53.700	0.000
T3 60.00-53.33	56.67	0.84	7	25.290	A	0.809	5.003	3.891	66.95	3.719	0.000
					B	0.809	5.003		66.95	4.309	0.000
					C	0.809	5.003		66.95	17.909	0.000
T4 53.33-40.00	46.67	0.795	6	50.543	A	4.679	9.991	7.776	53.01	9.411	0.000
					B	4.679	9.991		53.01	8.611	0.000
					C	4.679	9.991		53.01	35.791	0.000
T5 40.00-20.00	30.00	0.701	5	99.283	A	7.278	18.574	18.574	71.85	14.120	0.000
					B	7.278	18.574		71.85	13.500	0.000
					C	7.278	18.574		71.85	53.700	0.000
T6 20.00-0.00	10.00	0.7	5	139.283	A	10.818	18.574	18.574	63.19	9.884	0.000
					B	10.818	18.574		63.19	9.856	0.000
					C	10.818	18.574		63.19	37.590	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	18	1	1	9.564	0.49	24.70	C
100.00-80.00			B	0.198	2.601		1	1	9.564			
			C	0.198	2.601		1	1	9.564			
T2	0.48	1.13	A	0.198	2.601	17	1	1	9.564	1.01	50.65	C
80.00-60.00			B	0.198	2.601		1	1	9.564			
			C	0.198	2.601		1	1	9.564			
T3	0.16	0.51	A	0.23	2.499	16	1	1	3.712	0.33	50.06	C
60.00-53.33			B	0.23	2.499		1	1	3.712			
			C	0.23	2.499		1	1	3.712			
T4	0.33	1.26	A	0.29	2.322	15	1	1	10.633	0.72	54.35	C
53.33-40.00			B	0.29	2.322		1	1	10.633			
			C	0.29	2.322		1	1	10.633			
T5	0.50	2.48	A	0.26	2.407	13	1	1	17.943	1.03	51.54	C
40.00-20.00			B	0.26	2.407		1	1	17.943			
			C	0.26	2.407		1	1	17.943			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	13	1	1	21.232	0.99	49.69	C
			B	0.211	2.56		1	1	21.232			
			C	0.211	2.56		1	1	21.232			
Sum Weight:	1.93	8.78						OTM	208.95 kip-ft	4.59		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	18	0.8	1	9.075	0.47	23.72	C
100.00-80.00			B	0.198	2.601		0.8	1	9.075			
			C	0.198	2.601		0.8	1	9.075			
T2	0.48	1.13	A	0.198	2.601	17	0.8	1	9.075	0.99	49.74	C
80.00-60.00			B	0.198	2.601		0.8	1	9.075			
			C	0.198	2.601		0.8	1	9.075			
T3	0.16	0.51	A	0.23	2.499	16	0.8	1	3.550	0.33	49.24	C
60.00-53.33			B	0.23	2.499		0.8	1	3.550			
			C	0.23	2.499		0.8	1	3.550			
T4	0.33	1.26	A	0.29	2.322	15	0.8	1	9.697	0.70	52.28	C
53.33-40.00			B	0.29	2.322		0.8	1	9.697			
			C	0.29	2.322		0.8	1	9.697			
T5	0.50	2.48	A	0.26	2.407	13	0.8	1	16.487	0.99	49.58	C
40.00-20.00			B	0.26	2.407		0.8	1	16.487			
			C	0.26	2.407		0.8	1	16.487			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	13	0.8	1	19.068	0.93	46.59	C
			B	0.211	2.56		0.8	1	19.068			
			C	0.211	2.56		0.8	1	19.068			
Sum Weight:	1.93	8.78						OTM	202.52 kip-ft	4.42		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	18	0.85	1	9.197	0.48	23.96	C
100.00-80.00			B	0.198	2.601		0.85	1	9.197			
			C	0.198	2.601		0.85	1	9.197			
T2	0.48	1.13	A	0.198	2.601	17	0.85	1	9.197	1.00	49.96	C
80.00-60.00			B	0.198	2.601		0.85	1	9.197			
			C	0.198	2.601		0.85	1	9.197			
T3	0.16	0.51	A	0.23	2.499	16	0.85	1	3.591	0.33	49.44	C
60.00-53.33			B	0.23	2.499		0.85	1	3.591			
			C	0.23	2.499		0.85	1	3.591			
T4	0.33	1.26	A	0.29	2.322	15	0.85	1	9.931	0.70	52.80	C
53.33-40.00			B	0.29	2.322		0.85	1	9.931			
			C	0.29	2.322		0.85	1	9.931			
T5	0.50	2.48	A	0.26	2.407	13	0.85	1	16.851	1.00	50.07	C
40.00-20.00			B	0.26	2.407		0.85	1	16.851			
			C	0.26	2.407		0.85	1	16.851			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	13	0.85	1	19.609	0.95	47.36	C
			B	0.211	2.56		0.85	1	19.609			
			C	0.211	2.56		0.85	1	19.609			
Sum Weight:	1.93	8.78						OTM	204.13 kip-ft	4.46		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.76	2.59	A	0.576	1.821	5	1	1	34.354	0.42	20.82	C
100.00-80.00			B	0.576	1.821		1	1	34.354			
			C	0.576	1.821		1	1	34.354			
T2	3.30	3.01	A	0.567	1.828	5	1	1	33.558	0.62	31.03	C
80.00-60.00			B	0.567	1.828		1	1	33.558			
			C	0.567	1.828		1	1	33.558			
T3	1.10	1.15	A	0.582	1.816	5	1	1	11.740	0.19	29.17	C
60.00-53.33			B	0.582	1.816		1	1	11.740			
			C	0.582	1.816		1	1	11.740			
T4	2.23	3.01	A	0.708	1.777	4	1	1	32.066	0.36	27.09	C
53.33-40.00			B	0.708	1.777		1	1	32.066			
			C	0.708	1.777		1	1	32.066			
T5	3.27	4.39	A	0.447	1.979	4	1	1	33.134	0.59	29.53	C
40.00-20.00			B	0.447	1.979		1	1	33.134			
			C	0.447	1.979		1	1	33.134			
T6 20.00-0.00	2.12	4.65	A	0.347	2.18	4	1	1	34.784	0.52	26.14	C
			B	0.347	2.18		1	1	34.784			
			C	0.347	2.18		1	1	34.784			
Sum Weight:	12.78	18.80						OTM	131.75 kip-ft	2.71		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.76	2.59	A	0.576	1.821	5	0.8	1	33.864	0.41	20.63	C
100.00-80.00			B	0.576	1.821		0.8	1	33.864			
			C	0.576	1.821		0.8	1	33.864			
T2	3.30	3.01	A	0.567	1.828	5	0.8	1	33.068	0.62	30.85	C
80.00-60.00			B	0.567	1.828		0.8	1	33.068			
			C	0.567	1.828		0.8	1	33.068			
T3	1.10	1.15	A	0.582	1.816	5	0.8	1	11.579	0.19	29.00	C
60.00-53.33			B	0.582	1.816		0.8	1	11.579			
			C	0.582	1.816		0.8	1	11.579			
T4	2.23	3.01	A	0.708	1.777	4	0.8	1	31.130	0.35	26.63	C
53.33-40.00			B	0.708	1.777		0.8	1	31.130			
			C	0.708	1.777		0.8	1	31.130			
T5	3.27	4.39	A	0.447	1.979	4	0.8	1	31.679	0.58	29.06	C
40.00-20.00			B	0.447	1.979		0.8	1	31.679			
			C	0.447	1.979		0.8	1	31.679			
T6 20.00-0.00	2.12	4.65	A	0.347	2.18	4	0.8	1	32.620	0.51	25.37	C
			B	0.347	2.18		0.8	1	32.620			
			C	0.347	2.18		0.8	1	32.620			
Sum Weight:	12.78	18.80						OTM	130.35 kip-ft	2.67		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.76	2.59	A	0.576	1.821	5	0.85	1	33.987	0.41	20.68	C
100.00-80.00			B	0.576	1.821		0.85	1	33.987			
			C	0.576	1.821		0.85	1	33.987			
T2	3.30	3.01	A	0.567	1.828	5	0.85	1	33.191	0.62	30.89	C
80.00-60.00			B	0.567	1.828		0.85	1	33.191			
			C	0.567	1.828		0.85	1	33.191			
T3	1.10	1.15	A	0.582	1.816	5	0.85	1	11.619	0.19	29.04	C
60.00-53.33			B	0.582	1.816		0.85	1	11.619			
			C	0.582	1.816		0.85	1	11.619			
T4	2.23	3.01	A	0.708	1.777	4	0.85	1	31.364	0.36	26.74	C
53.33-40.00			B	0.708	1.777		0.85	1	31.364			
			C	0.708	1.777		0.85	1	31.364			
T5	3.27	4.39	A	0.447	1.979	4	0.85	1	32.043	0.58	29.18	C
40.00-20.00			B	0.447	1.979		0.85	1	32.043			
			C	0.447	1.979		0.85	1	32.043			
T6 20.00-0.00	2.12	4.65	A	0.347	2.18	4	0.85	1	33.161	0.51	25.57	C
			B	0.347	2.18		0.85	1	33.161			
			C	0.347	2.18		0.85	1	33.161			
Sum Weight:	12.78	18.80						OTM	130.70 kip-ft	2.68		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	8	1	1	9.564	0.21	10.28	C
100.00-80.00			B	0.198	2.601		1	1	9.564			
			C	0.198	2.601		1	1	9.564			
T2	0.48	1.13	A	0.198	2.601	7	1	1	9.564	0.42	21.08	C
80.00-60.00			B	0.198	2.601		1	1	9.564			
			C	0.198	2.601		1	1	9.564			
T3	0.16	0.51	A	0.23	2.499	7	1	1	3.712	0.14	20.83	C
60.00-53.33			B	0.23	2.499		1	1	3.712			
			C	0.23	2.499		1	1	3.712			
T4	0.33	1.26	A	0.29	2.322	6	1	1	10.633	0.30	22.62	C
53.33-40.00			B	0.29	2.322		1	1	10.633			
			C	0.29	2.322		1	1	10.633			
T5	0.50	2.48	A	0.26	2.407	5	1	1	17.943	0.43	21.45	C
40.00-20.00			B	0.26	2.407		1	1	17.943			
			C	0.26	2.407		1	1	17.943			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	5	1	1	21.232	0.41	20.68	C
			B	0.211	2.56		1	1	21.232			
			C	0.211	2.56		1	1	21.232			
Sum Weight:	1.93	8.78						OTM	86.97 kip-ft	1.91		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	8	0.8	1	9.075	0.20	9.87	C
100.00-80.00			B	0.198	2.601		0.8	1	9.075			
			C	0.198	2.601		0.8	1	9.075			
T2	0.48	1.13	A	0.198	2.601	7	0.8	1	9.075	0.41	20.70	C
80.00-60.00			B	0.198	2.601		0.8	1	9.075			
			C	0.198	2.601		0.8	1	9.075			
T3	0.16	0.51	A	0.23	2.499	7	0.8	1	3.550	0.14	20.50	C
60.00-53.33			B	0.23	2.499		0.8	1	3.550			
			C	0.23	2.499		0.8	1	3.550			
T4	0.33	1.26	A	0.29	2.322	6	0.8	1	9.697	0.29	21.76	C
53.33-40.00			B	0.29	2.322		0.8	1	9.697			
			C	0.29	2.322		0.8	1	9.697			
T5	0.50	2.48	A	0.26	2.407	5	0.8	1	16.487	0.41	20.64	C
40.00-20.00			B	0.26	2.407		0.8	1	16.487			
			C	0.26	2.407		0.8	1	16.487			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	5	0.8	1	19.068	0.39	19.39	C
			B	0.211	2.56		0.8	1	19.068			
			C	0.211	2.56		0.8	1	19.068			
Sum Weight:	1.93	8.78						OTM	84.30 kip-ft	1.84		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.10	0.75	A	0.198	2.601	8	0.85	1	9.197	0.20	9.97	C
100.00-80.00			B	0.198	2.601		0.85	1	9.197			
			C	0.198	2.601		0.85	1	9.197			
T2	0.48	1.13	A	0.198	2.601	7	0.85	1	9.197	0.42	20.80	C
80.00-60.00			B	0.198	2.601		0.85	1	9.197			
			C	0.198	2.601		0.85	1	9.197			
T3	0.16	0.51	A	0.23	2.499	7	0.85	1	3.591	0.14	20.58	C
60.00-53.33			B	0.23	2.499		0.85	1	3.591			
			C	0.23	2.499		0.85	1	3.591			
T4	0.33	1.26	A	0.29	2.322	6	0.85	1	9.931	0.29	21.98	C
53.33-40.00			B	0.29	2.322		0.85	1	9.931			
			C	0.29	2.322		0.85	1	9.931			
T5	0.50	2.48	A	0.26	2.407	5	0.85	1	16.851	0.42	20.84	C
40.00-20.00			B	0.26	2.407		0.85	1	16.851			
			C	0.26	2.407		0.85	1	16.851			
T6 20.00-0.00	0.35	2.65	A	0.211	2.56	5	0.85	1	19.609	0.39	19.71	C
			B	0.211	2.56		0.85	1	19.609			
			C	0.211	2.56		0.85	1	19.609			
Sum Weight:	1.93	8.78						OTM	84.97 kip-ft	1.86		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	6.48					
Bracing Weight	2.30					
Total Member Self-Weight	8.78			2.08	-2.59	
Total Weight	18.93			2.08	-2.59	
Wind 0 deg - No Ice		0.00	-8.87	-590.74	-2.66	1.79
Wind 30 deg - No Ice		4.38	-7.57	-507.18	-296.69	2.15
Wind 60 deg - No Ice		7.54	-4.35	-291.18	-510.53	1.94
Wind 90 deg - No Ice		8.75	-0.00	2.01	-590.67	1.23
Wind 120 deg - No Ice		7.69	4.44	298.42	-516.02	0.18
Wind 150 deg - No Ice		4.37	7.57	511.26	-296.57	-0.92
Wind 180 deg - No Ice		-0.00	8.70	588.47	-2.52	-1.76
Wind 210 deg - No Ice		-4.38	7.57	511.33	291.50	-2.15
Wind 240 deg - No Ice		-7.69	4.44	298.54	510.90	-1.98
Wind 270 deg - No Ice		-8.75	0.00	2.15	585.48	-1.23
Wind 300 deg - No Ice		-7.54	-4.35	-291.06	505.27	-0.18
Wind 330 deg - No Ice		-4.37	-7.57	-507.11	291.38	0.92
Member Ice	10.02					
Total Weight Ice	53.91			10.43	-16.25	
Wind 0 deg - Ice		0.00	-4.76	-305.48	-16.29	0.72
Wind 30 deg - Ice		2.36	-4.09	-262.26	-173.74	0.83
Wind 60 deg - Ice		4.09	-2.36	-146.86	-288.68	0.72
Wind 90 deg - Ice		4.73	-0.00	10.40	-331.16	0.42
Wind 120 deg - Ice		4.12	2.38	168.36	-289.86	0.01
Wind 150 deg - Ice		2.36	4.09	283.10	-173.67	-0.41
Wind 180 deg - Ice		-0.00	4.72	324.95	-16.22	-0.71
Wind 210 deg - Ice		-2.36	4.09	283.13	141.23	-0.83
Wind 240 deg - Ice		-4.12	2.38	168.42	257.39	-0.72
Wind 270 deg - Ice		-4.73	0.00	10.47	298.65	-0.42
Wind 300 deg - Ice		-4.09	-2.36	-146.79	256.14	-0.01
Wind 330 deg - Ice		-2.36	-4.09	-262.23	141.17	0.41
Total Weight	18.93			2.08	-2.59	
Wind 0 deg - Service		0.00	-3.69	-245.84	-0.81	0.75
Wind 30 deg - Service		1.82	-3.15	-211.06	-123.19	0.89
Wind 60 deg - Service		3.14	-1.81	-121.15	-212.20	0.81
Wind 90 deg - Service		3.64	-0.00	0.88	-245.55	0.51
Wind 120 deg - Service		3.20	1.85	124.26	-214.48	0.08
Wind 150 deg - Service		1.82	3.15	212.85	-123.14	-0.38
Wind 180 deg - Service		-0.00	3.62	244.98	-0.75	-0.73
Wind 210 deg - Service		-1.82	3.15	212.88	121.64	-0.89
Wind 240 deg - Service		-3.20	1.85	124.31	212.96	-0.82
Wind 270 deg - Service		-3.64	0.00	0.94	244.00	-0.51
Wind 300 deg - Service		-3.14	-1.81	-121.10	210.61	-0.08
Wind 330 deg - Service		-1.82	-3.15	-211.03	121.59	0.38

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice

Comb. No.	Description
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 30 deg - No Ice
7	1.2D+1.6W (pattern 1) 30 deg - No Ice
8	1.2D+1.6W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.6 Wind 30 deg - No Ice
10	1.2 Dead+1.6 Wind 60 deg - No Ice
11	1.2D+1.6W (pattern 1) 60 deg - No Ice
12	1.2D+1.6W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.6 Wind 60 deg - No Ice
14	1.2 Dead+1.6 Wind 90 deg - No Ice
15	1.2D+1.6W (pattern 1) 90 deg - No Ice
16	1.2D+1.6W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.6 Wind 90 deg - No Ice
18	1.2 Dead+1.6 Wind 120 deg - No Ice
19	1.2D+1.6W (pattern 1) 120 deg - No Ice
20	1.2D+1.6W (pattern 2) 120 deg - No Ice
21	0.9 Dead+1.6 Wind 120 deg - No Ice
22	1.2 Dead+1.6 Wind 150 deg - No Ice
23	1.2D+1.6W (pattern 1) 150 deg - No Ice
24	1.2D+1.6W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.6 Wind 150 deg - No Ice
26	1.2 Dead+1.6 Wind 180 deg - No Ice
27	1.2D+1.6W (pattern 1) 180 deg - No Ice
28	1.2D+1.6W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.6 Wind 180 deg - No Ice
30	1.2 Dead+1.6 Wind 210 deg - No Ice
31	1.2D+1.6W (pattern 1) 210 deg - No Ice
32	1.2D+1.6W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.6 Wind 210 deg - No Ice
34	1.2 Dead+1.6 Wind 240 deg - No Ice
35	1.2D+1.6W (pattern 1) 240 deg - No Ice
36	1.2D+1.6W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.6 Wind 240 deg - No Ice
38	1.2 Dead+1.6 Wind 270 deg - No Ice
39	1.2D+1.6W (pattern 1) 270 deg - No Ice
40	1.2D+1.6W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.6 Wind 270 deg - No Ice
42	1.2 Dead+1.6 Wind 300 deg - No Ice
43	1.2D+1.6W (pattern 1) 300 deg - No Ice
44	1.2D+1.6W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.6 Wind 300 deg - No Ice
46	1.2 Dead+1.6 Wind 330 deg - No Ice
47	1.2D+1.6W (pattern 1) 330 deg - No Ice
48	1.2D+1.6W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.6 Wind 330 deg - No Ice
50	1.2 Dead+1.0 Ice+1.0 Temp
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service

Comb. No.	Description
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	100 - 80	Leg	Max Tension	13	18.41	-0.04	0.02
			Max. Compression	18	-33.61	-0.08	-0.04
			Max. Mx	14	-6.76	0.51	-0.00
			Max. My	2	-6.90	0.01	-0.51
			Max. Vy	14	0.90	-0.27	-0.02
			Max. Vx	2	-0.91	0.00	0.28
		Diagonal	Max Tension	22	7.16	0.00	0.00
		Horizontal	Max Tension	18	0.58	0.00	0.00
			Max. Compression	18	-6.03	0.00	0.00
			Max. Mx	50	0.23	-0.02	0.00
			Max. My	30	0.52	0.00	0.00
			Max. Vy	50	0.02	0.00	0.00
			Max. Vx	30	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-3.04	0.00	0.00
			Max. Mx	50	-2.93	-0.02	0.00
			Max. My	30	-2.94	0.00	0.00
			Max. Vy	50	0.02	0.00	0.00
			Max. Vx	30	-0.00	0.00	0.00
T2	80 - 60	Leg	Max Tension	13	68.75	-0.23	0.08
			Max. Compression	18	-88.34	-0.36	-0.20
			Max. Mx	17	-74.96	-0.44	0.01
			Max. My	5	-85.34	0.02	0.45
			Max. Vy	34	0.19	0.23	-0.17
			Max. Vx	2	0.26	-0.03	0.28
		Diagonal	Max Tension	10	9.27	0.00	0.00
		Horizontal	Max Tension	18	1.53	0.00	0.00
			Max. Compression	20	-8.54	0.00	0.00
			Max. Mx	50	0.26	0.02	0.00
			Max. My	30	1.32	0.00	-0.00
			Max. Vy	50	-0.02	0.00	0.00
			Max. Vx	30	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	20	-6.91	0.00	0.00
			Max. Mx	50	-5.62	0.02	0.00
			Max. My	30	-5.96	0.00	-0.00
			Max. Vy	50	-0.02	0.00	0.00
			Max. Vx	30	0.00	0.00	0.00
T3	60 - 53.33	Leg	Max Tension	29	87.58	-0.00	-0.48
			Max. Compression	18	-111.00	-0.56	-0.32
			Max. Mx	14	-97.62	-0.66	-0.04
			Max. My	26	-62.01	-0.15	-0.67
			Max. Vy	6	-0.13	-0.29	0.39

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	26	-0.14	-0.00	-0.50
		Diagonal	Max Tension	10	11.29	0.00	0.00
		Horizontal	Max Tension	18	1.92	0.00	0.00
			Max. Compression	18	-11.61	0.00	0.00
			Max. Mx	50	0.30	0.02	0.00
			Max. My	33	1.61	0.00	-0.00
			Max. Vy	50	0.02	0.00	0.00
			Max. Vx	33	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	18	-9.93	0.00	0.00
			Max. Mx	50	-6.86	0.02	0.00
			Max. My	33	-5.91	0.00	-0.00
			Max. Vy	50	0.02	0.00	0.00
			Max. Vx	33	0.00	0.00	0.00
T4	53.33 - 40	Leg	Max Tension	29	130.69	-0.00	0.49
			Max. Compression	18	-156.94	-2.05	-1.18
			Max. Mx	37	-152.65	2.23	-1.10
			Max. My	5	-152.62	0.16	2.48
			Max. Vy	6	-1.29	-1.33	0.86
			Max. Vx	26	-1.43	0.01	-1.69
		Diagonal	Max Tension	10	12.52	0.00	0.00
		Horizontal	Max Tension	18	2.72	0.00	0.00
			Max. Compression	18	-11.87	0.00	0.00
			Max. Mx	50	0.34	0.02	0.00
			Max. My	30	2.35	0.00	-0.00
			Max. Vy	50	-0.02	0.00	0.00
			Max. Vx	30	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	18	2.72	0.00	0.00
			Max. Compression	18	-2.72	0.00	0.00
			Max. Mx	50	0.34	-0.02	0.00
			Max. My	33	2.29	0.00	0.00
			Max. Vy	50	0.03	0.00	0.00
			Max. Vx	33	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	18	-11.19	0.00	0.00
			Max. Mx	50	-7.60	0.02	0.00
			Max. My	33	-6.08	0.00	-0.00
			Max. Vy	50	-0.02	0.00	0.00
			Max. Vx	33	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	18	-6.20	0.00	0.00
			Max. Mx	50	-3.89	0.02	0.00
			Max. My	30	-4.26	0.00	-0.00
			Max. Vy	50	-0.02	0.00	0.00
			Max. Vx	30	0.00	0.00	0.00
T5	40 - 20	Leg	Max Tension	29	142.11	-1.15	0.02
			Max. Compression	18	-154.13	1.69	-0.01
			Max. Mx	21	-148.72	2.49	-0.01
			Max. My	30	-6.01	-0.26	2.91
			Max. Vy	37	0.29	2.48	0.16
			Max. Vx	6	-0.39	-0.26	-2.91
		Diagonal	Max Tension	37	3.55	0.00	0.00
			Max. Compression	14	-4.17	0.03	0.00
			Max. Mx	26	-0.71	0.07	-0.01
			Max. My	14	-1.41	0.06	-0.02
			Max. Vy	55	-0.02	0.05	-0.00
			Max. Vx	14	0.01	0.06	-0.02
T6	20 - 0	Leg	Max Tension	29	140.67	-1.14	0.00
			Max. Compression	18	-155.34	0.00	0.00
			Max. Mx	18	-153.28	1.25	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	30	-7.94	-0.09	1.92
			Max. Vy	42	-0.18	-0.94	0.00
			Max. Vx	30	0.33	-0.09	1.92
		Diagonal	Max Tension	9	1.78	0.00	0.00
			Max. Compression	6	-2.00	0.00	0.00
			Max. Mx	18	-0.20	0.09	-0.00
			Max. My	30	0.16	0.06	0.02
			Max. Vy	55	-0.03	0.06	-0.00
			Max. Vx	30	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	34	156.41	9.41	-5.14
	Max. H_x	34	156.41	9.41	-5.14
	Max. H_z	13	-141.19	-8.41	4.58
	Min. Vert	13	-141.19	-8.41	4.58
	Min. H_x	13	-141.19	-8.41	4.58
	Min. H_z	34	156.41	9.41	-5.14
Leg B	Max. Vert	18	157.23	-9.30	-5.34
	Max. H_x	45	-140.53	8.29	4.76
	Max. H_z	45	-140.53	8.29	4.76
	Min. Vert	45	-140.53	8.29	4.76
	Min. H_x	18	157.23	-9.30	-5.34
	Min. H_z	18	157.23	-9.30	-5.34
Leg A	Max. Vert	2	156.22	0.23	10.71
	Max. H_x	16	7.19	0.89	0.49
	Max. H_z	2	156.22	0.23	10.71
	Min. Vert	29	-141.28	-0.22	-9.57
	Min. H_x	34	-67.36	-0.87	-4.58
	Min. H_z	29	-141.28	-0.22	-9.57

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	18.93	0.00	0.00	2.13	-2.67	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	22.72	0.00	-14.20	-965.50	-3.34	2.93
1.2D+1.6W (pattern 1) 0 deg - No Ice	22.72	0.00	-11.14	-676.92	-3.34	2.88
1.2D+1.6W (pattern 2) 0 deg - No Ice	22.72	0.00	-12.54	-896.93	-3.29	2.21
0.9 Dead+1.6 Wind 0 deg - No Ice	17.04	0.00	-14.20	-961.21	-2.52	2.91
1.2 Dead+1.6 Wind 30 deg - No Ice	22.72	7.00	-12.12	-829.08	-483.54	3.53
1.2D+1.6W (pattern 1) 30 deg - No Ice	22.72	5.48	-9.48	-580.02	-339.72	3.46
1.2D+1.6W (pattern 2) 30 deg -	22.72	6.21	-10.75	-771.89	-450.45	2.67

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice						
0.9 Dead+1.6 Wind 30 deg - No Ice	17.04	7.00	-12.12	-825.44	-480.20	3.48
1.2 Dead+1.6 Wind 60 deg - No Ice	22.72	12.06	-6.97	-476.36	-832.75	3.17
1.2D+1.6W (pattern 1) 60 deg - No Ice	22.72	9.43	-5.44	-332.72	-583.94	3.12
1.2D+1.6W (pattern 2) 60 deg - No Ice	22.72	10.72	-6.19	-443.74	-776.23	2.41
0.9 Dead+1.6 Wind 60 deg - No Ice	17.04	12.06	-6.97	-474.50	-827.59	3.16
1.2 Dead+1.6 Wind 90 deg - No Ice	22.72	14.00	-0.00	2.43	-963.57	1.99
1.2D+1.6W (pattern 1) 90 deg - No Ice	22.72	10.95	-0.00	2.44	-675.97	1.97
1.2D+1.6W (pattern 2) 90 deg - No Ice	22.72	12.41	-0.00	2.48	-897.50	1.53
0.9 Dead+1.6 Wind 90 deg - No Ice	17.04	14.00	-0.00	1.81	-957.78	2.00
1.2 Dead+1.6 Wind 120 deg - No Ice	22.72	12.30	7.10	486.48	-841.60	0.29
1.2D+1.6W (pattern 1) 120 deg - No Ice	22.72	9.65	5.57	342.19	-591.70	0.28
1.2D+1.6W (pattern 2) 120 deg - No Ice	22.72	10.86	6.27	452.24	-782.20	0.22
0.9 Dead+1.6 Wind 120 deg - No Ice	17.04	12.30	7.10	483.36	-836.51	0.29
1.2 Dead+1.6 Wind 150 deg - No Ice	22.72	7.00	12.12	834.10	-483.29	-1.48
1.2D+1.6W (pattern 1) 150 deg - No Ice	22.72	5.47	9.48	585.02	-339.49	-1.46
1.2D+1.6W (pattern 2) 150 deg - No Ice	22.72	6.21	10.75	776.95	-450.29	-1.10
0.9 Dead+1.6 Wind 150 deg - No Ice	17.04	7.00	12.12	829.12	-480.00	-1.49
1.2 Dead+1.6 Wind 180 deg - No Ice	22.72	-0.00	13.92	960.22	-3.11	-2.88
1.2D+1.6W (pattern 1) 180 deg - No Ice	22.72	-0.00	10.88	672.93	-3.10	-2.83
1.2D+1.6W (pattern 2) 180 deg - No Ice	22.72	-0.00	12.37	895.05	-3.16	-2.17
0.9 Dead+1.6 Wind 180 deg - No Ice	17.04	-0.00	13.92	954.55	-2.30	-2.86
1.2 Dead+1.6 Wind 210 deg - No Ice	22.72	-7.00	12.12	834.24	477.04	-3.53
1.2D+1.6W (pattern 1) 210 deg - No Ice	22.72	-5.48	9.48	585.16	333.26	-3.46
1.2D+1.6W (pattern 2) 210 deg - No Ice	22.72	-6.21	10.75	777.04	443.97	-2.67
0.9 Dead+1.6 Wind 210 deg - No Ice	17.04	-7.00	12.12	829.26	475.41	-3.48
1.2 Dead+1.6 Wind 240 deg - No Ice	22.72	-12.30	7.10	486.71	835.31	-3.23
1.2D+1.6W (pattern 1) 240 deg - No Ice	22.72	-9.66	5.58	342.41	585.40	-3.18
1.2D+1.6W (pattern 2) 240 deg - No Ice	22.72	-10.86	6.27	452.37	775.86	-2.47
0.9 Dead+1.6 Wind 240 deg - No Ice	17.04	-12.30	7.10	483.58	831.85	-3.21
1.2 Dead+1.6 Wind 270 deg - No Ice	22.72	-14.00	0.00	2.67	957.17	-1.99

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2D+1.6W (pattern 1) 270 deg - No Ice	22.72	-10.95	0.00	2.67	669.57	-1.97
1.2D+1.6W (pattern 2) 270 deg - No Ice	22.72	-12.41	0.00	2.61	891.10	-1.53
0.9 Dead+1.6 Wind 270 deg - No Ice	17.04	-14.00	0.00	2.04	953.01	-2.00
1.2 Dead+1.6 Wind 300 deg - No Ice	22.72	-12.06	-6.96	-476.18	826.22	-0.28
1.2D+1.6W (pattern 1) 300 deg - No Ice	22.72	-9.43	-5.44	-332.54	577.41	-0.28
1.2D+1.6W (pattern 2) 300 deg - No Ice	22.72	-10.71	-6.18	-443.65	769.76	-0.23
0.9 Dead+1.6 Wind 300 deg - No Ice	17.04	-12.06	-6.96	-474.32	822.69	-0.29
1.2 Dead+1.6 Wind 330 deg - No Ice	22.72	-7.00	-12.12	-828.99	476.89	1.48
1.2D+1.6W (pattern 1) 330 deg - No Ice	22.72	-5.47	-9.48	-579.92	333.08	1.46
1.2D+1.6W (pattern 2) 330 deg - No Ice	22.72	-6.21	-10.75	-771.84	443.91	1.10
0.9 Dead+1.6 Wind 330 deg - No Ice	17.04	-7.00	-12.12	-825.34	475.20	1.49
1.2 Dead+1.0 Ice+1.0 Temp	57.69	-0.00	-0.00	11.57	-17.99	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	57.69	0.00	-4.76	-322.01	-18.05	0.83
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	57.69	2.36	-4.09	-276.42	-184.33	0.96
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	57.69	4.09	-2.36	-154.55	-305.73	0.83
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	57.69	4.73	-0.00	11.53	-350.55	0.49
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	57.69	4.12	2.38	178.33	-306.89	0.02
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	57.69	2.36	4.09	299.52	-184.24	-0.47
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	57.69	-0.00	4.72	343.76	-17.96	-0.82
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	57.69	-2.36	4.09	299.58	148.31	-0.96
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	57.69	-4.12	2.38	178.42	270.94	-0.84
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	57.69	-4.73	0.00	11.62	314.56	-0.49
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	57.69	-4.09	-2.36	-154.48	269.69	-0.02
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	57.69	-2.36	-4.09	-276.38	148.24	0.47
Dead+Wind 0 deg - Service	18.93	0.00	-3.69	-248.88	-2.69	0.76
Dead+Wind 30 deg - Service	18.93	1.82	-3.15	-213.51	-127.18	0.91
Dead+Wind 60 deg - Service	18.93	3.14	-1.81	-122.05	-217.73	0.82
Dead+Wind 90 deg - Service	18.93	3.64	-0.00	2.09	-251.66	0.52
Dead+Wind 120 deg - Service	18.93	3.20	1.85	127.59	-220.04	0.07
Dead+Wind 150 deg - Service	18.93	1.82	3.15	217.72	-127.13	-0.39
Dead+Wind 180 deg - Service	18.93	-0.00	3.62	250.41	-2.63	-0.75
Dead+Wind 210 deg - Service	18.93	-1.82	3.15	217.75	121.87	-0.91
Dead+Wind 240 deg - Service	18.93	-3.20	1.85	127.65	214.76	-0.84
Dead+Wind 270 deg - Service	18.93	-3.64	0.00	2.15	246.35	-0.52
Dead+Wind 300 deg - Service	18.93	-3.14	-1.81	-122.00	212.39	-0.07
Dead+Wind 330 deg - Service	18.93	-1.82	-3.15	-213.48	121.82	0.39

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-18.93	0.00	0.00	18.93	0.00	0.000%
2	0.00	-22.72	-14.20	-0.00	22.72	14.20	0.000%
3	0.00	-22.72	-11.14	-0.00	22.72	11.14	0.000%
4	0.00	-22.72	-12.54	-0.00	22.72	12.54	0.000%
5	0.00	-17.04	-14.20	-0.00	17.04	14.20	0.000%
6	7.00	-22.72	-12.12	-7.00	22.72	12.12	0.000%
7	5.48	-22.72	-9.48	-5.48	22.72	9.48	0.000%
8	6.21	-22.72	-10.75	-6.21	22.72	10.75	0.000%
9	7.00	-17.04	-12.12	-7.00	17.04	12.12	0.000%
10	12.06	-22.72	-6.97	-12.06	22.72	6.97	0.000%
11	9.43	-22.72	-5.44	-9.43	22.72	5.44	0.000%
12	10.72	-22.72	-6.19	-10.72	22.72	6.19	0.000%
13	12.06	-17.04	-6.97	-12.06	17.04	6.97	0.000%
14	14.00	-22.72	-0.00	-14.00	22.72	0.00	0.000%
15	10.95	-22.72	-0.00	-10.95	22.72	0.00	0.000%
16	12.41	-22.72	-0.00	-12.41	22.72	0.00	0.000%
17	14.00	-17.04	-0.00	-14.00	17.04	0.00	0.000%
18	12.30	-22.72	7.10	-12.30	22.72	-7.10	0.000%
19	9.65	-22.72	5.57	-9.65	22.72	-5.57	0.000%
20	10.86	-22.72	6.27	-10.86	22.72	-6.27	0.000%
21	12.30	-17.04	7.10	-12.30	17.04	-7.10	0.000%
22	7.00	-22.72	12.12	-7.00	22.72	-12.12	0.000%
23	5.47	-22.72	9.48	-5.47	22.72	-9.48	0.000%
24	6.21	-22.72	10.75	-6.21	22.72	-10.75	0.000%
25	7.00	-17.04	12.12	-7.00	17.04	-12.12	0.000%
26	-0.00	-22.72	13.92	0.00	22.72	-13.92	0.000%
27	-0.00	-22.72	10.88	0.00	22.72	-10.88	0.000%
28	-0.00	-22.72	12.37	0.00	22.72	-12.37	0.000%
29	-0.00	-17.04	13.92	0.00	17.04	-13.92	0.000%
30	-7.00	-22.72	12.12	7.00	22.72	-12.12	0.000%
31	-5.48	-22.72	9.48	5.48	22.72	-9.48	0.000%
32	-6.21	-22.72	10.75	6.21	22.72	-10.75	0.000%
33	-7.00	-17.04	12.12	7.00	17.04	-12.12	0.000%
34	-12.30	-22.72	7.10	12.30	22.72	-7.10	0.000%
35	-9.66	-22.72	5.58	9.66	22.72	-5.58	0.000%
36	-10.86	-22.72	6.27	10.86	22.72	-6.27	0.000%
37	-12.30	-17.04	7.10	12.30	17.04	-7.10	0.000%
38	-14.00	-22.72	0.00	14.00	22.72	-0.00	0.000%
39	-10.95	-22.72	0.00	10.95	22.72	-0.00	0.000%
40	-12.41	-22.72	0.00	12.41	22.72	-0.00	0.000%
41	-14.00	-17.04	0.00	14.00	17.04	-0.00	0.000%
42	-12.06	-22.72	-6.96	12.06	22.72	6.96	0.000%
43	-9.43	-22.72	-5.44	9.43	22.72	5.44	0.000%
44	-10.71	-22.72	-6.18	10.71	22.72	6.18	0.000%
45	-12.06	-17.04	-6.96	12.06	17.04	6.96	0.000%
46	-7.00	-22.72	-12.12	7.00	22.72	12.12	0.000%
47	-5.47	-22.72	-9.48	5.47	22.72	9.48	0.000%
48	-6.21	-22.72	-10.75	6.21	22.72	10.75	0.000%
49	-7.00	-17.04	-12.12	7.00	17.04	12.12	0.000%
50	0.00	-57.69	0.00	0.00	57.69	0.00	0.000%
51	0.00	-57.69	-4.76	-0.00	57.69	4.76	0.000%
52	2.36	-57.69	-4.09	-2.36	57.69	4.09	0.000%
53	4.09	-57.69	-2.36	-4.09	57.69	2.36	0.000%
54	4.73	-57.69	-0.00	-4.73	57.69	0.00	0.000%
55	4.12	-57.69	2.38	-4.12	57.69	-2.38	0.000%
56	2.36	-57.69	4.09	-2.36	57.69	-4.09	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
57	-0.00	-57.69	4.72	0.00	57.69	-4.72	0.000%
58	-2.36	-57.69	4.09	2.36	57.69	-4.09	0.000%
59	-4.12	-57.69	2.38	4.12	57.69	-2.38	0.000%
60	-4.73	-57.69	0.00	4.73	57.69	-0.00	0.000%
61	-4.09	-57.69	-2.36	4.09	57.69	2.36	0.000%
62	-2.36	-57.69	-4.09	2.36	57.69	4.09	0.000%
63	0.00	-18.93	-3.69	-0.00	18.93	3.69	0.000%
64	1.82	-18.93	-3.15	-1.82	18.93	3.15	0.000%
65	3.14	-18.93	-1.81	-3.14	18.93	1.81	0.000%
66	3.64	-18.93	-0.00	-3.64	18.93	0.00	0.000%
67	3.20	-18.93	1.85	-3.20	18.93	-1.85	0.000%
68	1.82	-18.93	3.15	-1.82	18.93	-3.15	0.000%
69	-0.00	-18.93	3.62	0.00	18.93	-3.62	0.000%
70	-1.82	-18.93	3.15	1.82	18.93	-3.15	0.000%
71	-3.20	-18.93	1.85	3.20	18.93	-1.85	0.000%
72	-3.64	-18.93	0.00	3.64	18.93	-0.00	0.000%
73	-3.14	-18.93	-1.81	3.14	18.93	1.81	0.000%
74	-1.82	-18.93	-3.15	1.82	18.93	3.15	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000793
2	Yes	4	0.00000001	0.00025722
3	Yes	4	0.00000001	0.00003250
4	Yes	4	0.00000001	0.00008009
5	Yes	4	0.00000001	0.00053608
6	Yes	4	0.00000001	0.00004492
7	Yes	4	0.00000001	0.00003481
8	Yes	4	0.00000001	0.00003295
9	Yes	4	0.00000001	0.00031994
10	Yes	4	0.00000001	0.00003403
11	Yes	4	0.00000001	0.00003621
12	Yes	4	0.00000001	0.00003413
13	Yes	4	0.00000001	0.00001830
14	Yes	4	0.00000001	0.00006653
15	Yes	4	0.00000001	0.00003425
16	Yes	4	0.00000001	0.00003283
17	Yes	4	0.00000001	0.00044667
18	Yes	4	0.00000001	0.00005541
19	Yes	4	0.00000001	0.00003399
20	Yes	4	0.00000001	0.00004101
21	Yes	4	0.00000001	0.00021914
22	Yes	4	0.00000001	0.00006255
23	Yes	4	0.00000001	0.00003428
24	Yes	4	0.00000001	0.00003274
25	Yes	4	0.00000001	0.00042556
26	Yes	4	0.00000001	0.00003394
27	Yes	4	0.00000001	0.00003617
28	Yes	4	0.00000001	0.00003405
29	Yes	4	0.00000001	0.00001803
30	Yes	4	0.00000001	0.00004554
31	Yes	4	0.00000001	0.00003480
32	Yes	4	0.00000001	0.00003291
33	Yes	4	0.00000001	0.00031983

34	Yes	4	0.00000001	0.00026670
35	Yes	4	0.00000001	0.00003254
36	Yes	4	0.00000001	0.00008165
37	Yes	4	0.00000001	0.00053270
38	Yes	4	0.00000001	0.00006762
39	Yes	4	0.00000001	0.00003430
40	Yes	4	0.00000001	0.00003294
41	Yes	4	0.00000001	0.00046155
42	Yes	4	0.00000001	0.00003410
43	Yes	4	0.00000001	0.00003628
44	Yes	4	0.00000001	0.00003508
45	Yes	4	0.00000001	0.00001316
46	Yes	4	0.00000001	0.00006364
47	Yes	4	0.00000001	0.00003433
48	Yes	4	0.00000001	0.00003287
49	Yes	4	0.00000001	0.00043995
50	Yes	4	0.00000001	0.00006798
51	Yes	4	0.00000001	0.00047094
52	Yes	4	0.00000001	0.00048400
53	Yes	4	0.00000001	0.00049308
54	Yes	4	0.00000001	0.00048966
55	Yes	4	0.00000001	0.00048573
56	Yes	4	0.00000001	0.00048969
57	Yes	4	0.00000001	0.00049289
58	Yes	4	0.00000001	0.00048379
59	Yes	4	0.00000001	0.00047081
60	Yes	4	0.00000001	0.00046842
61	Yes	4	0.00000001	0.00047141
62	Yes	4	0.00000001	0.00046861
63	Yes	4	0.00000001	0.00001874
64	Yes	4	0.00000001	0.00001927
65	Yes	4	0.00000001	0.00001969
66	Yes	4	0.00000001	0.00001922
67	Yes	4	0.00000001	0.00003144
68	Yes	4	0.00000001	0.00001923
69	Yes	4	0.00000001	0.00001969
70	Yes	4	0.00000001	0.00001927
71	Yes	4	0.00000001	0.00001875
72	Yes	4	0.00000001	0.00001912
73	Yes	4	0.00000001	0.00002611
74	Yes	4	0.00000001	0.00001912

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	100 - 80	5.846	67	0.4991	0.0628
T2	80 - 60	3.755	67	0.4748	0.0619
T3	60 - 53.33	1.910	67	0.3630	0.0505
T4	53.33 - 40	1.420	67	0.3156	0.0417
T5	40 - 20	0.677	67	0.1877	0.0230
T6	20 - 0	0.148	67	0.0757	0.0053

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
98.00	(2) OPA-65R-LCUU-H4	67	5.634	0.4989	0.0628	98290
97.00	12' Boom Starmount	67	5.528	0.4987	0.0629	98290
96.00	Parabolic Grid	67	5.422	0.4985	0.0629	98290
89.00	APXVSPP18-C-A20	67	4.684	0.4942	0.0629	44677
88.00	(2) FD-RRH 4x45 1900	67	4.579	0.4930	0.0628	40954
83.00	AIR21 B2A/B4P	67	4.061	0.4837	0.0624	28779
80.00	ATMAA1412D-1A20 Twin TMA	67	3.755	0.4748	0.0619	23186
65.00	6810 4 Bay	67	2.326	0.3957	0.0553	8436
30.00	2.5" Tube x 2' Standoff	67	0.338	0.1197	0.0123	8137

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	100 - 80	22.309	18	1.9053	0.3291
T2	80 - 60	14.331	21	1.8115	0.3271
T3	60 - 53.33	7.291	21	1.3828	0.2676
T4	53.33 - 40	5.425	21	1.2027	0.2225
T5	40 - 20	2.583	18	0.7156	0.0890
T6	20 - 0	0.565	18	0.2890	0.0205

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
98.00	(2) OPA-65R-LCUU-H4	18	21.499	1.9043	0.3297	25354
97.00	12' Boom Starmount	18	21.094	1.9037	0.3300	25354
96.00	Parabolic Grid	18	20.689	1.9029	0.3303	25354
89.00	APXVSPP18-C-A20	18	17.873	1.8865	0.3312	11524
88.00	(2) FD-RRH 4x45 1900	18	17.474	1.8818	0.3311	10564
83.00	AIR21 B2A/B4P	18	15.498	1.8457	0.3294	7423
80.00	ATMAA1412D-1A20 Twin TMA	21	14.331	1.8115	0.3271	5983
65.00	6810 4 Bay	21	8.877	1.5076	0.2881	2186
30.00	2.5" Tube x 2' Standoff	18	1.293	0.4565	0.0474	2093

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	100	Leg	A325N	0.7500	4	4.60	29.82	0.154 ✔	1	Bolt Tension
T2	80	Leg	A325N	0.7500	4	17.19	29.82	0.576 ✔	1	Bolt Tension
T4	53.33	Leg	A325N	1.0000	4	32.66	53.01	0.616 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T5	40	Secondary Horizontal	A325N	0.7500	1	2.72	15.77	0.172 ✔	1	Member Bearing
		Leg	A325N	1.0000	6	23.36	53.01	0.441 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3.55	7.83	0.453 ✔	1	Member Bearing
T6	20	Leg	A36	1.5000	4	35.05	57.65	0.608 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	1.78	7.83	0.228 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	P2.5x.276	20.00	3.33	43.3 K=1.00	2.2535	-33.61	88.43	0.380 [1] ✔
T2	80 - 60	P2.5x.276 (GR)	20.00	3.33	43.3 K=1.00	2.2535	-88.34	96.20	0.918 [1] ✔
T3	60 - 53.33	P3x.3 (GR)	6.67	3.34	35.2 K=1.00	3.0159	-111.01	148.57	0.747 [1] ✔
T4	53.33 - 40	P3x.3 (GR)	13.33	1.67	17.6 K=1.00	3.0159	-156.94	160.63	0.977 [1] ✔
T5	40 - 20	P5x.258 (GR)	20.03	6.68	42.7 K=1.00	4.2999	-154.13	198.12	0.778 [1] ✔
T6	20 - 0	P5x.258 (GR)	20.03	6.68	42.7 K=1.00	4.2999	-155.34	198.12	0.784 [1] ✔

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	40 - 20	L2x2x3/16	7.69	3.68	114.1 K=1.02	0.7150	-4.17	11.67	0.357 [1] ✔
T6	20 - 0	L2 1/2x2 1/2x3/16	9.79	4.69	115.2 K=1.01	0.9020	-2.00	14.53	0.137 [1] ✔

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-6.03	7.19	0.838 [1] ✔
T2	80 - 60	2L1 1/2x1 1/2x3/16	3.50	3.26	85.7 K=1.00	1.0547	-8.54	23.22	0.368 [1] ✔
T3	60 - 53.33	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3 K=1.00	1.0547	-11.61	23.51	0.494 [1] ✔
T4	53.33 - 40	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3 K=1.00	1.0547	-11.87	23.51	0.505 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	53.33 - 40	L2 1/2x2 1/2x5/16	3.50	2.94	96.0 K=1.33	1.4600	-2.72	29.11	0.093 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-3.04	7.19	0.422 [1] ✔
T2	80 - 60	2L1 1/2x1 1/2x3/16	3.50	3.26	85.7 K=1.00	1.0547	-6.91	23.22	0.298 [1] ✔
T3	60 - 53.33	2L1 1/2x1 1/2x3/16	3.50	3.26	85.7 K=1.00	1.0547	-9.93	23.22	0.427 [1] ✔
T4	53.33 - 40	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3 K=1.00	1.0547	-11.19	23.51	0.476 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	53.33 - 40	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3 K=1.00	1.0547	-6.20	23.51	0.264 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	P2.5x.276	20.00	3.33	43.3	2.2535	18.41	101.41	0.181 [1] ✔
T2	80 - 60	P2.5x.276 (GR)	20.00	3.33	43.3	2.2535	68.75	101.41	0.678 [1] ✔
T3	60 - 53.33	P3x.3 (GR)	6.67	3.34	35.2	3.0159	87.58	165.57	0.529 [1] ✔
T4	53.33 - 40	P3x.3 (GR)	13.33	1.67	17.6	3.0159	130.69	165.57	0.789 [1] ✔
T5	40 - 20	P5x.258 (GR)	20.03	6.68	42.7	4.2999	142.11	162.54	0.874 [1] ✔
T6	20 - 0	P5x.258 (GR)	20.03	6.68	42.7	4.2999	140.67	162.54	0.865 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	5/8	4.83	4.50	345.8	0.3068	7.16	9.94	0.720 [1] ✔
T2	80 - 60	5/8	4.83	4.50	345.8	0.3068	9.27	9.94	0.932 [1] ✔
T3	60 - 53.33	3/4	4.83	4.43	283.6	0.4418	11.29	14.31	0.789 [1] ✔
T4	53.33 - 40	3/4	4.83	4.43	283.5	0.4418	12.52	14.31	0.875 [1] ✔
T5	40 - 20	L2x2x3/16	7.69	3.68	74.0	0.7150	3.55	23.17	0.153 [1] ✔
T6	20 - 0	L2 1/2x2 1/2x3/16	9.79	4.69	74.1	0.9020	1.78	29.22	0.061 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	0.58	17.09	0.034 [1] ✔
T2	80 - 60	2L1 1/2x1 1/2x3/16	3.50	3.26	85.7	1.0547	1.53	34.17	0.045 [1] ✔
T3	60 - 53.33	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3	1.0547	1.92	34.17	0.056 [1] ✔
T4	53.33 - 40	2L1 1/2x1 1/2x3/16	3.50	3.21	84.3	1.0547	2.72	34.17	0.080 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	53.33 - 40	L2 1/2x2 1/2x5/16	3.50	2.94	50.6	1.4600	2.72	47.30	0.057 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	100 - 80	Leg	P2.5x.276	2	-33.61	88.43	38.0	Pass
T2	80 - 60	Leg	P2.5x.276 (GR)	59	-88.34	96.20	91.8	Pass
T3	60 - 53.33	Leg	P3x.3 (GR)	119	-111.01	148.57	74.7	Pass
T4	53.33 - 40	Leg	P3x.3 (GR)	137	-156.94	160.63	97.7	Pass
T5	40 - 20	Leg	P5x.258 (GR)	192	142.11	162.54	87.4	Pass
T6	20 - 0	Leg	P5x.258 (GR)	213	140.67	162.54	86.5	Pass
T1	100 - 80	Diagonal	5/8	10	7.16	9.94	72.0	Pass
T2	80 - 60	Diagonal	5/8	67	9.27	9.94	93.2	Pass
T3	60 - 53.33	Diagonal	3/4	121	11.29	14.31	78.9	Pass
T4	53.33 - 40	Diagonal	3/4	145	12.52	14.31	87.5	Pass
T5	40 - 20	Diagonal	L2x2x3/16	208	-4.17	11.67	35.7 45.3 (b)	Pass
T6	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	217	-2.00	14.53	13.7 22.8 (b)	Pass
T1	100 - 80	Horizontal	L1 1/2x1 1/2x3/16	15	-6.03	7.19	83.8	Pass
T2	80 - 60	Horizontal	2L1 1/2x1 1/2x3/16	75	-8.54	23.22	36.8	Pass
T3	60 - 53.33	Horizontal	2L1 1/2x1 1/2x3/16	129	-11.61	23.51	49.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T4	53.33 - 40	Horizontal	2L1 1/2x1 1/2x3/16	153	-11.87	23.51	50.5	Pass
T4	53.33 - 40	Secondary Horizontal	L2 1/2x2 1/2x5/16	166	-2.72	29.11	9.3	Pass
							17.2 (b)	
T1	100 - 80	Top Girt	L1 1/2x1 1/2x3/16	4	-3.04	7.19	42.2	Pass
T2	80 - 60	Top Girt	2L1 1/2x1 1/2x3/16	63	-6.91	23.22	29.8	Pass
T3	60 - 53.33	Top Girt	2L1 1/2x1 1/2x3/16	66	-9.93	23.22	42.7	Pass
T4	53.33 - 40	Top Girt	2L1 1/2x1 1/2x3/16	141	-11.19	23.51	47.6	Pass
T4	53.33 - 40	Bottom Girt	2L1 1/2x1 1/2x3/16	144	-6.20	23.51	26.4	Pass
							Summary	
						Leg (T4)	97.7	Pass
						Diagonal (T2)	93.2	Pass
						Horizontal (T1)	83.8	Pass
						Secondary Horizontal (T4)	17.2	Pass
						Top Girt (T4)	47.6	Pass
						Bottom Girt (T4)	26.4	Pass
						Bolt Checks	61.6	Pass
						RATING =	**97.7**	**Pass**

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Subject:	FOUNDATION ANALYSIS
Location:	Danbury, CT
Rev. 1: 7/5/18	Prepared by: T.J.L. Checked by: C.F.C. Job No. 18027.00

Pier and Mat Foundation Analysis:

Input Data:

Tower Data

Overturning Moment =	$OM := 972 \cdot ft \cdot kips$	(User Input from tnxTower)	
Shear Force =	$S_t := 14 \cdot kip$	(User Input from tnxTower)	
Axial Force =	$WT_t := 23 \cdot kip$	(User Input from tnxTower)	
Max Compression Force =	$C_t := 157 \cdot kip$	(User Input from tnxTower)	
Max Uplift Force =	$U_t := 141 \cdot kip$	(User Input from tnxTower)	
Tower Height =	$H_t := 100 \cdot ft$	(User Input)	
Tower Width =	$W_t := 7.5 \cdot ft$	(User Input)	
Tower Position on Foundation (1=offset, 2=centered) =	$Pos_t := 2$	(User Input)	

Footing Data:

Overall Depth of Footing =	$D_f := 7.0 \cdot ft$	(User Input)	
Length of Pier =	$L_p := 4.25 \cdot ft$	(User Input)	
Extension of Pier Above Grade =	$L_{pag} := 0.25 \cdot ft$	(User Input)	
Diameter of Pier =	$d_p := 2.0 \cdot ft$	(User Input)	
Thickness of Footing =	$T_f := 3.0 \cdot ft$	(User Input)	
Width of Footing =	$W_f := 14.5 \cdot ft$	(User Input)	

Material Properties:

Concrete Compressive Strength =	$f_c := 4000 \cdot psi$	(User Input)	
Steel Reinforcment Yield Strength =	$f_y := 60000 \cdot psi$	(User Input)	
Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)	
Allowable Soil Bearing Capacity =	$q_s := 10000 \cdot psf$	(User Input)	
Unit Weight of Soil =	$\gamma_{soil} := 120 \cdot pcf$	(User Input)	
Unit Weight of Concrete =	$\gamma_{conc} := 150 \cdot pcf$	(User Input)	
Foundation Bouyancy =	$Bouyancy := 0$	(User Input)	(Yes=1 / No=0)
Depth to Neglect =	$n := 0 \cdot ft$	(User Input)	
Cohesion of Clay Type Soil =	$c := 0 \cdot ksf$	(User Input)	(Use 0 for Sandy Soil)
Seismic Zone Factor =	$Z := 2$	(User Input)	(UBC-1997 Fig 23-2)
Coefficient of Friction Between Concrete =	$\mu := 0.45$	(User Input)	

Pier Reinforcement:

Bar Size =	$BS_{pier} := 8$	(User Input)	
Bar Diameter =	$d_{bpier} := 1.0 \cdot in$	(User Input)	
Number of Bars =	$NB_{pier} := 8$	(User Input)	
Clear Cover of Reinforcement =	$Cvr_{pier} := 3 \cdot in$	(User Input)	
Reinforcement Location Factor =	$\alpha_{pier} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Coating Factor =	$\beta_{pier} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Concrete Strength Factor =	$\lambda_{pier} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Reinforcement Size Factor =	$\gamma_{pier} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Diameter of Tie =	$d_{Tie} := 4 \cdot in$	(User Input)	

Pad Reinforcement:

Bar Size =	$BS_{top} := 6$	(User Input)	(Top of Pad)
Bar Diameter =	$d_{btop} := 0.750 \cdot in$	(User Input)	(Top of Pad)
Number of Bars =	$NB_{top} := 15$	(User Input)	(Top of Pad)
Bar Size =	$BS_{bot} := 8$	(User Input)	(Bottom of Pad)
Bar Diameter =	$d_{bbot} := 1.000 \cdot in$	(User Input)	(Bottom of Pad)
Number of Bars =	$NB_{bot} := 15$	(User Input)	(Bottom of Pad)
Clear Cover of Reinforcement =	$Cvr_{pad} := 3.0 \cdot in$	(User Input)	
Reinforcement Location Factor =	$\alpha_{pad} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Coating Factor =	$\beta_{pad} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Concrete Strength Factor =	$\lambda_{pad} := 1.0$	(User Input)	(ACI-2008 12.2.4)
Reinforcement Size Factor =	$\gamma_{pad} := 1.0$	(User Input)	(ACI-2008 12.2.4)

Calculated Factors:

Pier Reinforcement Bar Area = $A_{bpier} := \frac{\pi \cdot d_{bpier}^2}{4} = 0.785 \cdot in^2$

Pad Top Reinforcement Bar Area = $A_{btop} := \frac{\pi \cdot d_{btop}^2}{4} = 0.442 \cdot in^2$

Pad Bottom Reinforcement Bar Area = $A_{bbot} := \frac{\pi \cdot d_{bbot}^2}{4} = 0.785 \cdot in^2$

Coefficient of Lateral Soil Pressure = $K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$

Load Factor = $LF := 1$

Stability of Footing:

Adjusted Concrete Unit Weight = $\gamma_c := if(Bouyancy = 1, \gamma_{conc} - 62.4pcf, \gamma_{conc}) = 150 \cdot pcf$

Adjusted Soil Unit Weight = $\gamma_s := if(Bouyancy = 1, \gamma_{soil} - 62.4pcf, \gamma_{soil}) = 120 \cdot pcf$

Passive Pressure = $P_{pn} := K_p \cdot \gamma_s \cdot n + c \cdot 2 \cdot \sqrt{K_p} = 0 \cdot ksf$

$P_{pt} := K_p \cdot \gamma_s \cdot (D_f - T_f) + c \cdot 2 \cdot \sqrt{K_p} = 1.44 \cdot ksf$

$P_{top} := if[n < (D_f - T_f), P_{pt}, P_{pn}] = 1.44 \cdot ksf$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 2.52 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 1.98 \cdot ksf$

$T_p := if[n < (D_f - T_f), T_f, (D_f - n)] = 3 \cdot ft$

$A_p := W_f \cdot T_p = 43.5 \cdot ft^2$

Ultimate Shear = $S_u := P_{ave} \cdot A_p = 86.13 \cdot kip$

Weight of Concrete = $WT_c := \left[\left(W_f^2 \cdot T_f\right) + (3) \cdot \left(\frac{d_p^2 \cdot \pi}{4} L_p\right)\right] \cdot \gamma_c = 100.621 \cdot kip$

Weight of Soil Above Footing = $WT_{s1} := \left[\left[W_f^2 - (3) \cdot \left(\frac{d_p^2 \cdot \pi}{4}\right)\right] \cdot \left(\left|L_p - L_{pag} - n\right|\right)\right] \cdot \gamma_s = 96.4 \cdot kip$

Weight of Soil Wedge at Back Face = $WT_{s2} := \left[\frac{(D_f - n)^2 \cdot \tan(\Phi_s)}{2} \cdot W_f\right] \cdot \gamma_s = 24.612 \cdot kip$

Foundation has undercut toe per Fred A. Nudd dwg 96-4992-1

Tower Offset = $X_{t1} := \left[\frac{W_f}{2} - \frac{(W_t \cdot \cos(30 \cdot deg))}{2}\right]$ $X_{t2} := \frac{W_f}{2} - \frac{(W_t \cdot \cos(30 \cdot deg))}{3}$

$X_t := if(Pos_t = 1, X_{t1}, X_{t2}) = 5.085$

$X_{off1} := \frac{W_f}{2} - \left[\frac{(W_t \cdot \cos(30 \cdot deg))}{3} + X_t\right] = 0$ $X_{off2} := 0$

$X_{off} := if(Pos_t = 1, X_{off1}, X_{off2})$ $X_{off} = 0 \cdot ft$

Total Weight = $WT_{tot} := 0.9WT_c + 0.75WT_{s1} = 162.9 \cdot kip$

Resisting Moment = $M_r := (WT_{tot}) \cdot \frac{W_f}{2} + 0.9WT_t \cdot \left(\frac{W_f}{2} - X_{off}\right) + 0.75\left(S_u \cdot \frac{T_p}{3}\right) + 0.75WT_{s2} \cdot \left[W_f + \frac{(D_f - n) \cdot \tan(\Phi_s)}{3}\right] = 1688 \cdot kip \cdot ft$

Overturning Moment = $M_{ot} := OM + S_t \cdot (L_p + T_f) = 1073.5 \cdot kip \cdot ft$

Foundation has undercut toe per Fred A. Nudd dwg 96-4992-1

Factor of Safety Actual = $FS := \frac{M_r}{M_{ot}} = 1.57$

Factor of Safety Required = $FS_{req} := 1$ $OverTurning\_Moment\_Check := if(FS \geq FS_{req}, "Okay", "No Good")$

OverTurning_Moment_Check = "Okay"

Shear Capacity in Pier:

Shear Resistance of Pier = $S_p := \frac{P_{ave} \cdot A_p + \mu \cdot WT_{tot}}{FS_{req}} = 159.415 \cdot kips$

$Shear\_Check := if(S_p > S_t, "Okay", "No Good")$

Shear_Check = "Okay"

Bearing Pressure Caused by Footing:

Total Load = $Load_{tot} := WT_c + WT_{s1} + WT_t = 220 \cdot kip$

Area of the Mat = $A_{mat} := W_f^2 = 210.25$

Section Modulus of Mat = $S := \frac{W_f^3}{6} = 508.1 \cdot ft^3$

Maximum Pressure in Mat = $P_{max} := \frac{Load_{tot}}{A_{mat}} + \frac{M_{ot}}{S} = 3.159 \cdot ksf$

$Max\_Pressure\_Check := if(P_{max} < 0.75q_s, "Okay", "No Good")$

Max_Pressure_Check = "Okay"

Minimum Pressure in Mat = $P_{min} := \frac{Load_{tot}}{A_{mat}} - \frac{M_{ot}}{S} = -1.066 \cdot ksf$

$Min\_Pressure\_Check := if[(P_{min} \geq 0) \cdot (P_{min} < 0.75q_s), "Okay", "No Good"]$

Min_Pressure_Check = "No Good"

Distance to Resultant of Pressure Distribution = $X_p := \frac{P_{max}}{\frac{P_{max} - P_{min}}{W_f}} \cdot \frac{1}{3} = 3.614$

Distance to Kern = $X_k := \frac{W_f}{6} = 2.417$

Since Resultant Force is Not in Kern, Area to which Pressure is Applied Must be Reduced.

Eccentricity = $e := \frac{M_{ot}}{Load_{tot}} = 4.879$

Adjusted Soil Pressure = $P_a := \frac{2 \cdot Load_{tot}}{3 \cdot W_f \cdot \left(\frac{W_f}{2} - e\right)} = 4.267 \cdot ksf$

$q_{adj} := if(P_{min} < 0, P_a, P_{max}) = 4.267 \cdot ksf$

$Pressure\_Check := if(q_{adj} < 0.75q_s, "Okay", "No Good")$

Pressure_Check = "Okay"

Concrete Bearing Capacity:

Strength Reduction Factor = $\Phi_c := 0.65$ (ACI-2008 9.3.2.2)

Bearing Strength Between Pier and Pad = $P_b := \Phi_c \cdot 0.85 \cdot f_c \cdot \frac{\pi \cdot d_p^2}{4} = 999.78 \cdot kips$ (ACI-2008 10.14)

$Bearing\_Check := if(P_b > LF \cdot C_t, "Okay", "No Good")$

Bearing_Check = "Okay"

Shear Strength of Concrete:

Beam Shear: (Critical section located at a distance d from the face of Pier) (ACI 11.3.1.1)

$\phi_c := 0.85$ (ACI 9.3.2.5)

$d := T_f - Cvr_{pad} - d_{bbot} = 32 \cdot in$

$FL := LF \cdot \frac{C_t}{W_f^2} = 0.747 \cdot ksf$

$V_{req} := FL \cdot (X_t - .5 \cdot d_p - d) \cdot W_f = 15.356 \cdot kips$

$V_{Avail} := \phi_c \cdot 2 \cdot \sqrt{f_c \cdot psi} \cdot W_f \cdot d = 599 \cdot kip$ (ACI-2008 11.2.1.1)

$Beam\_Shear\_Check := if(V_{req} < V_{Avail}, "Okay", "No Good")$

Beam_Shear_Check = "Okay"

Punching Shear: (Critical Section Located at a distance of d/2 from the face of pier) (ACI 11.11.1.2)

Critical Perimeter of Punching Shear = $b_o := (d_p + d) \cdot \pi = 14.7$

Area Included Inside Perimeter = $A_{bo} := \frac{\pi \cdot (d_p + d)^2}{4} = 17.1$

Required Shear Strength = $V_{req} := FL \cdot (W_f^2 - A_{bo}) = 144 \cdot kips$

Available Shear Strength = $V_{Avail} := \phi_c \cdot 4 \cdot \sqrt{f_c \cdot psi} \cdot b_o \cdot d = 1210.6 \cdot kip$ (ACI-2008 11.11.2.1)

$Punching\_Shear\_Check := if(V_{req} < V_{Avail}, "Okay", "No Good")$

Punching_Shear_Check = "Okay"

Steel Reinforcement in Pad:

Required Reinforcement for Bending:

Strength Reduction Factor = $\phi_m := .90$ (ACI-2008 9.3.2.1)

Maximum Moment in Pad = $M_{max} := 352 \cdot kip \cdot ft$ (User Input)

Design Moment = $M_n := \frac{LF \cdot M_{max}}{\phi_m} = 391.111 \cdot kips \cdot ft$

$$\beta := \begin{cases} 0.85 \text{ if } 2500 \cdot psi \le f_c \le 4000 \cdot psi \\ 0.65 \text{ if } f_c > 8000 \cdot psi \\ \left[0.85 - \left[\frac{\left(\frac{f_c}{psi} - 4000\right)}{1000}\right] \cdot 0.5\right] \text{ otherwise} \end{cases} = 0.85 \quad \text{(ACI-200810.2.7.3)}$$

$b_{eff} := W_t \cdot \cos(30 \cdot deg) + d_p = 101.942 \cdot in$

$A_s := \frac{M_n}{(f_y \cdot d)} = 2.444 \cdot in^2$

$a := \frac{A_s \cdot f_y}{\beta \cdot f_c \cdot b_{eff}} = 0.423 \cdot in$

$A_s := \frac{M_n}{f_y \cdot \left(d - \frac{a}{2}\right)} = 2.461 \cdot in^2$

$\rho := \frac{A_s}{b_{eff} d} = 0.00905 \cdot in$

Required Reinforcement for Temperature and Shrinkage:

$$\rho_{sh} := \begin{cases} .0018 & \text{if } f_y \geq 60000 \cdot psi \\ .0020 & \text{otherwise} \end{cases} = 0.0018$$ (ACI-2008 7.12.2.1)

Check Bottom Bars:

$$As := if\left(\rho \geq \rho_{sh}, A_s, \rho_{sh} \cdot \frac{b_{eff}}{2} \cdot d\right) = 2.9 \cdot in^2$$

$$As_{prov} := A_{bbot} \cdot NB_{bot} = 11.8 \cdot in^2$$

$$Pad\_Reinforcement\_Bot := if\left(As_{prov} > As, "Okay", "No\ Good"\right)$$

Pad_Reinforcement_Bot = "Okay"

Check top Bars:

$$As := if\left(\rho \geq \rho_{sh}, A_s, \rho_{sh} \cdot \frac{b_{eff}}{2} \cdot d\right) = 2.9 \cdot in^2$$

$$As_{prov} := A_{btop} \cdot NB_{top} = 6.6 \cdot in^2$$

$$Pad\_Reinforcement\_Top := if\left(As_{prov} > As, "Okay", "No\ Good"\right)$$

Pad_Reinforcement_Top = "Okay"

Developement Length Pad Reinforcement:

Bar Spacing =

$$B_{sPad} := \frac{W_f - 2 \cdot Cvr_{pad} - NB_{bot} \cdot d_{bbot}}{NB_{bot} - 1} = 10.93 \cdot in$$

Spacing or Cover Dimension =

$$c := if\left(Cvr_{pad} < \frac{B_{sPad}}{2}, Cvr_{pad}, \frac{B_{sPad}}{2}\right) = 3 \cdot in$$

Transverse Reinforcement Index =

$$k_{tr} := 0$$ (ACI-2008 12.2.3)

$$L_{dbt} := \frac{3 \cdot f_y \alpha_{pad} \cdot \beta_{pad} \cdot \gamma_{pad} \cdot \lambda_{pad}}{40 \cdot \sqrt{f_c \cdot psi} \cdot \frac{c + k_{tr}}{d_{bbot}}} \cdot d_{bbot} = 23.7 \cdot in$$

Minimum Development Length =

$$L_{dbmin} := 12 \cdot in$$ (ACI-2008 12.2.1)

$$L_{dbtCheck} := if\left(L_{dbt} \geq L_{dbmin}, "Use\ L.dbt", "Use\ L.dbmin"\right) = "Use\ L.dbt"$$

Available Length in Pad =

$$L_{Pad} := \frac{W_f}{2} - \frac{W_t}{2} - Cvr_{pad} = 39 \cdot in$$

$$Lpad\_Check := if\left(L_{Pad} > L_{dbt}, "Okay", "No\ Good"\right)$$

Lpad_Check = "Okay"

Steel Reinforcement in Pier:

Area of Pier = $A_p := \frac{\pi \cdot d_p^2}{4} = 452.39 \cdot in^2$

$A_{smin} := 0.01 \cdot 0.5 \cdot A_p = 2.26 \cdot in^2$ (ACI-2008 10.8.4 & 10.9.1)

$A_{sprov} := NB_{pier} \cdot A_{bpier} = 6.28 \cdot in^2$

$Steel\_Area\_Check := if(A_{sprov} > A_{smin}, "Okay", "No Good")$

Steel_Area_Check = "Okay"

Bar Spacing In Pier = $B_{sPier} := \frac{d_p \cdot \pi}{NB_{pier}} - d_{bpier} = 8.425 \cdot in$

Diameter of Reinforcement Cage = $Diam_{cage} := d_p - 2 \cdot Cvr_{pier} = 18 \cdot in$

Maximum Moment in Pier = $M_p := S_t \cdot (L_p) \cdot LF = 714 \cdot in \cdot kips$

Pier Check evaluated from outside program and results are listed below;

$(D \;\; N \;\; n \;\; P_u \;\; M_{xu}) := \left(d_p \cdot 12 \;\; NB_{pier} \;\; BS_{pier} \;\; \frac{C_t \cdot 1.333}{kips} \;\; \frac{M_p}{in \cdot kips}\right)$

$(D \;\; N \;\; n \;\; P_u \;\; M_{xu}) = (24 \;\; 8 \;\; 8 \;\; 209.281 \;\; 714)$

$(\phi P_n \;\; \phi M_{xn} \;\; f_{sp} \;\; \rho) := (0 \;\; 0 \;\; 0 \;\; 0)$

$(\phi P_n \;\; \phi M_{xn} \;\; f_{sp} \;\; \rho) := \phi P'_n(D, N, n, P_u, M_{xu})^T$

$(\phi P_n \;\; \phi M_{xn} \;\; f_{sp} \;\; \rho) = (693.991 \;\; 2.368 \times 10^3 \;\; -16.716 \;\; 0.014)$

$Axial\_Load\_Check := if(\phi P_n \geq P_u, "Okay", "No Good")$

Axial_Load_Check = "Okay"

$Bending\_Check := if(\phi M_{xn} \geq M_{xu}, "Okay", "No Good")$

Bending_Check = "Okay"

Development Length Pier Reinforcement:

Available Length in Foundation:

$L_{pier} := L_p - Cvr_{pier} = 48 \cdot in$

$L_{pad} := T_f - Cvr_{pad} = 33 \cdot in$

Tension: (ACI-2008 12.2.3)

Spacing or Cover Dimension =

$c := if\left(Cvr_{pier} < \frac{B_{sPier}}{2}, Cvr_{pier}, \frac{B_{sPier}}{2}\right) = 3 \cdot in$

Transverse Reinforcement =

$k_{tr} := 0$ (ACI-2008 12.2.3)

$L_{dbt} := \frac{3 \cdot f_y \cdot \alpha_{pier} \cdot \beta_{pier} \cdot \gamma_{pier} \cdot \lambda_{pier}}{40 \cdot \sqrt{f_c \cdot psi} \cdot \left(\frac{c + k_{tr}}{d_{bpier}}\right)} \cdot d_{bpier} = 23.72 \cdot in$

Minimum Development Length =

$L_{dh} := \frac{1200 \cdot d_{bpier}}{\sqrt{\frac{f_c}{psi}}} \cdot .7 = 13.282 \cdot in$ (ACI 12.2.1)

Pier reinforcement bars are standard 90 degree hooks and therefore developement in the pad is computed as follows:

$L_{db} := \max\left(L_{dbt}, L_{dbmin}\right) = 23.717 \cdot in$

$L_{tension\_Check} := if\left(L_{pier} + L_{pad} > L_{dbt}, "Okay", "No Good"\right)$

$L_{tension\_Check} = "Okay"$

Compression: (ACI-2008 12.3.2)

$L_{dbc1} := \frac{.02 \cdot d_{bpier} \cdot f_y}{\sqrt{f_c \cdot psi}} = 18.974 \cdot in$

$L_{dbmin} := 0.0003 \cdot \frac{in^2}{lb} \cdot \left(d_{bpier} \cdot f_y\right) = 18 \cdot in$

$L_{dbc} := if\left(L_{dbc1} \geq L_{dbmin}, L_{dbc1}, L_{dbmin}\right) = 18.974 \cdot in$

$L_{compression\_Check} := if\left(L_{pier} + L_{pad} > L_{dbc}, "Okay", "No Good"\right)$

$L_{compression\_Check} = "Okay"$

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT0968	DATE:	10/26/2017	RF DESIGN ENG:	Md Mateen	RF PERF ENG:		RFDS PROGRAM TYPE:	2018 LTE Next Carrier
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:		RF PERF PHONE:		RFDS TECHNOLOGY:	LTE
REVISION:	Preliminary	RF MANAGER:	JOHN BENNEDETTO	RF DESIGN EMAIL:	mm093q@att.com	RF PERF EMAIL:		STATE/STATUS:	Preliminary/Approved
INITIATIVE / PROJECT:	LTE 1900 4T4R A3-A4 & E, LTE 4C AWS J, LTE 5C 850, LTE 6C 700 DE,					RFDS VERSION	1.00	RFDS ID:	2046143
						GSM FREQUENCY:		Created By: mm093q	Updated By: dr701e
						UMTS FREQUENCY:	850	Created: 10/26/2017	Updated: 10/31/2017
						LTE FREQUENCY:	700,850,1900,AWS,WCS		
						IPLAN JOB # 1:	NER-RCTB-16-03077	PRD || SUB GRP #1:	LTE Multi Carrier || 1xBBU XMU
						IPLAN JOB # 2:	NER-RCTB-17-07004	PRD || SUB GRP #2:	LTE Next Carrier || LTE 4C
						IPLAN JOB # 3:	NER-RCTB-17-07032	PRD || SUB GRP #3:	LTE Next Carrier || LTE 5C
						IPLAN JOB # 4:	NER-RCTB-17-07082	PRD || SUB GRP #4:	LTE Next Carrier || LTE 6C
						IPLAN JOB # 5:	NER-RCTB-17-07377	PRD || SUB GRP #5:	Antenna Modifications || 4TXRX Antenna Retrofit
						IPLAN JOB # 6:		PRD || SUB GRP #6:	
						IPLAN JOB # 7:		PRD || SUB GRP #7:	
						IPLAN JOB # 8:		PRD || SUB GRP #8:	

Section 2 - LOCATION INFORMATION

USID:	170551	FA LOCATION CODE:	12684103	LOCATION NAME:	DANBURY BOXWOOD LANE	ORACLE PRJT # 1:	2051A07NGJ	PACE JOB #1:	MRCTB020084
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A0EFW8	PACE JOB #2:	MRCTB026993
ADDRESS:	303 BOXWOOD LANE	CITY:	DANBURY	STATE:	CT	ORACLE PRJT # 3:	2051A0EFWX	PACE JOB #3:	MRCTB026995
ZIP CODE:	06811	COUNTY:	FAIRFIELD	LONG (DEC DEG.):	-73.4866670	ORACLE PRJT # 4:	2051A0EFV9	PACE JOB #4:	MRCTB027001
LATITUDE (D-M-S):	41d 23m40.9992s	LONGITUDE (D-M-S):	-73d -29m-12.0012s	LAT (DEC. DEG.):	41.3947220	ORACLE PRJT # 5:	2051A0EK0D	PACE JOB #5:	MRCTB027255
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:	
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	
						FREQ COORD:		BTA:	MSA / RSA:
						OPS DISTRICT:	CT-South	LAC(GSM):	
						OPS ZONE:	NE_CT_S_FRFD_NW_CS	LAC(UMTS):	05995
						RF DISTRICT:	NPO Triage	BSC(GSM):	
						RF ZONE:	Hotseat	RNC(UMTS):	BRPTCT04CR0R03
						PARENT NAME(GSM):		MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	BRIDGEPORT RNC03		

DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:

START OUT GOING WEST ON COCHITUATE RD/MA-30 TOWARD BURR ST.
THEN 0.10 MILES
MAKE A U-TURN AT BURR ST ONTO COCHITUATE RD/MA-30.
IF YOU REACH WHITTIER ST YOUVE GONE ABOUT 0.2 MILES TOO FAR
THEN 0.05 MILES
MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/BOSTON (PORTIONS TOLL).
THEN 38.83 MILES
MERGE ONTO I-84 W/WILBUR CROSS HWY S VIA EXIT 9 TOWARD US-20/HARTFORD/NEW YORK CITY (PORTIONS TOLL) (CROSSING INTO CONNECTICUT).
THEN 41.73 MILES
KEEP LEFT TO TAKE CT-15 S/WILBUR CROSS HWY S VIA EXIT 57 TOWARD I-91 S/CHARTER OAK BR/NY CITY.
THEN 1.99 MILES
MERGE ONTO I-91 S VIA EXIT 86 TOWARD NEW HAVEN/NY CITY.
THEN 16.54 MILES
MERGE ONTO I-691 W VIA EXIT 18 TOWARD MERIDEN/WATERBURY.
THEN 7.98 MILES
MERGE ONTO I-84 W VIA EXIT 1 ON THE LEFT TOWARD WATERBURY/DANBURY.
THEN 36.90 MILES
TAKE THE US-6 W/US-202 W/LAKE AVE EXIT, EXIT 4.
THEN 0.36 MILES
TURN RIGHT ONTO US-6 W/US-202 W/LAKE AVENUE EXT.
THEN 0.08 MILES
TAKE THE 1ST RIGHT ONTO MILL RIDGE RD.
THEN 0.37 MILES
TAKE THE 3RD RIGHT ONTO HIGH RIDGE RD.
IF YOU REACH MIDFIELD RD YOUVE GONE ABOUT 0.2 MILES TOO FAR.

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:		
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:				

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	No	GROUND ELEVATION (ft):		STRUCTURE TYPE:	SELF SUPPORT	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	No	HEIGHT OVERALL (ft):	0.00	FCC ASR NUMBER:		MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	100.01			MARKET LOCATION 1900 MHz Band:	
LIGHTING TYPE:	NOT REQUIRED					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911						0		
SECTOR B						0		
SECTOR C						0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911						0		
SECTOR B						0		
SECTOR C						0		
SECTOR D								
SECTOR E								
SECTOR F								

OMNI									

Section 6 - RBS GENERAL INFORMATION - existing			
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS
RBS ID:	555234	555235	
CTS COMMON ID:	CTU0968	CTL00968	
CELL ID / BCF:	CTU0968	CTL00968	
BTA/TID:	321W	321L	
4-9 DIGIT SITE ID:	0968	0968	
COW OR TOY?:	No	No	
CELL SITE TYPE:	SECTORIZED	SECTORIZED	
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	
BTS LOCATION ID:	INTERNAL	INTERNAL	
BASE STATION TYPE:	BASE	BASE	
EQUIPMENT NAME:	DANBURY CT	DANBURY CT	
DISASTER PRIORITY:	0	0	

Section 6 - RBS GENERAL INFORMATION - final			
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS
RBS ID:	555234	555235	RFDS_30824805
CTS COMMON ID:	CTU0968	CTL00968	CTL01968R
CELL ID / BCF:	CTU0968	CTL00968	CTL01968R
BTA/TID:	321W	321L	321L
4-9 DIGIT SITE ID:	0968	0968	1968
COW OR TOY?:	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL
BASE STATION TYPE:	BASE	BASE	OVERLAY
EQUIPMENT NAME:	DANBURY CT	DANBURY CT	DANBURY CT
DISASTER PRIORITY:	0	0	0

Section 7 - RBS SPECIFIC INFORMATION - existing																						
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
RAC:																						
EQUIPMENT VENDOR:	ERICSSON	ERICSSON																				
EQUIPMENT TYPE:	6601 MAIN UNIT UMTS	6601 INDOOR MU																				
BASEBAND CONFIGURATION:																						
LOCATION:																						
CABINET LOCATION:																						
MARKET STATE CODE:	CT	CT																				
AGPS:	Yes	Yes																				
NODE B NUMBER:	968	968																				

Section 7 - RBS SPECIFIC INFORMATION - final																						
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
RAC:																						
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON																			
EQUIPMENT TYPE:	6601 MAIN UNIT UMTS	6601 INDOOR MU	6601 INDOOR MU																			
BASEBAND CONFIGURATION:		2x6601 / 2x5216 / 2xXMU03 + IDLe	2x6601 / 2x5216 / 2xXMU03 + IDLe																			
LOCATION:																						
CABINET LOCATION:																						
MARKET STATE CODE:	CT	CT	CT																			
AGPS:	Yes	Yes	Yes																			
NODE B NUMBER:	968	968	1968																			

Section 8 - RBS/SECTOR ASSOCIATION - existing																						
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
CTS Common ID	CTU0968	CTL00968																				
Soft Sector IDs	CTV09681	CTL00968_3A_1																				
	CTV09682	CTL00968_3B_1																				
	CTV09683	CTL00968_3C_1																				
		CTL00968_7A_1																				
		CTL00968_7B_1																				
		CTL00968_7C_1																				
		CTL00968_9A_1																				
		CTL00968_9B_1																				
		CTL00968_9C_1																				

Section 8 - RBS/SECTOR ASSOCIATION - final																						
	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
CTS Common ID	CTU0968	CTL00968	CTL01968R																			
Soft Sector IDs	CTV09681	CTL00968_3A_1	CTL01968_2A_2																			
	CTV09682	CTL00968_3B_1	CTL01968_2B_2																			
	CTV09683	CTL00968_3C_1	CTL00968_2C_2																			
		CTL00968_7A_1	CTL01968_7A_2_E																			
		CTL00968_7B_1	CTL01968_7B_2_E																			
		CTL00968_7C_1	CTL01968_7C_2_E																			
		CTL00968_9A_1	CTL01968_8A_1																			
		CTL00968_9A_2	CTL01968_8B_1																			
		CTL00968_9B_1	CTL01968_8C_1																			
		CTL00968_9B_2																				
		CTL00968_9C_1																				
		CTL00968_9C_2																				

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS
USEID (excluding Hard Sector)	170551.850.3G.1							
SECTOR A SOFT SECTOR ID	CTV09681	CTL00968_7A_1		CTL00968_9A_1	CTL00968_3A_1			
SECTOR B	CTV09682	CTL00968_7B_1		CTL00968_9B_1	CTL00968_3B_1			
SECTOR C	CTV09683	CTL00968_7C_1		CTL00968_9C_1	CTL00968_3C_1			
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS
USEID (excluding Hard Sector)	170551.850.3G.1							
SECTOR A SOFT SECTOR ID	CTV09681	CTL00968_7A_1	CTL01968_8A_1	CTL00968_9A_1	CTL00968_3A_1	CTL01968_7A_2_E	CTL00968_9A_2	CTL01968_2A_2
SECTOR B	CTV09682	CTL00968_7B_1	CTL01968_8B_1	CTL00968_9B_1	CTL00968_3B_1	CTL01968_7B_2_E	CTL00968_9B_2	CTL01968_2B_2
SECTOR C	CTV09683	CTL00968_7C_1	CTL01968_8C_1	CTL00968_9C_1	CTL00968_3C_1	CTL01968_7C_2_E	CTL00968_9C_2	CTL00968_2C_2
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 9 - Cell Number - existing																									
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS																	
USEID (excluding Hard Sector)	170551.850.3G.1																								
SECTOR A CELL NUMBER		15		8	149																				
SECTOR B		16		9	150																				
SECTOR C		17		10	151																				
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final																									
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS																	
USEID (excluding Hard Sector)	170551.850.3G.1																								
SECTOR A CELL NUMBER		15	1	8	149	185	178	192																	
SECTOR B		16	2	9	150	186	179	193																	
SECTOR C		17	3	10	151	187	180	194																	
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing																								
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS																
SECTOR A CID/SAC	09681																							
SECTOR B	09682																							
SECTOR C	09683																							
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 10 - CID/SAC - final																								
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS																
SECTOR A CID/SAC	09681																							
SECTOR B	09682																							
SECTOR C	09683																							
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 11 - CURRENT RADIO COUNTS existing																									
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS																					
SECTOR A RADIO COUNTS	1	1	1	1																					
SECTOR B	1	1	1	1																					
SECTOR C	1	1	1	1																					
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 12 - CURRENT T1 COUNTS existing																						
	UMTS 1ST Cabinet	LTE 1ST Cabinet																				
# T1s	1	1																				
LINK PROFILE																						
RF COMBINING																						
FIBER or ETHERNET?	ETHERNET	ETHERNET																				
Tx Board Model																						
Tx Board QTY																						
RAX/ECU Board Model																						
RAX/ECU Board QTY																						
BBU Board Model																						
BBU Board QTY																						
RRU - location	Top	Top																				
FIBER JUMPER	FIBER	FIBER																				
DC CABLE	DC	DC																				
DC/Fiber Dem. Box	RAYCAP	RAYCAP																				
Bundled Fiber Cable	YES	YES																				
Bundled DC Cable	YES	YES																				

Section 13 - NEW/PROPOSED RADIO COUNTS																									
	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS																					
SECTOR A RADIO COUNTS	1	1	1	1																					
SECTOR B	1	1	1	1																					
SECTOR C	1	1	1	1																					
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 14 - NEW/PROPOSED T1 COUNTS																						
	UMTS 1ST Cabinet	LTE 1ST Cabinet																				
# T1s	1	1																				
LINK PROFILE																						
RF COMBINING																						
FIBER or ETHERNET?	ETHERNET	ETHERNET																				
Tx Board Model																						
Tx Board QTY																						
RAX/ECU Board Model																						
RAX/ECU Board QTY																						
BBU Board Model																						
BBU Board QTY																						
RRU - location	Top	Top																				
FIBER JUMPER	FIBER	FIBER																				
DC CABLE	DC	DC																				
DC/Fiber Dem. Box	RAYCAP	RAYCAP																				
Bundled Fiber Cable	YES	YES																				
Bundled DC Cable	YES	YES																				

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4											
ANTENNA VENDOR	CCI Products		CCI Products											
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7											
ANTENNA WEIGHT	57		57											
AZIMUTH	60		60											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98											
ANTENNA TIP HEIGHT	100		100											
MECHANICAL DOWNTILT	0		0											
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In										
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID										
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein 860 10006		RRH Controlled										
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)	1	RRUS-11												
RRH - 1900 band (QTY/MODEL)			1	RRUS-12+RRUS-A2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	4 DC and 2 Fiber lines													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	**PORT 1**	170551.A.850.3G.1		CTV09681	CTV09681	TxRx/TxRx	UMTS 850	H4_849MHz_04DT	13.3		4	TOP	FIBER	0	0			No					
	PORT 3	170551.A.WCS.4G.1		CTL00968_3A_1	CTL00968_3A_1	TxRx/TxRx	LTE WCS	H4_2350MHz_04DT	17.1		4	TOP	FIBER	0	0			No					
ANTENNA POSITION 2	**PORT 1**	170551.A.700.4G.1		CTL00968_7A_1	CTL00968_7A_1	TxRx/TxRx	LTE 700	H4_719MHz_04DT	12.7		4	TOP	FIBER	0	0			No					
	PORT 3	170551.A.1900.4G.1		CTL00968_9A_1	CTL00968_9A_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04DT	16		4	TOP	FIBER	0	0			No					

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4											
ANTENNA VENDOR	CCI Products		CCI Products											
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7											
ANTENNA WEIGHT	57		57											
AZIMUTH	170		170											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98											
ANTENNA TIP HEIGHT	100		100											
MECHANICAL DOWNTILT	0		0											
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In										
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID										
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		Kathrein 860 10006		RRH Controlled										
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)	1	RRUS-11												
RRH - 1900 band (QTY/MODEL)			1	RRUS-12+RRUS-A2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	4 DC and 2 Fiber lines													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	**PORT 1**	170551.B.850.3G.1		CTV09682	CTV09682	TxRx/TxRx	UMTS 850	H4_849MHz_04 DT	13.3		4	TOP	FIBER	0	0			No					
	PORT 3	170551.B.WCS.4G.1		CTL00968_3B_1	CTL00968_3B_1	TxRx/TxRx	LTE WCS	H4_2350MHz_04 DT	17.1		4	TOP	FIBER	0	0			No					
ANTENNA POSITION 2	**PORT 1**	170551.B.700.4G.1		CTL00968_7B_1	CTL00968_7B_1	TxRx/TxRx	LTE 700	H4_719MHz_04 DT	12.7		4	TOP	FIBER	0	0			No					
	PORT 3	170551.B.1900.4G.1		CTL00968_9B_1	CTL00968_9B_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04 DT	16		4	TOP	FIBER	0	0			No					

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4											
ANTENNA VENDOR	CCI Products		CCI Products											
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7											
ANTENNA WEIGHT	57		57											
AZIMUTH	300		300											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98											
ANTENNA TIP HEIGHT	100		100											
MECHANICAL DOWNTILT	0		0											
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In										
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID										
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		Kathrein 860 10006		RRH Controlled										
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)	1	RRUS-11												
RRH - 1900 band (QTY/MODEL)			1	RRUS-12+RRUS-A2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	4 DC and 2 Fiber lines													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	**PORT 1**	170551.C.850.3G.1		CTV09683	CTV09683	TxRx/TxRx	UMTS 850	H4_849MHz_02 DT	13.3		2	TOP	FIBER	0	0			No					
	PORT 3	170551.C.WCS.4G.1		CTL00968_3C_1	CTL00968_3C_1	TxRx/TxRx	LTE WCS	H4_2350MHz_02 DT	17.1		2	TOP	FIBER	0	0			No					
ANTENNA POSITION 2	**PORT 1**	170551.C.700.4G.1		CTL00968_7C_1	CTL00968_7C_1	TxRx/TxRx	LTE 700	H4_719MHz_02 DT	12.7		2	TOP	FIBER	0	0			No					
	PORT 3	170551.C.1900.4G.1		CTL00968_9C_1	CTL00968_9C_1	TxRx/TxRx	LTE 1900	H4_1930MHz_02 DT	16		2	TOP	FIBER	0	0			No					

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL				SBNHH-1D65A			
ANTENNA VENDOR				Andrew			
ANTENNA SIZE (H x W x D)				55X11.9X7.1			
ANTENNA WEIGHT				33.5			
AZIMUTH				60			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				98			
ANTENNA TIP HEIGHT				100			
MECHANICAL DOWNTILT		0		0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built in			
SURGE ARRESTOR (QTY/MODEL)				1 Fiber DC Squid			
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH Controlled		RRH Controlled			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 RRUS-E2			
RRH - 850 band (QTY/MODEL)		1 RRUS-12					
RRH - 1900 band (QTY/MODEL)		1 RRUS-32 B2					
RRH - AWS band (QTY/MODEL)				1 RRUS-32 B66			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.						
Local Market Note 2	Note Antenna spacing						
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 2	G.tmp1, 170551.B.850.4	170551.A.850.4 G.1	CTL00968_8A_1	CTL00968_8A_1	TxRx/TxRx	LTE 850	H4_719MHz_04 DT	12.7	60	4	TOP	FIBER	0	0			No		1475.7065		5	
	PORT 3	G.tmp4, 170551.B.1900.4	170551.A.1900.4 G.1	CTL00968_9A_1	CTL00968_9A_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04 DT	16	60	4	TOP	FIBER	0	0			No		4842.058		6	
ANTENNA POSITION 4	PORT 1	170551.A.700.4 G.tmp4	170551.A.700.4 G.2	CTL00968_7A_2 _E	CTL00968_7A_2 _E	TxRx/TxRx	LTE 700	1D65A_722MHz _06DT	15.8	60	6	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.A.AWS.4 G.tmp4	170551.A.2100.4 G.1	CTL00968_2A_1	CTL00968_2A_1	TxRx/TxRx	LTE AWS	1D65A_2130MH z_04DT	16.7	60	4	TOP	FIBER	0	0			No		4842.06			

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL				SBNHH-1D65A			
ANTENNA VENDOR				Andrew			
ANTENNA SIZE (H x W x D)				55X11.9X7.1			
ANTENNA WEIGHT				33.5			
AZIMUTH				170			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				98			
ANTENNA TIP HEIGHT				100			
MECHANICAL DOWNTILT		0		0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built in			
SURGE ARRESTOR (QTY/MODEL)				1 Fiber DC Squid			
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH Controlled		RRH Controlled			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 RRUS-E2			
RRH - 850 band (QTY/MODEL)		1 RRUS-12					
RRH - 1900 band (QTY/MODEL)		1 RRUS-32 B2					
RRH - AWS band (QTY/MODEL)				1 RRUS-32 B66			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.						
Local Market Note 2	Note Antenna spacing						
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 2	170551.B.850.4G.tmp1	170551.B.850.4G.1	CTL00968_8B_1	CTL00968_8B_1	TxRx/TxRx	LTE 850	H4_719MHz_04DT	12.7	170	4	TOP	FBER	0	0			No		1475.71			
	PORT 3	170551.B.1900.4G.tmp4	170551.B.1900.4G.1	CTL00968_9B_1	CTL00968_9B_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04DT	16	170	4	TOP	FBER	0	0			No		4842.06			
ANTENNA POSITION 4	PORT 1	170551.B.700.4G.tmp4	170551.B.700.4G.2	CTL00968_7B_2_E	CTL00968_7B_2_E	TxRx/TxRx	LTE 700	1D65A_722MHz_06DT	15.8	170	6	TOP	FBER	0	0			No		1475.71			
	PORT 3	170551.B.AWS.4G.tmp4	170551.B.2100.4G.1	CTL00968_2B_1	CTL00968_2B_1	TxRx/TxRx	LTE AWS	1D65A_2130MHz_04DT	16.7	170	4	TOP	FBER	0	0			No		4842.06			

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL							SBNHH-1D65A							
ANTENNA VENDOR							Andrew							
ANTENNA SIZE (H x W x D)							55X11.9X7.1							
ANTENNA WEIGHT							33.5							
AZIMUTH							300							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)							98							
ANTENNA TIP HEIGHT							100							
MECHANICAL DOWNTILT			0				0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)								Built in						
SURGE ARRESTOR (QTY/MODEL)							1	Fiber DC Squid						
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)				RRH Controlled				RRH Controlled						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)							1	RRUS-E2						
RRH - 850 band (QTY/MODEL)			1	RRUS-12										
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)							1	RRUS-32 B66						
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.													
Local Market Note 2	Note Antenna spacing													
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 2	170551.C.850.4G.tmp1	170551.C.850.4G.1	CTL00968_8C_1	CTL00968_8C_1	TxRx/TxRx	LTE 850	H4_719MHz_04DT	12.7	300	4	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.C.1900.4G.tmp4	170551.C.1900.4G.1	CTL00968_9C_1	CTL00968_9C_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04DT	16	300	4	TOP	FIBER	0	0			No		4842.06			
ANTENNA POSITION 4	PORT 1	170551.C.700.4G.tmp4	170551.C.700.4G.2	CTL00968_7C_2_E	CTL00968_7C_2_E	TxRx/TxRx	LTE 700	1D65A_722MHz_06DT	15.8	300	6	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.C.AWS.4G.tmp4	170551.C.2100.4G.1	CTL00968_2C_1	CTL00968_2C_1	TxRx/TxRx	LTE AWS	1D65A_2130MHz_04DT	16.7	300	4	TOP	FIBER	0	0			No		4842.06			

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4				SBNHH-1D65A							
ANTENNA VENDOR	CCI Products		CCI Products				Andrew							
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7				55X11.9X7.1							
ANTENNA WEIGHT	57		57				33.5							
AZIMUTH	60		60				60							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98				98							
ANTENNA TIP HEIGHT	100		100				100							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In				Built in						
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID			1	Fiber DC Squid						
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein 860 10006		RRH Controlled				RRH Controlled						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11			1	RRUS-E2						
RRH - 850 band (QTY/MODEL)	1	RRUS-11	1	RRUS-12										
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)							1	RRUS-32 B66						
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.													
Local Market Note 2	Note Antenna spacing													
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	**PORT 1**	170551.A.850.3G.1	170551.A.850.3G.1	CTV09681	CTV09681	TxRx/TxRx	UMTS 850	H4_849MHz_04DT	13.3	60	4	TOP	FIBER	0	0			No		309			
	PORT 3	170551.A.WCS.4G.1	170551.A.2300.4G.1	CTL00968_3A_1	CTL00968_3A_1	TxRx/TxRx	LTE WCS	H4_2350MHz_04DT	17.1	60	4	TOP	FIBER	0	0			No		4842.058			
ANTENNA POSITION 2	**PORT 1**	170551.A.700.4G.1	170551.A.700.4G.1	CTL00968_7A_1	CTL00968_7A_1	TxRx/TxRx	LTE 700	H4_719MHz_04DT	12.7	60	4	TOP	FIBER	0	0			No		1475.7065			
	PORT 2	170551.A.850.4G.tmp1	170551.A.850.4G.1	CTL01968_8A_1	CTL01968_8A_1	TxRx/TxRx	LTE 850	H4_719MHz_04DT	12.7	60	4	TOP	FIBER	0	0			No		1475.7065		5	

	PORT 3	G.1, 170551.A.1900.4	170551.A.1900.4 G.1	CTL00968_9A_1	CTL00968_9A_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04 DT	16	60	4	TOP	FIBER	0	0			No		4842.058		6	
ANTENNA POSITION 4	PORT 1	170551.A.700.4 G.tmp4	170551.A.700.4 G.2	CTL01968_7A_2 _E	CTL01968_7A_2 _E	TxRx/TxRx	LTE 700	1D65A_722MHz _06DT	15.8	60	6	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.A.AWS.4 G.tmp4	170551.A.2100.4 G.1	CTL01968_2A_1	CTL01968_2A_1	TxRx/TxRx	LTE AWS	1D65A_2130MH z_04DT	16.7	60	4	TOP	FIBER	0	0			No		4842.06			

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4				SBNHH-1D65A							
ANTENNA VENDOR	CCI Products		CCI Products				Andrew							
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7				55X11.9X7.1							
ANTENNA WEIGHT	57		57				33.5							
AZIMUTH	170		170				170							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98				98							
ANTENNA TIP HEIGHT	100		100				100							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In				Built in						
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID			1	Fiber DC Squid						
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		Kathrein 860 10006		RRH Controlled				RRH Controlled						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11			1	RRUS-E2						
RRH - 850 band (QTY/MODEL)	1	RRUS-11	1	RRUS-12										
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)							1	RRUS-32 B66						
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.													
Local Market Note 2	Note Antenna spacing													
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	170551.B.850.3G.1	170551.B.850.3G.1	CTV09682	CTV09682	TxRx/TxRx	UMTS 850	H4_849MHz_04DT	13.3	170	4	TOP	FIBER	0	0			No		300			
	PORT 3	170551.B.WCS.4G.1	170551.B.2300.4G.1	CTL00968_3B_1	CTL00968_3B_1	TxRx/TxRx	LTE WCS	H4_2350MHz_04DT	17.1	170	4	TOP	FIBER	0	0			No		1475.71			
ANTENNA POSITION 2	PORT 1	170551.B.700.4G.1	170551.B.700.4G.1	CTL00968_7B_1	CTL00968_7B_1	TxRx/TxRx	LTE 700	H4_719MHz_04DT	12.7	170	4	TOP	FIBER	0	0			No		1475.71			
	PORT 2	170551.B.850.4G.tmp1	170551.B.850.4G.1	CTL01968_8B_1	CTL01968_8B_1	TxRx/TxRx	LTE 850	H4_719MHz_04DT	12.7	170	4	TOP	FIBER	0	0			No		1475.71			
	PORT 3	G.1, 170551.B.1900.4G.1	170551.B.1900.4G.1	CTL00968_9B_1	CTL00968_9B_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04DT	16	170	4	TOP	FIBER	0	0			No		4842.06			

ANTENNA POSITION 4	PORT 1	170551.B.700.4G.tmp4	170551.B.700.4G.2	CTL01968_7B_2_E	CTL01968_7B_2_E	TxRx/TxRx	LTE 700	1D65A_722MHz_06DT	15.8	170	6	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.B.AWS.4G.tmp4	170551.B.2100.4G.1	CTL01968_2B_1	CTL01968_2B_1	TxRx/TxRx	LTE AWS	1D65A_2130MHz_04DT	16.7	170	4	TOP	FIBER	0	0			No		4842.06			

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	OPA-65R-LCUU-H4		OPA-65R-LCUU-H4				SBNHH-1D65A							
ANTENNA VENDOR	CCI Products		CCI Products				Andrew							
ANTENNA SIZE (H x W x D)	48X15X7		48X15X7				55X11.9X7.1							
ANTENNA WEIGHT	57		57				33.5							
AZIMUTH	300		300				300							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	98		98				98							
ANTENNA TIP HEIGHT	100		100				100							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In		Built-In				Built in						
SURGE ARRESTOR (QTY/MODEL)	1	FIBER DC SQUID	1	FIBER DC SQUID			1	Fiber DC Squid						
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		Kathrein 860 10006		RRH Controlled				RRH Controlled						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11			1	RRUS-E2						
RRH - 850 band (QTY/MODEL)	1	RRUS-11	1	RRUS-12										
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)							1	RRUS-32 B66						
RRH - WCS band (QTY/MODEL)	1	RRUS-32												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add 4' Hex port position 4. Add 700DE RRUS-E2 & AWS RRUS-32 B66 both up top on new hex port pos. 4. Add 850 RRUS-12 up top on Octo port pos. 2. Replace existing PCS RRUS-12/A2 with RRUS-32 B2 up top also existing Octo port on Position 2. Add new fiber DC squid. Replace 2X DUS with 2X 5216 add 2nd XMU & add IDLe.													
Local Market Note 2	Note Antenna spacing													
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	**PORT 1**	170551.C.850.3G.1	170551.C.850.3G.1	CTV09683	CTV09683	TxRx/TxRx	UMTS 850	H4_849MHz_02DT	13.3	300	2	TOP	FIBER	0	0			No		300			
	PORT 3	170551.C.WCS.4G.1	170551.C.2100.4G.1	CTL00968_3C_1	CTL00968_3C_1	TxRx/TxRx	LTE WCS	H4_2350MHz_02DT	17.1	300	2	TOP	FIBER	0	0			No		4842.06			
ANTENNA POSITION 2	**PORT 1**	170551.C.700.4G.1	170551.C.700.4G.1	CTL00968_7C_1	CTL00968_7C_1	TxRx/TxRx	LTE 700	H4_719MHz_02DT	12.7	300	2	TOP	FIBER	0	0			No		1475.71			
	PORT 2	170551.C.850.4G.tmp1	170551.C.850.4G.1	CTL01968_8C_1	CTL01968_8C_1	TxRx/TxRx	LTE 850	H4_719MHz_04DT	12.7	300	4	TOP	FIBER	0	0			No		1475.71			
	PORT 3	G.1, 170551.C.1900.4G.1	170551.C.1900.4G.1	CTL00968_9C_1	CTL00968_9C_1	TxRx/TxRx	LTE 1900	H4_1930MHz_04DT	16	300	4	TOP	FIBER	0	0			No		4842.06			

ANTENNA POSITION 4	**PORT 1**	170551.C.700.4G.tmp4	170551.C.700.4G.2	CTL01968_7C_2_E	CTL01968_7C_2_E	TxRx/TxRx	LTE 700	1D65A_722MHz_06DT	15.8	300	6	TOP	FIBER	0	0			No		1475.71			
	PORT 3	170551.C.AWS.4G.tmp4	170551.C.2100.4G.1	CTL01968_2C_1	CTL01968_2C_1	TxRx/TxRx	LTE AWS	1D65A_2130MHz_04DT	16.7	300	4	TOP	FIBER	0	0			No		4842.06			

Product Specifications

COMMSCOPE®

POWERED BY ANDREW

SBNHH-1D65A

Andrew® Tri-band Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	13.6	13.7	16.5	16.9	17.1	17.6
Beamwidth, Horizontal, degrees	66	61	70	65	62	61
Beamwidth, Vertical, degrees	17.6	15.9	7.1	6.6	6.2	5.5
Beam Tilt, degrees	0–18	0–18	0–10	0–10	0–10	0–10
USLS, dB	16	13	13	13	12	12
Front-to-Back Ratio at 180°, dB	25	27	28	28	27	29
CPR at Boresight, dB	20	16	20	23	17	20
CPR at Sector, dB	10	5	11	6	1	4
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	13.1	13.1	16.1	16.5	16.7	17.2
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.5	±0.5	±0.3	±0.5	±0.4
	0 ° | 13.4	0 ° | 13.4	0 ° | 16.0	0 ° | 16.3	0 ° | 16.5	0 ° | 17.0
Gain by Beam Tilt, average, dBi	9 ° | 13.1	9 ° | 13.1	5 ° | 16.2	5 ° | 16.5	5 ° | 16.8	5 ° | 17.3
	18 ° | 12.7	18 ° | 12.7	10 ° | 16.1	10 ° | 16.5	10 ° | 16.6	10 ° | 16.9
Beamwidth, Horizontal Tolerance, degrees	±3.1	±5.4	±2.8	±4	±6.6	±4.6
Beamwidth, Vertical Tolerance, degrees	±1.8	±1.4	±0.3	±0.4	±0.5	±0.3
USLS, dB	15	14	15	15	15	14
Front-to-Back Total Power at 180° ± 30°, dB	22	21	26	26	24	25
CPR at Boresight, dB	22	16	22	25	21	22
CPR at Sector, dB	10	6	12	8	5	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® multiband with internal RET
Band	Multiband
Brand	DualPol® | Teletilt®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz

Product Specifications

SBNHH-1D65A

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, maximum	445.0 N @ 150 km/h 100.0 lbf @ 150 km/h
Wind Speed, maximum	241.4 km/h | 150.0 mph

Dimensions

Depth	180.0 mm | 7.1 in
Length	1409.0 mm | 55.5 in
Width	301.0 mm | 11.9 in
Net Weight	15.2 kg | 33.5 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

June 13, 2018

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT0968 (LTE 4C/5C/6C)
	FA Number:	12684103
	PACE Number:	MRCTB020084
	PTN Number:	2051A07NGL
	Site Name:	Danbury Boxwood Lane
	Site Address:	303 Boxwood Lane Danbury, CT 06811

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

- (6) OPA-65R-LCUU-H4 Antennas (48.0"x14.4"x7.3" – Wt. = 57 lbs. /each)
- (6) 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)
- (2) Squid Surge Arrestors (24.0"x9.7"ø – Wt. = 33 lbs. /each) (Tower Mounted)
- **(3) SBNHH-1D65A Antennas (55"x11.9"x7.1"– Wt. = 34 lbs. /each)**
- **(3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)**
- **(3) RRUS-32 B66 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)**
- **(3) RRUS-E2 RRH's (20"x20.4"x9.5" – Wt. = 58 lbs. /each)**
- **(3) RRUS-12 RRH's (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7"ø – Wt. = 33 lbs. /each) (Tower Mounted)**

  **Proposed Loading Shown in Bold.*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on June 11, 2018.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2012 with 2005 Connecticut Supplement with 2016 Amendments, and AT&T Mount Technical Directive – R7.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, the max basic wind speed for this site is equal to 110 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 120 mph converted to a nominal wind speed of 93 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 2; tower is located at the top or crest of an escarpment.

- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- 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 analysis, we have determined that the existing antenna mounts **ARE NOT CAPABLE** of supporting the proposed antenna installation. HDG recommends the following modifications:

- **Install new 2" std. (2.38" O.D.) pipe brace secured to existing mount and tower (typ. of 1 per sector, total of 3).**
- **Reinforce existing mount face with new 2-1/2"x2-1/2"x3/16" steel angles (typ. of 2 per sector, total of 6).**
- **Reinforce existing steel angles with new 2"x2"x3/16" steel angles (typ. of 2 per sector, total of 6).**
- **Install new channel connection between existing mount and tower (typ. of 1 per sector, total of 3).**
- **Relocate existing RRH in position 1 to top of existing pipe mount (typ. of 1 per sector, total of 3).**

	Member	Controlling Load Case	Stress Ratio	Pass/Fail
Existing 4C/5C/6C Mount Rating	31	LC81	219%	**FAIL**
Proposed 4C/5C/6C Mount Rating	9	LC42	96%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Structural Dept. Head

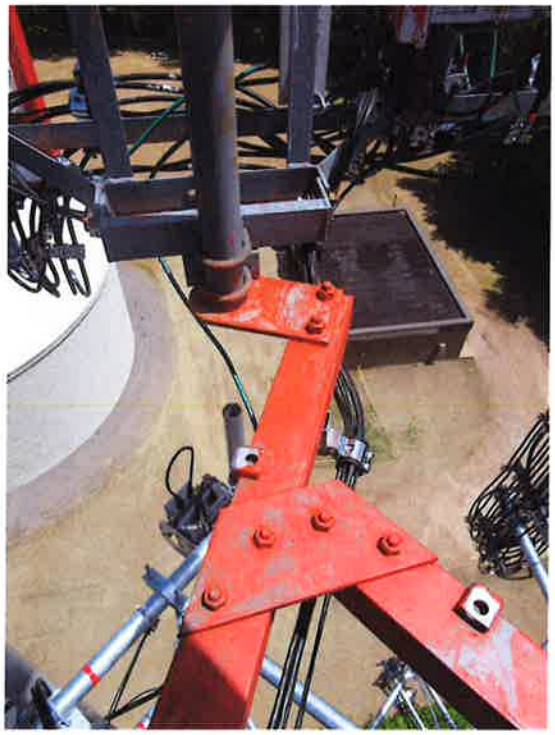
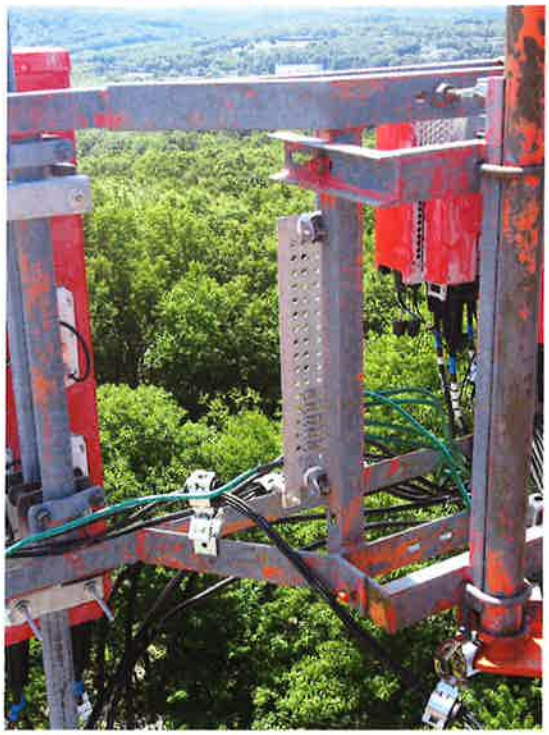
STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:





p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Dr., 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: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	99 (ft)
	z_g=	1200 (ft)
K_z= 0.985	α=	7.0

$Kzmin \leq Kz \leq 2.01$

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

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

K_{zt}= 1.340665361

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

Category= **2**

K_h=	2.4513678	
K_e=	0.9	(from Table 2-4)
K_t=	0.43	(from Table 2-5)
f=	1.25	(from Table 2-5)
z=	99	
H=	138	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.34	
K_{iz} =	1.12	(from Sec. 2.6.8)

2.6.8 Design Ice Thickness

Max Ice Thickness = t_i = 0.75 in

$t_{iz} = 2.0*t_i*I*K_{iz}*(Kzt)^{0.35}$ $\quad t_{iz}$ = 1.85 in

Date: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN 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=	100	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} = 120 mph

Nomial Design Wind Speed, $V_{asd} = V_{ult}\sqrt{0.6}$ V_{asd} = 93 mph

V_{asd} per the AT&T Mount Technical Directive and Connecticut State Building Code, Latest Edition.
Per TIA-222-G, V_{min} = 90 mph V_{max} = 110 mph

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

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

		K_z=	0.985
		K_{zt}=	1.3
q_z=	**24.82**	K_d=	0.85
$q_{z\,(ice)}$=	**7.18**	V_{asd}=	93 mph
$q_{z\,(30)}$=	**2.59**	$V_{max\,(ice)}$=	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: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN 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 = **1.85** 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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	3.33	1.24	**147**	**58**	**15**
SBNHH-1D65A	55.0	11.9	7.1	4.55	4.62	1.29	**146**	**59**	**15**
RRUS-11	19.7	17.0	7.2	2.33	1.16	1.20	**69**	**29**	**7**
RRUS-11 (Shielded)	19.7	0.0	7.2	0.00	0.00	1.20	**0**	**5**	**0**
RRUS-12	20.4	18.5	7.5	2.62	1.10	1.20	**78**	**32**	**8**
RRUS-12 (Shielded)	20.4	4.1	7.5	0.58	4.98	1.31	**19**	**12**	**2**
RRUS-32	27.2	12.1	7.0	2.29	2.25	1.20	**68**	**29**	**7**
RRUS-32 (Shielded)	27.2	0.0	7.0	0.00	0.00	1.20	**0**	**7**	**0**
RRUS-E2	20.0	20.4	9.5	2.83	0.98	1.20	**84**	**34**	**9**
2" Pipe	2.4	12.0		0.20	0.20	0.70	**3**	**3**	**0**
2.5" Pipe	2.9	12.0		0.24	0.24	0.70	**4**	**4**	**0**
L2x2	2.0	12.0	2.0	0.17	0.17	1.20	**5**	**5**	**1**
L3x2	3.0	12.0	2.0	0.25	0.25	1.20	**7**	**6**	**1**
L2.5x2.5	2.5	12.0	2.5	0.21	0.21	1.20	**6**	**6**	**1**
C3x1.5	3.0	12.0	1.5	0.25	0.25	1.20	**7**	**6**	**1**

Date: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.85	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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	147	83	131
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	146	96	134
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	69	30	59
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	35	30	33
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	78	32	67
RRUS-12 (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	39	32	37
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	68	41	61
RRUS-32 (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	37	41	38
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	84	39	73

WIND LOADS WITH ICE:

OPA-65R-LCUU-H4	51.7	18.1	11.0	6.50	3.95	2.86	4.70	1.22	1.30	57	37	52
SBNHH-1D65A	58.7	15.6	10.8	6.36	4.41	3.76	5.43	1.26	1.33	57	42	54
RRUS-11	23.4	20.7	10.9	3.37	1.77	1.13	2.15	1.20	1.20	29	15	26
RRUS-11 (Shielded)	23.4	10.4	10.9	1.68	1.77	2.26	2.15	1.20	1.20	15	15	15
RRUS-12	24.1	22.2	11.2	3.72	1.88	1.09	2.15	1.20	1.20	32	16	28
RRUS-12 (Shielded)	24.1	11.1	11.2	1.86	1.88	2.17	2.15	1.20	1.20	16	16	16
RRUS-32	30.9	15.8	10.7	3.39	2.30	1.96	2.89	1.20	1.22	29	20	27
RRUS-32 (Shielded)	30.9	7.9	10.7	1.70	2.30	3.91	2.89	1.26	1.22	15	20	17
RRUS-E2	23.7	24.1	13.2	3.97	2.17	0.98	1.79	1.20	1.20	34	19	30

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	15	9	14
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	15	10	14
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	3	3
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	8	3	7
RRUS-12 (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	4	3	4
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	6
RRUS-32 (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	9	4	8

Date: 6/13/2018

Project Name: Danbury Boxwood Lane

Project Number: CT0968

Designed By: LN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)

Ice Thickness =	1.85	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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	147	83	99
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	146	96	108
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	69	30	40
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	52	30	35
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	78	32	43
RRUS-12 (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	59	32	39
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	68	41	48
RRUS-32 (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	52	41	44
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	84	39	51

WIND LOADS WITH ICE:

OPA-65R-LCUU-H4	51.7	18.1	11.0	6.50	3.95	2.86	4.70	1.22	1.30	57	37	42
SBNHH-1D65A	58.7	15.6	10.8	6.36	4.41	3.76	5.43	1.26	1.33	57	42	46
RRUS-11	23.4	20.7	10.9	3.37	1.77	1.13	2.15	1.20	1.20	29	15	19
RRUS-11 (Shielded)	23.4	15.5	10.9	2.53	1.77	1.51	2.15	1.20	1.20	22	15	17
RRUS-12	24.1	22.2	11.2	3.72	1.88	1.09	2.15	1.20	1.20	32	16	20
RRUS-12 (Shielded)	24.1	16.7	11.2	2.79	1.88	1.45	2.15	1.20	1.20	24	16	18
RRUS-32	30.9	15.8	10.7	3.39	2.30	1.96	2.89	1.20	1.22	29	20	22
RRUS-32 (Shielded)	30.9	11.9	10.7	2.55	2.30	2.61	2.89	1.20	1.22	22	20	21
RRUS-E2	23.7	24.1	13.2	3.97	2.17	0.98	1.79	1.20	1.20	34	19	23

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	15	9	10
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	15	10	11
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	5	3	4
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	8	3	5
RRUS-12 (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	6	3	4
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	5
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	9	4	5

Date: 6/13/2018

Project Name: Danbury Boxwood Lane

Project Number: CT0968

Designed By: LN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)

Ice Thickness =	1.85	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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	147	83	83
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	146	96	96
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	69	30	30
RRUS-11 (Shielded)	19.7	0.0	7.2	0.00	0.99	0.00	2.74	1.20	1.21	0	30	30
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	78	32	32
RRUS-12 (Shielded)	20.4	4.1	7.5	0.58	1.06	4.98	2.72	1.31	1.21	19	32	32
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	68	41	41
RRUS-32 (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	41	41
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	84	39	39

WIND LOADS WITH ICE:

OPA-65R-LCUU-H4	51.7	18.1	11.0	6.50	3.95	2.86	4.70	1.22	1.30	57	37	37
SBNHH-1D65A	58.7	15.6	10.8	6.36	4.41	3.76	5.43	1.26	1.33	57	42	42
RRUS-11	23.4	20.7	10.9	3.37	1.77	1.13	2.15	1.20	1.20	29	15	15
RRUS-11 (Shielded)	23.4	3.7	10.9	0.60	1.77	6.31	2.15	1.37	1.20	6	15	15
RRUS-12	24.1	22.2	11.2	3.72	1.88	1.09	2.15	1.20	1.20	32	16	16
RRUS-12 (Shielded)	24.1	7.8	11.2	1.31	1.88	3.09	2.15	1.23	1.20	12	16	16
RRUS-32	30.9	15.8	10.7	3.39	2.30	1.96	2.89	1.20	1.22	29	20	20
RRUS-32 (Shielded)	30.9	3.7	10.7	0.80	2.30	8.33	2.89	1.44	1.22	8	20	20
RRUS-E2	23.7	24.1	13.2	3.97	2.17	0.98	1.79	1.20	1.20	34	19	19

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	15	9	9
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	15	10	10
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	3
RRUS-11 (Shielded)	19.7	0.0	7.2	0.00	0.99	0.00	2.74	1.20	1.21	0	3	3
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	8	3	3
RRUS-12 (Shielded)	20.4	4.1	7.5	0.58	1.06	4.98	2.72	1.31	1.21	2	3	3
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	4
RRUS-32 (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	4	4
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	9	4	4

Date: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.85 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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	147	83	99
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	146	96	108
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	69	30	40
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	52	30	35
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	78	32	43
RRUS-12 (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	59	32	39
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	68	41	48
RRUS-32 (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	52	41	44
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	84	39	51

WIND LOADS WITH ICE:

OPA-65R-LCUU-H4	51.7	18.1	11.0	6.50	3.95	2.86	4.70	1.22	1.30	57	37	42
SBNHH-1D65A	58.7	15.6	10.8	6.36	4.41	3.76	5.43	1.26	1.33	57	42	46
RRUS-11	23.4	20.7	10.9	3.37	1.77	1.13	2.15	1.20	1.20	29	15	19
RRUS-11 (Shielded)	23.4	15.5	10.9	2.53	1.77	1.51	2.15	1.20	1.20	22	15	17
RRUS-12	24.1	22.2	11.2	3.72	1.88	1.09	2.15	1.20	1.20	32	16	20
RRUS-12 (Shielded)	24.1	16.7	11.2	2.79	1.88	1.45	2.15	1.20	1.20	24	16	18
RRUS-32	30.9	15.8	10.7	3.39	2.30	1.96	2.89	1.20	1.22	29	20	22
RRUS-32 (Shielded)	30.9	11.9	10.7	2.55	2.30	2.61	2.89	1.20	1.22	22	20	21
RRUS-E2	23.7	24.1	13.2	3.97	2.17	0.98	1.79	1.20	1.20	34	19	23

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	15	9	10
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	15	10	11
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 (Shielded)	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	5	3	4
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	8	3	5
RRUS-12 (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	6	3	4
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	5
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	9	4	5

Date: 6/13/2018

Project Name: Danbury Boxwood Lane

Project Number: CT0968

Designed By: LN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)

Ice Thickness =	1.85	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)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	147	83	131
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	146	96	134
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	69	30	59
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	35	30	33
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	78	32	67
RRUS-12 (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	39	32	37
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	68	41	61
RRUS-32 (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	37	41	38
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	84	39	73

WIND LOADS WITH ICE:

OPA-65R-LCUU-H4	51.7	18.1	11.0	6.50	3.95	2.86	4.70	1.22	1.30	57	37	52
SBNHH-1D65A	58.7	15.6	10.8	6.36	4.41	3.76	5.43	1.26	1.33	57	42	54
RRUS-11	23.4	20.7	10.9	3.37	1.77	1.13	2.15	1.20	1.20	29	15	26
RRUS-11 (Shielded)	23.4	10.4	10.9	1.68	1.77	2.26	2.15	1.20	1.20	15	15	15
RRUS-12	24.1	22.2	11.2	3.72	1.88	1.09	2.15	1.20	1.20	32	16	28
RRUS-12 (Shielded)	24.1	11.1	11.2	1.86	1.88	2.17	2.15	1.20	1.20	16	16	16
RRUS-32	30.9	15.8	10.7	3.39	2.30	1.96	2.89	1.20	1.22	29	20	27
RRUS-32 (Shielded)	30.9	7.9	10.7	1.70	2.30	3.91	2.89	1.26	1.22	15	20	17
RRUS-E2	23.7	24.1	13.2	3.97	2.17	0.98	1.79	1.20	1.20	34	19	30

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	15	9	14
SBNHH-1D65A	55.0	11.9	7.1	4.55	2.71	4.62	7.75	1.29	1.42	15	10	14
RRUS-11	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 (Shielded)	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	4	3	3
RRUS-12	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	8	3	7
RRUS-12 (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	4	3	4
RRUS-32	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	6
RRUS-32 (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
RRUS-E2	20.0	20.4	9.5	2.83	1.32	0.98	2.11	1.20	1.20	9	4	8

Date: 6/13/2018
Project Name: Danbury Boxwood Lane
Project Number: CT0968
Designed By: LN **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice (in): 0.75
* Density of ice used = 56 PCF

OPA-65R-LCUU-H4

Weight of ice based on total radial SF area:		
Height (in):	48.0	
Width (in):	14.4	
Depth (in):	7.3	
Total weight of ice on object:		56 lbs
Weight of object:	57 lbs	
Combined weight of ice and object:		113 lbs

SBNHH-1D65A

Weight of ice based on total radial SF area:		
Height (in):	55.0	
Width (in):	11.9	
Depth (in):	7.1	
Total weight of ice on object:		55 lbs
Weight of object:	34 lbs	
Combined weight of ice and object:		89 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 obj .		29 lbs
Weight of object:	51 lbs	
Combined weight of ice and object:		80 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:		29 lbs
Weight of object:	60 lbs	
Combined weight of ice and object:		89 lbs

RRUS-12

Weight of ice based on total radial SF area:		
Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		33 lbs
Weight of object:	58 lbs	
Combined weight of ice and object:		91 lbs

RRUS-E2

Weight of ice based on total radial SF area:		
Height (in):	20.0	
Width (in):	20.4	
Depth (in):	9.5	
Total weight of ice on object:		39 lbs
Weight of object:	58 lbs	
Combined weight of ice and object:		97 lbs

2" pipe

Per foot weight of ice:		
diameter (in):	2.375	
Per foot weight of ice on object:		2 lbs/ft

2-1/2" pipe

Per foot weight of ice:		
diameter (in):	2.9	
Per foot weight of ice on object:		3 lbs/ft

2"x2"x3/16" angle

Weight of ice based on total radial SF area:		
Depth (in):	2	
height (in):	12	
Width (in):	2	
Per foot weight of ice on object:		2 lbs/ft

3"x2"x1/4" angle

Weight of ice based on total radial SF area:		
Depth (in):	3	
height (in):	12	
Width (in):	2	
Per foot weight of ice on object:		3 lbs/ft

2-1/2"x2-1/2"x3/16" angle

Weight of ice based on total radial SF area:		
Depth (in):	2.5	
height (in):	12	
Width (in):	2.5	
Per foot weight of ice on object:		3 lbs/ft

3"x1-1/2"x3/16" channel

Weight of ice based on total radial SF area:		
Depth (in):	3	
height (in):	12	
Width (in):	1.5	
Per foot weight of ice on object:		3 lbs/ft

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

Current Date: 6/13/2018 12:39 PM
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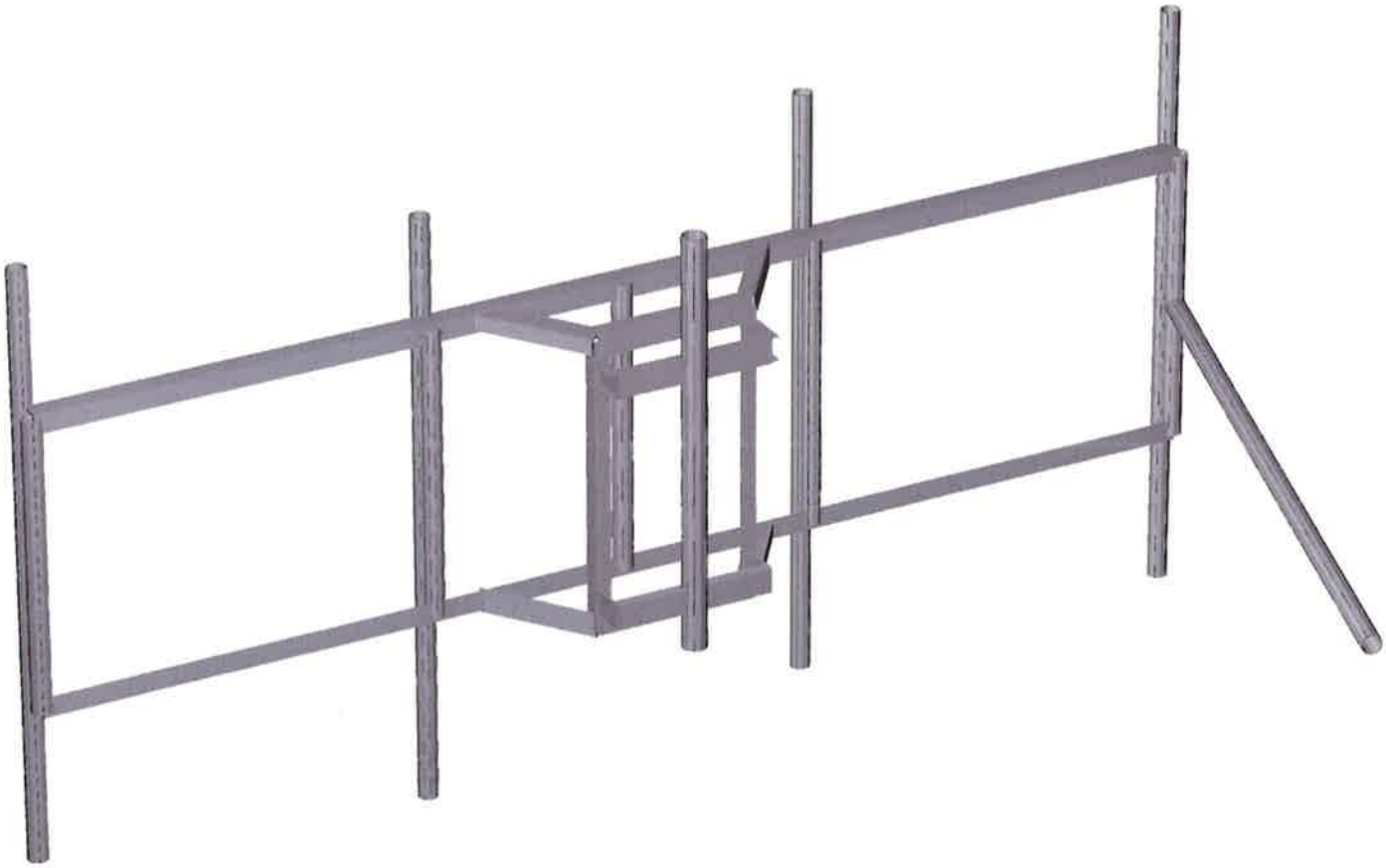

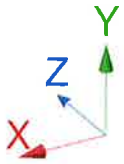

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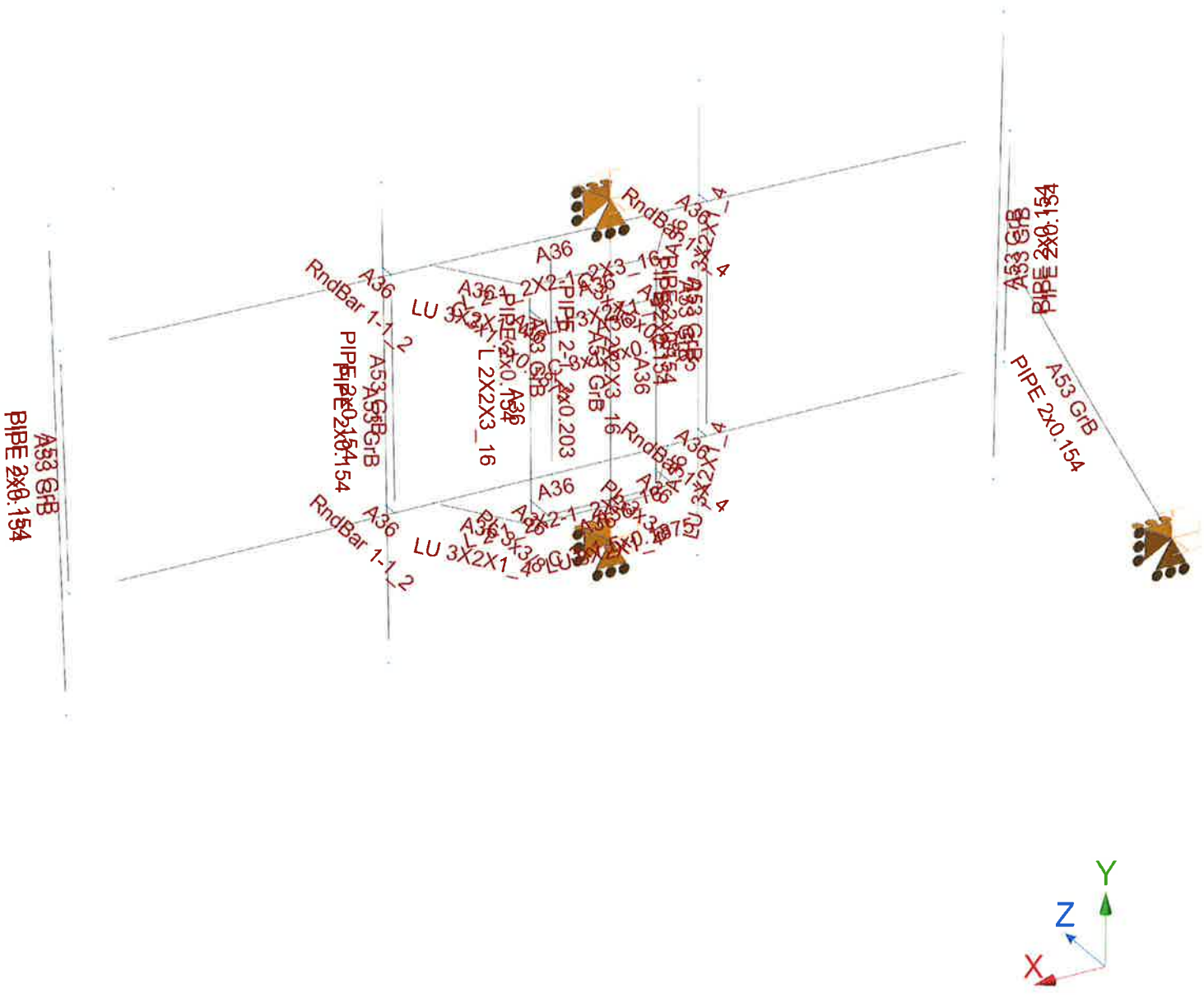

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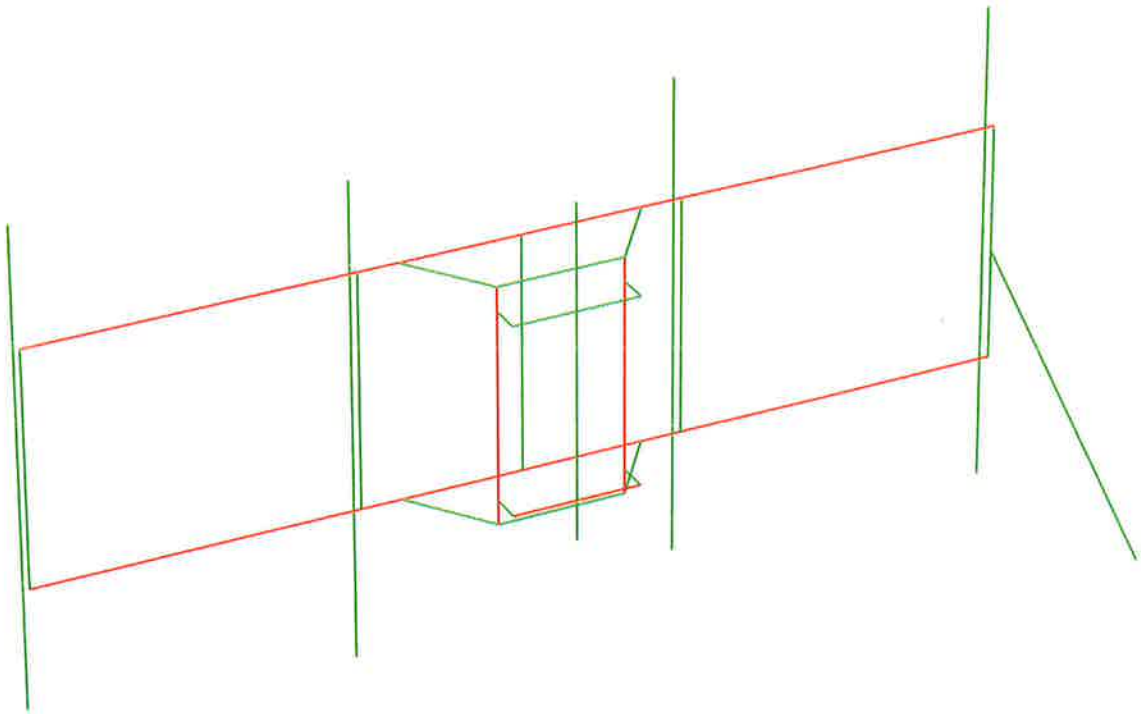
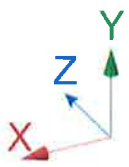
Design status

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





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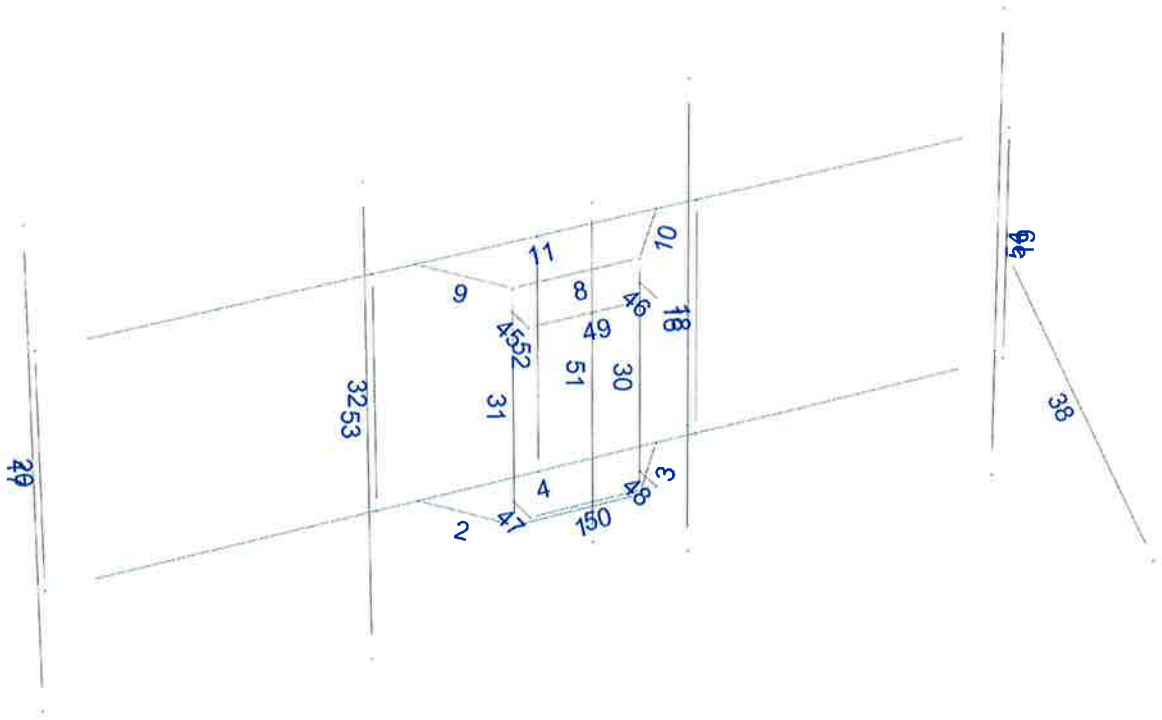

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Load data

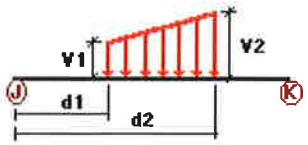
GLOSSARY

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

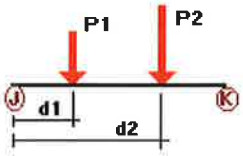


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.007	0.00	0.00	No	0.00	No
	2	z	-0.007	0.00	0.00	No	0.00	No
	3	z	-0.007	0.00	0.00	No	0.00	No
	4	z	-0.006	0.00	0.00	No	0.00	No
	8	z	-0.007	0.00	0.00	No	0.00	No
	9	z	-0.007	0.00	0.00	No	0.00	No
	10	z	-0.007	0.00	0.00	No	0.00	No
	11	z	-0.006	0.00	0.00	No	0.00	No
	30	z	-0.005	0.00	0.00	No	0.00	No
	31	z	-0.005	0.00	0.00	No	0.00	No
	38	z	-0.003	0.00	0.00	No	0.00	No
	51	z	-0.004	0.00	0.00	No	0.00	No
	52	z	-0.003	0.00	0.00	No	0.00	No
W30	1	z	-0.007	0.00	0.00	No	0.00	No
	2	z	-0.007	0.00	0.00	No	0.00	No
	3	z	-0.007	0.00	0.00	No	0.00	No
	4	z	-0.006	0.00	0.00	No	0.00	No
	8	z	-0.007	0.00	0.00	No	0.00	No
	9	z	-0.007	0.00	0.00	No	0.00	No
	10	z	-0.007	0.00	0.00	No	0.00	No
	11	z	-0.006	0.00	0.00	No	0.00	No
	30	z	-0.005	0.00	0.00	No	0.00	No
	31	z	-0.005	0.00	0.00	No	0.00	No
	38	z	-0.003	0.00	0.00	No	0.00	No
	51	z	-0.004	0.00	0.00	No	0.00	No
	52	z	-0.003	0.00	0.00	No	0.00	No
W60	2	x	-0.007	0.00	0.00	No	0.00	No
	3	x	-0.007	0.00	0.00	No	0.00	No
	9	x	-0.007	0.00	0.00	No	0.00	No
	10	x	-0.007	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	18	x	-0.003	0.00	0.00	No	0.00	No
	19	x	-0.003	0.00	0.00	No	0.00	No
	20	x	-0.003	0.00	0.00	No	0.00	No
	30	x	-0.005	0.00	0.00	No	0.00	No
	31	x	-0.005	0.00	0.00	No	0.00	No
	32	x	-0.003	0.00	0.00	No	0.00	No
	38	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.007	0.00	0.00	No	0.00	No
	46	x	-0.007	0.00	0.00	No	0.00	No
	47	x	-0.007	0.00	0.00	No	0.00	No
	48	x	-0.007	0.00	0.00	No	0.00	No
	51	x	-0.004	0.00	0.00	No	0.00	No
	52	x	-0.003	0.00	0.00	No	0.00	No
	53	x	-0.003	0.00	0.00	No	0.00	No

	17	x	-0.003	0.00	0.00	No	0.00	No
	54	x	-0.003	0.00	0.00	No	0.00	No
W90	2	x	-0.007	0.00	0.00	No	0.00	No
	3	x	-0.007	0.00	0.00	No	0.00	No
	9	x	-0.007	0.00	0.00	No	0.00	No
	10	x	-0.007	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	18	x	-0.003	0.00	0.00	No	0.00	No
	19	x	-0.003	0.00	0.00	No	0.00	No
	20	x	-0.003	0.00	0.00	No	0.00	No
	30	x	-0.005	0.00	0.00	No	0.00	No
	31	x	-0.005	0.00	0.00	No	0.00	No
	32	x	-0.003	0.00	0.00	No	0.00	No
	38	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.007	0.00	0.00	No	0.00	No
	46	x	-0.007	0.00	0.00	No	0.00	No
	47	x	-0.007	0.00	0.00	No	0.00	No
	48	x	-0.007	0.00	0.00	No	0.00	No
	51	x	-0.004	0.00	0.00	No	0.00	No
	52	x	-0.003	0.00	0.00	No	0.00	No
	53	x	-0.003	0.00	0.00	No	0.00	No
	17	x	-0.003	0.00	0.00	No	0.00	No
	54	x	-0.003	0.00	0.00	No	0.00	No
W120	2	x	-0.007	0.00	0.00	No	0.00	No
	3	x	-0.007	0.00	0.00	No	0.00	No
	9	x	-0.007	0.00	0.00	No	0.00	No
	10	x	-0.007	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	18	x	-0.003	0.00	0.00	No	0.00	No
	19	x	-0.003	0.00	0.00	No	0.00	No
	20	x	-0.003	0.00	0.00	No	0.00	No
	30	x	-0.005	0.00	0.00	No	0.00	No
	31	x	-0.005	0.00	0.00	No	0.00	No
	32	x	-0.003	0.00	0.00	No	0.00	No
	38	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.007	0.00	0.00	No	0.00	No
	46	x	-0.007	0.00	0.00	No	0.00	No
	47	x	-0.007	0.00	0.00	No	0.00	No
	48	x	-0.007	0.00	0.00	No	0.00	No
	51	x	-0.004	0.00	0.00	No	0.00	No
	52	x	-0.003	0.00	0.00	No	0.00	No
	53	x	-0.003	0.00	0.00	No	0.00	No
	17	x	-0.003	0.00	0.00	No	0.00	No
	54	x	-0.003	0.00	0.00	No	0.00	No
W150	1	z	0.007	0.00	0.00	No	0.00	No
	2	z	0.007	0.00	0.00	No	0.00	No
	3	z	0.007	0.00	0.00	No	0.00	No
	4	z	0.006	0.00	0.00	No	0.00	No
	8	z	0.007	0.00	0.00	No	0.00	No
	9	z	0.007	0.00	0.00	No	0.00	No
	10	z	0.007	0.00	0.00	No	0.00	No
	11	z	0.006	0.00	0.00	No	0.00	No
	30	z	0.005	0.00	0.00	No	0.00	No
	31	z	0.005	0.00	0.00	No	0.00	No
	38	z	0.003	0.00	0.00	No	0.00	No
	51	z	0.004	0.00	0.00	No	0.00	No
	52	z	0.003	0.00	0.00	No	0.00	No
Di	1	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
	2	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
	3	Y	-0.003	-0.003	0.00	Yes	100.00	Yes

4	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
8	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
9	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
10	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
11	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
16	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
18	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
19	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
20	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
32	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
38	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
45	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
46	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
47	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
48	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
49	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
50	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
51	Y	-0.003	-0.003	0.00	Yes	100.00	Yes
52	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
53	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
17	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
54	Y	-0.002	-0.002	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	16	y	-0.051	3.00	No
	18	y	-0.051	1.50	No
	20	y	-0.06	1.50	No
	32	y	-0.058	1.50	No
	53	y	-0.029	1.50	No
		y	-0.029	4.50	No
		y	-0.06	0.50	No
	17	y	-0.029	1.50	No
		y	-0.029	4.50	No
	54	y	-0.017	1.50	No
		y	-0.017	4.50	No
		y	-0.06	0.50	No
		y	-0.058	5.50	No
Wo	16	z	-0.069	3.00	No
	32	z	-0.019	1.50	No
	53	z	-0.074	1.50	No
		z	-0.074	4.50	No
		z	-0.068	0.50	No
	17	z	-0.074	1.50	No
		z	-0.074	4.50	No
	54	z	-0.074	1.50	No
		z	-0.074	4.50	No
		z	-0.068	0.50	No

		z	-0.084	5.50	No
W30	16	2	-0.059	3.00	No
	18	2	-0.033	1.50	No
	20	2	-0.038	1.50	No
	32	2	-0.037	1.50	No
	53	2	-0.066	1.50	No
		2	-0.066	4.50	No
		2	-0.061	0.50	No
	17	2	-0.066	1.50	No
		2	-0.066	4.50	No
	54	2	-0.067	1.50	No
		2	-0.067	4.50	No
		2	-0.061	0.50	No
		2	-0.073	5.50	No
W60	16	2	-0.04	3.00	No
	18	2	-0.035	1.50	No
	20	2	-0.044	1.50	No
	32	2	-0.039	1.50	No
	53	2	-0.05	1.50	No
		2	-0.05	4.50	No
		2	-0.048	0.50	No
	17	2	-0.05	1.50	No
		2	-0.05	4.50	No
	54	2	-0.055	1.50	No
		2	-0.055	4.50	No
		2	-0.048	0.50	No
		2	-0.051	5.50	No
W90	16	x	-0.03	3.00	No
	18	x	-0.03	1.50	No
	20	x	-0.041	1.50	No
	32	x	-0.032	1.50	No
	53	x	-0.042	1.50	No
		x	-0.042	4.50	No
		x	-0.041	0.50	No
	17	x	-0.042	1.50	No
		x	-0.042	4.50	No
	54	x	-0.048	1.50	No
		x	-0.048	4.50	No
		x	-0.041	0.50	No
		x	-0.039	5.50	No
W120	16	3	0.04	3.00	No
	18	3	0.035	1.50	No
	20	3	0.044	1.50	No
	32	3	0.039	1.50	No
	53	3	0.05	1.50	No
		3	0.05	4.50	No
		3	0.048	0.50	No
	17	3	0.05	1.50	No
		3	0.05	4.50	No
	54	3	0.055	1.50	No
		3	0.055	4.50	No
		3	0.048	0.50	No
		3	0.051	5.50	No
W150	16	3	0.059	3.00	No
	18	3	0.033	1.50	No
	20	3	0.038	1.50	No
	32	3	0.037	1.50	No
	53	3	0.066	1.50	No
		3	0.066	4.50	No
		3	0.061	0.50	No

	17	3	0.066	1.50	No
		3	0.066	4.50	No
	54	3	0.067	1.50	No
		3	0.067	4.50	No
		3	0.061	0.50	No
		3	0.073	5.50	No
Di	16	y	-0.029	3.00	No
	18	y	-0.029	1.50	No
	20	y	-0.029	1.50	No
	32	y	-0.033	1.50	No
	53	y	-0.028	1.50	No
		y	-0.028	4.50	No
		y	-0.029	0.50	No
	17	y	-0.028	1.50	No
		y	-0.028	4.50	No
	54	y	-0.028	1.50	No
		y	-0.028	4.50	No
		y	-0.029	0.50	No
		y	-0.039	5.50	No
WI0	16	z	-0.029	3.00	No
	18	z	-0.005	1.50	No
	20	z	-0.007	1.50	No
	32	z	-0.012	1.50	No
	53	z	-0.029	1.50	No
		z	-0.029	4.50	No
		z	-0.029	0.50	No
	17	z	-0.029	1.50	No
		z	-0.029	4.50	No
	54	z	-0.03	1.50	No
		z	-0.03	4.50	No
		z	-0.029	0.50	No
		z	-0.034	5.50	No
WI30	16	2	-0.026	3.00	No
	18	2	-0.015	1.50	No
	20	2	-0.017	1.50	No
	32	2	-0.016	1.50	No
	53	2	-0.026	1.50	No
		2	-0.026	4.50	No
		2	-0.027	0.50	No
	17	2	-0.026	1.50	No
		2	-0.026	4.50	No
	54	2	-0.027	1.50	No
		2	-0.027	4.50	No
		2	-0.027	0.50	No
		2	-0.03	5.50	No
WI60	16	2	-0.019	3.00	No
	18	2	-0.017	1.50	No
	20	2	-0.021	1.50	No
	32	2	-0.018	1.50	No
	53	2	-0.021	1.50	No
		2	-0.021	4.50	No
		2	-0.022	0.50	No
	17	2	-0.021	1.50	No
		2	-0.021	4.50	No
	54	2	-0.023	1.50	No
		2	-0.023	4.50	No
		2	-0.022	0.50	No
		2	-0.023	5.50	No
WI90	16	x	-0.015	3.00	No
	18	x	-0.015	1.50	No

	20	x	-0.02	1.50	No
	32	x	-0.016	1.50	No
	53	x	-0.019	1.50	No
		x	-0.019	4.50	No
		x	-0.02	0.50	No
	17	x	-0.019	1.50	No
		x	-0.019	4.50	No
	54	x	-0.022	1.50	No
		x	-0.022	4.50	No
		x	-0.02	0.50	No
		x	-0.019	5.50	No
WI120	16	3	0.019	3.00	No
	18	3	0.017	1.50	No
	20	3	0.021	1.50	No
	32	3	0.018	1.50	No
	53	3	0.021	1.50	No
		3	0.021	4.50	No
		3	0.022	0.50	No
	17	3	0.021	1.50	No
		3	0.021	4.50	No
	54	3	0.023	1.50	No
		3	0.023	4.50	No
		3	0.022	0.50	No
		3	0.023	5.50	No
WI150	16	3	0.026	3.00	No
	18	3	0.015	1.50	No
	20	3	0.017	1.50	No
	32	3	0.016	1.50	No
	53	3	0.026	1.50	No
		3	0.026	4.50	No
		3	0.027	0.50	No
	17	3	0.026	1.50	No
		3	0.026	4.50	No
	54	3	0.027	1.50	No
		3	0.027	4.50	No
		3	0.027	0.50	No
		3	0.03	5.50	No
WL0	16	z	-0.008	3.00	No
	32	z	-0.002	1.50	No
	53	z	-0.008	1.50	No
		z	-0.008	4.50	No
		z	-0.008	0.50	No
	17	z	-0.008	1.50	No
		z	-0.008	4.50	No
	54	z	-0.008	1.50	No
		z	-0.008	4.50	No
		z	-0.008	0.50	No
		z	-0.009	5.50	No
WL30	16	2	-0.007	3.00	No
	18	2	-0.004	1.50	No
	20	2	-0.004	1.50	No
	32	2	-0.004	1.50	No
	53	2	-0.007	1.50	No
		2	-0.007	4.50	No
		2	-0.007	0.50	No
	17	2	-0.007	1.50	No
		2	-0.007	4.50	No
	54	2	-0.007	1.50	No
		2	-0.007	4.50	No
		2	-0.007	0.50	No

		2	-0.008	5.50	No
WL60	16	2	-0.005	3.00	No
		2	0.00	0.00	No
	18	2	-0.004	1.50	No
		2	0.00	0.00	No
	20	2	-0.005	1.50	No
		2	0.00	0.00	No
	32	2	-0.005	1.50	No
	53	2	-0.006	1.50	No
		2	-0.006	4.50	No
		2	-0.006	0.50	No
		2	0.00	0.00	No
	17	2	-0.006	1.50	No
		2	-0.006	4.50	No
	54	2	-0.006	1.50	No
		2	-0.006	4.50	No
		2	-0.006	0.50	No
		2	-0.006	5.50	No
		2	0.00	0.00	No
WL90	16	x	-0.004	3.00	No
	18	x	-0.004	1.50	No
	20	x	-0.005	1.50	No
	32	x	-0.004	1.50	No
	53	x	-0.005	1.50	No
		x	-0.005	4.50	No
		x	-0.005	0.50	No
	17	x	-0.005	1.50	No
		x	-0.005	4.50	No
	54	x	-0.005	1.50	No
		x	-0.005	4.50	No
		x	-0.005	0.50	No
		x	-0.005	5.50	No
WL120	16	3	0.005	3.00	No
		3	0.00	0.00	No
	18	3	0.004	1.50	No
		3	0.00	0.00	No
	20	3	0.005	1.50	No
		3	0.00	0.00	No
	32	3	0.005	1.50	No
	53	3	0.006	1.50	No
		3	0.006	4.50	No
		3	0.006	0.50	No
		3	0.00	0.00	No
	17	3	0.006	1.50	No
		3	0.006	4.50	No
	54	3	0.006	1.50	No
		3	0.006	4.50	No
		3	0.006	0.50	No
		3	0.006	5.50	No
		2	0.00	0.00	No
WL150	16	3	0.007	3.00	No
	18	3	0.004	1.50	No
	20	3	0.004	1.50	No
	32	3	0.004	1.50	No
	53	3	0.007	1.50	No
		3	0.007	4.50	No
		3	0.007	0.50	No
	17	3	0.007	1.50	No
		3	0.007	4.50	No
	54	3	0.007	1.50	No

		3	0.007	4.50	No
		3	0.007	0.50	No
		3	0.008	5.50	No
LL1	11	y	-0.25	0.00	No
LL2	11	y	-0.25	6.00	No
LL3	11	y	-0.25	12.00	No
LLa1	17	y	-0.50	0.00	No
LLa2	53	y	-0.50	0.00	No
LLa3	16	y	-0.50	0.00	No
LLa4	54	y	-0.50	0.00	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: 6/13/2018 12:40 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT0968\CT0968.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
	C 3x1.5x0.1875	**45**	LC1 at 100.00%	0.09	OK	
			LC10 at 0.00%	0.34	OK	
			LC11 at 0.00%	0.22	OK	
			LC12 at 0.00%	0.14	OK	
			LC13 at 0.00%	0.09	OK	
			LC14 at 0.00%	0.18	OK	
			LC15 at 0.00%	0.13	OK	
			LC16 at 0.00%	0.06	OK	
			LC17 at 0.00%	0.08	OK	

LC18 at 0.00%	0.18	OK	
LC19 at 0.00%	0.35	OK	
LC2 at 0.00%	0.13	OK	
LC20 at 0.00%	0.43	OK	
LC21 at 0.00%	0.38	OK	
LC22 at 0.00%	0.30	OK	
LC23 at 0.00%	0.18	OK	
LC24 at 0.00%	0.10	OK	
LC25 at 0.00%	0.22	OK	
LC26 at 0.00%	0.20	OK	
LC27 at 0.00%	0.21	OK	
LC28 at 0.00%	0.23	OK	
LC29 at 0.00%	0.27	OK	
LC3 at 0.00%	0.09	OK	
LC30 at 0.00%	0.27	OK	
LC31 at 0.00%	0.31	OK	
LC32 at 0.00%	0.33	OK	
LC33 at 0.00%	0.33	OK	
LC34 at 0.00%	0.31	OK	
LC35 at 0.00%	0.27	OK	
LC36 at 0.00%	0.27	OK	
LC37 at 0.00%	0.13	OK	
LC38 at 0.00%	0.43	OK	
LC39 at 0.00%	0.24	OK	
LC4 at 100.00%	0.05	OK	
LC40 at 0.00%	0.06	OK	
LC41 at 0.00%	0.50	OK	
LC42 at 0.00%	0.50	OK	
LC43 at 0.00%	0.50	OK	
LC44 at 0.00%	0.50	OK	
LC45 at 0.00%	0.51	OK	
LC46 at 0.00%	0.51	OK	
LC47 at 0.00%	0.52	OK	
LC48 at 0.00%	**0.53**	**OK**	Eq. H1-1b
LC49 at 0.00%	0.53	OK	
LC5 at 0.00%	0.13	OK	
LC50 at 0.00%	0.52	OK	
LC51 at 0.00%	0.51	OK	
LC52 at 0.00%	0.51	OK	
LC53 at 0.00%	0.35	OK	
LC54 at 0.00%	0.34	OK	
LC55 at 0.00%	0.34	OK	
LC56 at 0.00%	0.35	OK	
LC57 at 0.00%	0.36	OK	
LC58 at 0.00%	0.36	OK	
LC59 at 0.00%	0.37	OK	
LC6 at 0.00%	0.22	OK	
LC60 at 0.00%	0.38	OK	
LC61 at 0.00%	0.37	OK	
LC62 at 0.00%	0.37	OK	
LC63 at 0.00%	0.36	OK	
LC64 at 0.00%	0.36	OK	
LC65 at 0.00%	0.18	OK	
LC66 at 0.00%	0.17	OK	
LC67 at 0.00%	0.17	OK	
LC68 at 0.00%	0.18	OK	
LC69 at 0.00%	0.19	OK	
LC7 at 0.00%	0.39	OK	
LC70 at 0.00%	0.19	OK	
LC71 at 0.00%	0.20	OK	
LC72 at 0.00%	0.21	OK	
LC73 at 0.00%	0.21	OK	
LC74 at 0.00%	0.20	OK	
LC75 at 0.00%	0.19	OK	

	LC76 at 0.00%	0.19	OK
	LC77 at 100.00%	0.03	OK
	LC78 at 100.00%	0.03	OK
	LC79 at 100.00%	0.03	OK
	LC8 at 0.00%	0.48	OK
	LC80 at 100.00%	0.03	OK
	LC81 at 100.00%	0.03	OK
	LC82 at 0.00%	0.03	OK
	LC83 at 0.00%	0.04	OK
	LC84 at 0.00%	0.05	OK
	LC85 at 0.00%	0.05	OK
	LC86 at 0.00%	0.04	OK
	LC87 at 100.00%	0.03	OK
	LC88 at 100.00%	0.03	OK
	LC9 at 0.00%	0.43	OK
	W180 at 0.00%	0.14	OK
	W210 at 0.00%	0.19	OK
	W240 at 0.00%	0.16	OK
	W270 at 0.00%	0.11	OK
	W300 at 0.00%	0.04	OK
	W330 at 100.00%	0.03	OK
	WI180 at 0.00%	0.05	OK
	WI210 at 0.00%	0.07	OK
	WI240 at 0.00%	0.06	OK
	WI270 at 0.00%	0.04	OK
	WI300 at 100.00%	0.01	OK
	WI330 at 100.00%	0.01	OK
	WL180 at 0.00%	0.01	OK
	WL210 at 0.00%	0.02	OK
	WL240 at 0.00%	0.02	OK
	WL270 at 0.00%	0.01	OK
	WL300 at 100.00%	0.00	OK
	WL330 at 100.00%	0.00	OK
46	LC1 at 100.00%	0.06	OK
	LC10 at 0.00%	0.06	OK
	LC11 at 0.00%	0.10	OK
	LC12 at 0.00%	0.12	OK
	LC13 at 100.00%	0.05	OK
	LC14 at 0.00%	0.18	OK
	LC15 at 0.00%	0.26	OK
	LC16 at 0.00%	0.35	OK
	LC17 at 0.00%	0.39	OK
	LC18 at 0.00%	0.41	OK
	LC19 at 0.00%	0.26	OK
	LC2 at 0.00%	0.22	OK
	LC20 at 0.00%	0.08	OK
	LC21 at 100.00%	0.03	OK
	LC22 at 0.00%	0.10	OK
	LC23 at 0.00%	0.14	OK
	LC24 at 0.00%	0.16	OK
	LC25 at 0.00%	0.26	OK
	LC26 at 0.00%	0.31	OK
	LC27 at 0.00%	0.30	OK
	LC28 at 0.00%	0.33	OK
	LC29 at 0.00%	0.34	OK
	LC3 at 0.00%	0.30	OK
	LC30 at 0.00%	0.35	OK
	LC31 at 0.00%	0.31	OK
	LC32 at 0.00%	0.26	OK
	LC33 at 0.00%	0.26	OK
	LC34 at 0.00%	0.24	OK
	LC35 at 0.00%	0.23	OK
	LC36 at 0.00%	0.22	OK

LC37 at 0.00%	0.13	OK	
LC38 at 0.00%	0.06	OK	
LC39 at 0.00%	0.24	OK	
LC4 at 0.00%	0.39	OK	
LC40 at 0.00%	0.42	OK	
LC41 at 100.00%	0.03	OK	
LC42 at 0.00%	0.04	OK	
LC43 at 0.00%	0.04	OK	
LC44 at 0.00%	0.04	OK	
LC45 at 0.00%	0.05	OK	
LC46 at 0.00%	0.05	OK	
LC47 at 0.00%	0.04	OK	
LC48 at 100.00%	0.03	OK	
LC49 at 100.00%	0.03	OK	
LC5 at 0.00%	0.43	OK	
LC50 at 100.00%	0.03	OK	
LC51 at 100.00%	0.03	OK	
LC52 at 100.00%	0.03	OK	
LC53 at 0.00%	0.18	OK	
LC54 at 0.00%	0.20	OK	
LC55 at 0.00%	0.20	OK	
LC56 at 0.00%	0.20	OK	
LC57 at 0.00%	0.21	OK	
LC58 at 0.00%	0.21	OK	
LC59 at 0.00%	0.20	OK	
LC6 at 0.00%	0.46	OK	
LC60 at 0.00%	0.18	OK	
LC61 at 0.00%	0.19	OK	
LC62 at 0.00%	0.18	OK	
LC63 at 0.00%	0.18	OK	
LC64 at 0.00%	0.17	OK	
LC65 at 0.00%	0.35	OK	
LC66 at 0.00%	0.36	OK	
LC67 at 0.00%	0.36	OK	
LC68 at 0.00%	0.37	OK	
LC69 at 0.00%	0.37	OK	
LC7 at 0.00%	0.31	OK	
LC70 at 0.00%	0.37	OK	
LC71 at 0.00%	0.36	OK	
LC72 at 0.00%	0.35	OK	
LC73 at 0.00%	0.35	OK	
LC74 at 0.00%	0.34	OK	
LC75 at 0.00%	0.34	OK	
LC76 at 0.00%	0.34	OK	
LC77 at 0.00%	0.49	OK	
LC78 at 0.00%	0.50	OK	
LC79 at 0.00%	0.50	OK	
LC8 at 0.00%	0.13	OK	
LC80 at 0.00%	0.51	OK	
LC81 at 0.00%	0.51	OK	
LC82 at 0.00%	**0.51**	**OK**	Eq. H1-1b
LC83 at 0.00%	0.50	OK	
LC84 at 0.00%	0.49	OK	
LC85 at 0.00%	0.49	OK	
LC86 at 0.00%	0.48	OK	
LC87 at 0.00%	0.48	OK	
LC88 at 0.00%	0.48	OK	
LC9 at 0.00%	0.05	OK	
W180 at 0.00%	0.08	OK	
W210 at 0.00%	0.03	OK	
W240 at 0.00%	0.08	OK	
W270 at 0.00%	0.14	OK	
W300 at 0.00%	0.16	OK	
W330 at 0.00%	0.18	OK	

	WI180 at 0.00%	0.03	OK	
	WI210 at 0.00%	0.02	OK	
	WI240 at 0.00%	0.02	OK	
	WI270 at 0.00%	0.05	OK	
	WI300 at 0.00%	0.06	OK	
	WI330 at 0.00%	0.06	OK	
	WL180 at 0.00%	0.01	OK	
	WL210 at 0.00%	0.01	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 0.00%	0.01	OK	
	WL300 at 0.00%	0.02	OK	
	WL330 at 0.00%	0.02	OK	
49	LC1 at 46.88%	0.55	OK	
	LC10 at 50.00%	0.54	OK	
	LC11 at 50.00%	0.64	OK	Eq. H1-1b
	LC12 at 46.88%	0.71	OK	
	LC13 at 46.88%	0.58	OK	
	LC14 at 100.00%	0.18	OK	
	LC15 at 100.00%	0.26	OK	
	LC16 at 46.88%	0.53	OK	
	LC17 at 46.88%	0.80	OK	
	LC18 at 46.88%	0.93	OK	
	LC19 at 46.88%	0.81	OK	
	LC2 at 50.00%	0.23	OK	
	LC20 at 46.88%	0.47	OK	
	LC21 at 0.00%	0.38	OK	
	LC22 at 50.00%	0.47	OK	
	LC23 at 46.88%	0.59	OK	
	LC24 at 46.88%	0.73	OK	
	LC25 at 50.00%	0.52	OK	
	LC26 at 46.88%	0.48	OK	
	LC27 at 46.88%	0.49	OK	
	LC28 at 46.88%	0.58	OK	
	LC29 at 46.88%	0.65	OK	
	LC3 at 100.00%	0.30	OK	
	LC30 at 46.88%	0.67	OK	
	LC31 at 46.88%	0.65	OK	
	LC32 at 46.88%	0.55	OK	
	LC33 at 46.88%	0.55	OK	
	LC34 at 50.00%	0.52	OK	
	LC35 at 50.00%	0.54	OK	
	LC36 at 50.00%	0.55	OK	
	LC37 at 46.88%	0.24	OK	
	LC38 at 50.00%	0.45	OK	
	LC39 at 46.88%	0.45	OK	
	LC4 at 46.88%	0.61	OK	
	LC40 at 46.88%	0.48	OK	
	LC41 at 0.00%	0.50	OK	
	LC42 at 0.00%	0.50	OK	
	LC43 at 0.00%	0.50	OK	
	LC44 at 0.00%	0.50	OK	
	LC45 at 0.00%	0.51	OK	
	LC46 at 0.00%	0.51	OK	
	LC47 at 0.00%	0.53	OK	
	LC48 at 0.00%	0.53	OK	Eq. H1-1b
	LC49 at 0.00%	0.53	OK	
	LC5 at 46.88%	0.88	OK	
	LC50 at 0.00%	0.52	OK	
	LC51 at 0.00%	0.52	OK	
	LC52 at 0.00%	0.52	OK	
	LC53 at 46.88%	0.50	OK	
	LC54 at 46.88%	0.52	OK	
	LC55 at 46.88%	0.52	OK	

	LC56 at 46.88%	0.55	OK	
	LC57 at 46.88%	0.57	OK	
	LC58 at 46.88%	0.57	OK	
	LC59 at 46.88%	0.56	OK	
	LC6 at 46.88%	**1.01**	**N.G.**	Eq. H1-1b
	LC60 at 46.88%	0.54	OK	
	LC61 at 46.88%	0.54	OK	
	LC62 at 46.88%	0.51	OK	
	LC63 at 46.88%	0.49	OK	
	LC64 at 46.88%	0.49	OK	
	LC65 at 50.00%	0.51	OK	
	LC66 at 50.00%	0.49	OK	
	LC67 at 50.00%	0.50	OK	
	LC68 at 46.88%	0.49	OK	
	LC69 at 46.88%	0.51	OK	
	LC7 at 46.88%	0.89	OK	
	LC70 at 46.88%	0.51	OK	
	LC71 at 46.88%	0.50	OK	
	LC72 at 50.00%	0.50	OK	
	LC73 at 50.00%	0.50	OK	
	LC74 at 50.00%	0.51	OK	
	LC75 at 50.00%	0.52	OK	
	LC76 at 50.00%	0.52	OK	
	LC77 at 46.88%	0.49	OK	
	LC78 at 46.88%	0.52	OK	
	LC79 at 46.88%	0.52	OK	
	LC8 at 46.88%	0.56	OK	
	LC80 at 46.88%	0.54	OK	
	LC81 at 46.88%	0.56	OK	
	LC82 at 46.88%	0.56	OK	
	LC83 at 46.88%	0.56	OK	
	LC84 at 46.88%	0.53	OK	
	LC85 at 46.88%	0.53	OK	
	LC86 at 46.88%	0.51	OK	
	LC87 at 46.88%	0.49	OK	
	LC88 at 46.88%	0.48	OK	
	LC9 at 0.00%	0.43	OK	
	W180 at 46.88%	0.41	OK	
	W210 at 0.00%	0.19	OK	
	W240 at 0.00%	0.16	OK	
	W270 at 46.88%	0.23	OK	
	W300 at 46.88%	0.42	OK	
	W330 at 46.88%	0.51	OK	
	WI180 at 46.88%	0.15	OK	
	WI210 at 0.00%	0.07	OK	
	WI240 at 0.00%	0.06	OK	
	WI270 at 46.88%	0.08	OK	
	WI300 at 46.88%	0.16	OK	
	WI330 at 46.88%	0.18	OK	
	WL180 at 46.88%	0.04	OK	
	WL210 at 0.00%	0.02	OK	
	WL240 at 0.00%	0.02	OK	
	WL270 at 46.88%	0.02	OK	
	WL300 at 46.88%	0.04	OK	
	WL330 at 46.88%	0.05	OK	
50	LC1 at 46.88%	1.13	N.G.	
	LC10 at 46.88%	0.75	OK	
	LC11 at 46.88%	1.10	N.G.	
	LC12 at 46.88%	**1.29**	**N.G.**	Eq. H1-1b
	LC13 at 46.88%	1.03	N.G.	
	LC14 at 46.88%	0.60	OK	
	LC15 at 50.00%	0.43	OK	
	LC16 at 50.00%	0.62	OK	

LC17 at 50.00%	0.73	OK	
LC18 at 46.88%	0.85	OK	
LC19 at 46.88%	0.62	OK	
LC2 at 46.88%	0.70	OK	
LC20 at 50.00%	0.20	OK	
LC21 at 46.88%	0.22	OK	
LC22 at 46.88%	0.66	OK	
LC23 at 46.88%	1.04	N.G.	
LC24 at 46.88%	1.23	N.G.	
LC25 at 46.88%	0.77	OK	
LC26 at 50.00%	0.67	OK	
LC27 at 50.00%	0.67	OK	
LC28 at 50.00%	0.72	OK	
LC29 at 50.00%	0.75	OK	
LC3 at 50.00%	0.53	OK	
LC30 at 50.00%	0.76	OK	
LC31 at 50.00%	0.71	OK	
LC32 at 50.00%	0.63	OK	
LC33 at 50.00%	0.64	OK	
LC34 at 46.88%	0.69	OK	
LC35 at 46.88%	0.78	OK	
LC36 at 46.88%	0.80	OK	
LC37 at 50.00%	0.31	OK	
LC38 at 50.00%	0.64	OK	
LC39 at 50.00%	0.59	OK	
LC4 at 50.00%	0.72	OK	
LC40 at 46.88%	0.62	OK	
LC41 at 50.00%	0.69	OK	
LC42 at 50.00%	0.71	OK	
LC43 at 50.00%	0.71	OK	
LC44 at 50.00%	0.73	OK	
LC45 at 50.00%	0.73	OK	
LC46 at 50.00%	0.74	OK	
LC47 at 50.00%	0.72	OK	
LC48 at 50.00%	0.70	OK	
LC49 at 50.00%	0.71	OK	
LC5 at 50.00%	0.84	OK	Eq. H1-1b
LC50 at 50.00%	0.69	OK	
LC51 at 50.00%	0.68	OK	
LC52 at 50.00%	0.68	OK	
LC53 at 46.88%	0.64	OK	
LC54 at 50.00%	0.63	OK	
LC55 at 50.00%	0.63	OK	
LC56 at 50.00%	0.65	OK	
LC57 at 50.00%	0.65	OK	
LC58 at 50.00%	0.66	OK	
LC59 at 50.00%	0.64	OK	
LC6 at 50.00%	0.79	OK	
LC60 at 50.00%	0.62	OK	
LC61 at 50.00%	0.63	OK	
LC62 at 46.88%	0.62	OK	
LC63 at 46.88%	0.64	OK	
LC64 at 46.88%	0.65	OK	
LC65 at 50.00%	0.67	OK	
LC66 at 50.00%	0.69	OK	
LC67 at 50.00%	0.69	OK	
LC68 at 50.00%	0.71	OK	
LC69 at 50.00%	0.71	OK	
LC7 at 50.00%	0.59	OK	
LC70 at 50.00%	0.72	OK	
LC71 at 50.00%	0.70	OK	
LC72 at 50.00%	0.68	OK	
LC73 at 50.00%	0.69	OK	
LC74 at 50.00%	0.67	OK	

		LC75 at 50.00%	0.66	OK	
		LC76 at 50.00%	0.66	OK	
		LC77 at 46.88%	0.74	OK	
		LC78 at 46.88%	0.71	OK	
		LC79 at 46.88%	0.71	OK	
		LC8 at 50.00%	0.31	OK	
		LC80 at 46.88%	0.67	OK	
		LC81 at 46.88%	0.64	OK	
		LC82 at 46.88%	0.64	OK	
		LC83 at 46.88%	0.65	OK	
		LC84 at 46.88%	0.69	OK	
		LC85 at 46.88%	0.69	OK	
		LC86 at 46.88%	0.72	OK	
		LC87 at 46.88%	0.75	OK	
		LC88 at 46.88%	0.76	OK	
		LC9 at 46.88%	0.31	OK	
		W180 at 46.88%	0.51	OK	
		W210 at 46.88%	0.20	OK	
		W240 at 50.00%	0.13	OK	
		W270 at 46.88%	0.29	OK	
		W300 at 46.88%	0.53	OK	
		W330 at 46.88%	0.65	OK	
		WI180 at 46.88%	0.18	OK	
		WI210 at 46.88%	0.04	OK	
		WI240 at 46.88%	0.04	OK	
		WI270 at 46.88%	0.10	OK	
		WI300 at 46.88%	0.20	OK	
		WI330 at 46.88%	0.23	OK	
		WL180 at 46.88%	0.04	OK	
		WL210 at 50.00%	0.01	OK	
		WL240 at 46.88%	0.01	OK	
		WL270 at 46.88%	0.03	OK	
		WL300 at 46.88%	0.05	OK	
		WL330 at 46.88%	0.06	OK	
L 2-1_2X2-1_2X3_16	**4**	LC1 at 36.46%	1.36	N.G.	
		LC10 at 62.50%	0.86	With warnings	
		LC11 at 62.50%	1.12	N.G.	
		LC12 at 62.50%	1.24	N.G.	Eq. H2-1
		LC13 at 36.46%	1.31	N.G.	
		LC14 at 36.46%	1.15	N.G.	
		LC15 at 36.46%	0.88	With warnings	
		LC16 at 62.50%	0.51	With warnings	
		LC17 at 36.46%	1.09	N.G.	
		LC18 at 36.46%	1.37	N.G.	
		LC19 at 36.46%	1.35	N.G.	
		LC2 at 36.46%	1.20	N.G.	
		LC20 at 36.46%	0.94	With warnings	
		LC21 at 36.46%	0.64	With warnings	
		LC22 at 62.50%	0.80	With warnings	
		LC23 at 62.50%	1.06	N.G.	
		LC24 at 62.50%	1.19	N.G.	
		LC25 at 100.00%	0.89	With warnings	
		LC26 at 100.00%	0.87	With warnings	
		LC27 at 100.00%	0.88	With warnings	
		LC28 at 66.67%	0.89	With warnings	
		LC29 at 66.67%	0.92	With warnings	
		LC3 at 36.46%	0.93	With warnings	
		LC30 at 66.67%	0.93	With warnings	
		LC31 at 66.67%	0.93	With warnings	
		LC32 at 100.00%	0.95	With warnings	
		LC33 at 100.00%	0.94	With warnings	
		LC34 at 100.00%	0.93	With warnings	
		LC35 at 100.00%	0.91	With warnings	

LC36 at 100.00%	0.92	With warnings	
LC37 at 100.00%	0.42	With warnings	
LC38 at 0.00%	1.42	N.G.	
LC39 at 100.00%	0.54	With warnings	
LC4 at 66.67%	0.61	With warnings	
LC40 at 100.00%	1.42	N.G.	
LC41 at 0.00%	1.68	N.G.	
LC42 at 0.00%	1.69	N.G.	
LC43 at 0.00%	1.69	N.G.	
LC44 at 0.00%	**1.69**	**N.G.**	Eq. H2-1
LC45 at 0.00%	1.69	N.G.	
LC46 at 0.00%	1.69	N.G.	
LC47 at 0.00%	1.68	N.G.	
LC48 at 0.00%	1.68	N.G.	
LC49 at 0.00%	1.68	N.G.	
LC5 at 36.46%	1.15	N.G.	
LC50 at 0.00%	1.68	N.G.	
LC51 at 0.00%	1.68	N.G.	
LC52 at 0.00%	1.68	N.G.	
LC53 at 33.33%	0.80	With warnings	
LC54 at 33.33%	0.81	With warnings	
LC55 at 33.33%	0.81	With warnings	
LC56 at 33.33%	0.79	With warnings	
LC57 at 33.33%	0.77	With warnings	
LC58 at 33.33%	0.77	With warnings	
LC59 at 33.33%	0.75	With warnings	
LC6 at 36.46%	1.42	N.G.	Eq. H2-1
LC60 at 33.33%	0.75	With warnings	
LC61 at 33.33%	0.75	With warnings	
LC62 at 33.33%	0.77	With warnings	
LC63 at 33.33%	0.79	With warnings	
LC64 at 33.33%	0.79	With warnings	
LC65 at 65.63%	0.58	With warnings	
LC66 at 65.63%	0.55	With warnings	
LC67 at 65.63%	0.55	With warnings	
LC68 at 100.00%	0.55	With warnings	
LC69 at 100.00%	0.55	With warnings	
LC7 at 36.46%	1.40	N.G.	
LC70 at 100.00%	0.55	With warnings	
LC71 at 65.63%	0.56	With warnings	
LC72 at 65.63%	0.58	With warnings	
LC73 at 65.63%	0.58	With warnings	
LC74 at 65.63%	0.59	With warnings	
LC75 at 65.63%	0.59	With warnings	
LC76 at 65.63%	0.60	With warnings	
LC77 at 100.00%	1.67	N.G.	
LC78 at 100.00%	1.66	N.G.	
LC79 at 100.00%	1.66	N.G.	
LC8 at 36.46%	0.97	With warnings	
LC80 at 100.00%	1.67	N.G.	
LC81 at 100.00%	1.67	N.G.	
LC82 at 100.00%	1.67	N.G.	
LC83 at 100.00%	1.68	N.G.	
LC84 at 100.00%	1.68	N.G.	Eq. H2-1
LC85 at 100.00%	1.68	N.G.	
LC86 at 100.00%	1.68	N.G.	
LC87 at 100.00%	1.67	N.G.	
LC88 at 100.00%	1.67	N.G.	
LC9 at 100.00%	0.70	With warnings	
W180 at 36.46%	0.79	With warnings	
W210 at 36.46%	0.58	With warnings	
W240 at 36.46%	0.39	With warnings	
W270 at 62.50%	0.40	With warnings	
W300 at 62.50%	0.56	With warnings	

	W330 at 36.46%	0.66	With warnings	
	WI180 at 36.46%	0.30	With warnings	
	WI210 at 36.46%	0.19	With warnings	
	WI240 at 36.46%	0.18	With warnings	
	WI270 at 62.50%	0.15	With warnings	
	WI300 at 62.50%	0.21	With warnings	
	WI330 at 62.50%	0.24	With warnings	
	WL180 at 36.46%	0.07	With warnings	
	WL210 at 36.46%	0.05	With warnings	
	WL240 at 36.46%	0.05	With warnings	
	WL270 at 62.50%	0.04	With warnings	
	WL300 at 36.46%	0.06	With warnings	
	WL330 at 62.50%	0.06	With warnings	
11	LC1 at 36.46%	1.22	N.G.	Eq. H2-1
	LC10 at 66.67%	0.68	With warnings	
	LC11 at 66.67%	0.82	With warnings	
	LC12 at 36.46%	1.07	N.G.	
	LC13 at 36.46%	1.21	N.G.	
	LC14 at 36.46%	0.96	With warnings	
	LC15 at 36.46%	0.68	With warnings	
	LC16 at 62.50%	0.50	With warnings	
	LC17 at 62.50%	0.79	With warnings	
	LC18 at 36.46%	1.08	N.G.	
	LC19 at 36.46%	1.29	N.G.	Sec. F1
	LC2 at 36.46%	0.97	With warnings	
	LC20 at 36.46%	0.97	With warnings	
	LC21 at 36.46%	0.68	With warnings	
	LC22 at 66.67%	0.57	With warnings	
	LC23 at 62.50%	0.78	With warnings	
	LC24 at 36.46%	1.06	N.G.	
	LC25 at 66.67%	0.81	With warnings	
	LC26 at 66.67%	0.75	With warnings	
	LC27 at 66.67%	0.75	With warnings	
	LC28 at 100.00%	0.72	With warnings	
	LC29 at 100.00%	0.71	With warnings	
	LC3 at 36.46%	0.69	With warnings	
	LC30 at 100.00%	0.70	With warnings	
	LC31 at 100.00%	0.71	With warnings	
	LC32 at 66.67%	0.74	With warnings	
	LC33 at 66.67%	0.74	With warnings	
	LC34 at 66.67%	0.79	With warnings	
	LC35 at 66.67%	0.81	With warnings	
	LC36 at 66.67%	0.82	With warnings	
	LC37 at 66.67%	0.34	With warnings	
	LC38 at 0.00%	1.16	N.G.	
	LC39 at 66.67%	0.46	With warnings	
	LC4 at 62.50%	0.51	With warnings	
	LC40 at 100.00%	1.15	N.G.	
	LC41 at 0.00%	1.38	N.G.	
	LC42 at 0.00%	1.38	N.G.	
	LC43 at 0.00%	1.37	N.G.	
	LC44 at 0.00%	1.37	N.G.	
	LC45 at 0.00%	1.37	N.G.	
	LC46 at 0.00%	1.37	N.G.	
	LC47 at 0.00%	1.38	N.G.	
	LC48 at 0.00%	1.38	N.G.	
	LC49 at 0.00%	1.38	N.G.	
	LC5 at 62.50%	0.80	With warnings	
	LC50 at 0.00%	**1.38**	**N.G.**	Eq. H2-1
	LC51 at 0.00%	1.38	N.G.	
	LC52 at 0.00%	1.38	N.G.	
	LC53 at 66.67%	0.49	With warnings	
	LC54 at 66.67%	0.47	With warnings	

		LC55 at 66.67%	0.47	With warnings
		LC56 at 66.67%	0.46	With warnings
		LC57 at 66.67%	0.45	With warnings
		LC58 at 66.67%	0.45	With warnings
		LC59 at 66.67%	0.46	With warnings
		LC6 at 36.46%	1.06	N.G.
		LC60 at 66.67%	0.47	With warnings
		LC61 at 66.67%	0.47	With warnings
		LC62 at 66.67%	0.48	With warnings
		LC63 at 66.67%	0.49	With warnings
		LC64 at 66.67%	0.49	With warnings
		LC65 at 100.00%	0.45	With warnings
		LC66 at 100.00%	0.44	With warnings
		LC67 at 100.00%	0.44	With warnings
		LC68 at 100.00%	0.44	With warnings
		LC69 at 100.00%	0.44	With warnings
		LC7 at 36.46%	1.23	N.G.
		LC70 at 100.00%	0.44	With warnings
		LC71 at 100.00%	0.44	With warnings
		LC72 at 100.00%	0.44	With warnings
		LC73 at 100.00%	0.44	With warnings
		LC74 at 100.00%	0.45	With warnings
		LC75 at 100.00%	0.45	With warnings
		LC76 at 100.00%	0.45	With warnings
		LC77 at 100.00%	1.36	N.G.
		LC78 at 100.00%	1.35	N.G.
		LC79 at 100.00%	1.35	N.G.
		LC8 at 36.46%	0.97	With warnings
		LC80 at 100.00%	1.35	N.G.
		LC81 at 100.00%	1.35	N.G.
		LC82 at 100.00%	1.35	N.G.
		LC83 at 100.00%	1.35	N.G.
		LC84 at 100.00%	1.35	N.G.
		LC85 at 100.00%	1.35	N.G.
		LC86 at 100.00%	1.36	N.G.
		LC87 at 100.00%	1.36	N.G.
		LC88 at 100.00%	1.36	N.G. Eq. H2-1
		LC9 at 36.46%	0.67	With warnings
		W180 at 36.46%	0.79	With warnings
		W210 at 36.46%	0.62	With warnings
		W240 at 36.46%	0.43	With warnings
		W270 at 62.50%	0.38	With warnings
		W300 at 62.50%	0.54	With warnings
		W330 at 36.46%	0.65	With warnings
		WI180 at 36.46%	0.30	With warnings
		WI210 at 36.46%	0.21	With warnings
		WI240 at 36.46%	0.19	With warnings
		WI270 at 62.50%	0.14	With warnings
		WI300 at 62.50%	0.20	With warnings
		WI330 at 62.50%	0.23	With warnings
		WL180 at 36.46%	0.07	With warnings
		WL210 at 36.46%	0.05	With warnings
		WL240 at 36.46%	0.05	With warnings
		WL270 at 62.50%	0.04	With warnings
		WL300 at 62.50%	0.06	With warnings
		WL330 at 62.50%	0.06	With warnings
L 2X2X3_16	**30**	LC1 at 89.58%	0.80	OK
		LC10 at 89.58%	0.79	OK
		LC11 at 89.58%	0.78	OK
		LC12 at 89.58%	0.77	OK
		LC13 at 89.58%	0.59	OK
		LC14 at 89.58%	0.63	OK
		LC15 at 89.58%	0.65	OK

LC16 at 89.58%	0.67	OK
LC17 at 89.58%	0.68	OK
LC18 at 89.58%	0.69	OK
LC19 at 89.58%	0.66	OK
LC2 at 89.58%	0.84	OK
LC20 at 89.58%	0.62	OK
LC21 at 10.42%	0.62	OK
LC22 at 89.58%	0.58	OK
LC23 at 89.58%	0.57	OK
LC24 at 89.58%	0.56	OK
LC25 at 89.58%	1.33	N.G.
LC26 at 89.58%	1.34	N.G.
LC27 at 89.58%	1.34	N.G.
LC28 at 89.58%	1.35	N.G.
LC29 at 89.58%	1.35	N.G.
LC3 at 89.58%	0.86	OK
LC30 at 89.58%	1.35	N.G.
LC31 at 89.58%	1.34	N.G.
LC32 at 89.58%	1.33	N.G.
LC33 at 89.58%	1.33	N.G.
LC34 at 89.58%	1.32	N.G.
LC35 at 89.58%	1.32	N.G.
LC36 at 89.58%	1.32	N.G.
LC37 at 89.58%	0.63	OK
LC38 at 89.58%	0.73	OK
LC39 at 89.58%	1.18	N.G.
LC4 at 89.58%	0.88	OK
LC40 at 89.58%	1.60	N.G.
LC41 at 89.58%	0.74	OK
LC42 at 89.58%	0.74	OK
LC43 at 89.58%	0.74	OK
LC44 at 89.58%	0.74	OK
LC45 at 89.58%	0.74	OK
LC46 at 89.58%	0.74	OK
LC47 at 89.58%	0.74	OK
LC48 at 89.58%	0.74	OK
LC49 at 89.58%	0.74	OK
LC5 at 89.58%	0.89	OK
LC50 at 89.58%	0.73	OK
LC51 at 89.58%	0.73	OK
LC52 at 89.58%	0.73	OK
LC53 at 89.58%	1.04	N.G.
LC54 at 89.58%	1.05	N.G.
LC55 at 89.58%	1.05	N.G.
LC56 at 89.58%	1.05	N.G.
LC57 at 89.58%	1.05	N.G.
LC58 at 89.58%	1.05	N.G.
LC59 at 89.58%	1.05	N.G.
LC6 at 89.58%	0.90	OK
LC60 at 89.58%	1.05	N.G.
LC61 at 89.58%	1.05	N.G.
LC62 at 89.58%	1.04	N.G.
LC63 at 89.58%	1.04	N.G.
LC64 at 89.58%	1.04	N.G.
LC65 at 89.58%	1.50	N.G.
LC66 at 89.58%	1.50	N.G.
LC67 at 89.58%	1.50	N.G.
LC68 at 89.58%	1.50	N.G.
LC69 at 89.58%	1.51	N.G.
LC7 at 89.58%	0.87	OK
LC70 at 89.58%	1.51	N.G.
LC71 at 89.58%	1.50	N.G.
LC72 at 89.58%	1.50	N.G.
LC73 at 89.58%	1.50	N.G.

	LC74 at 89.58%	1.50	N.G.	
	LC75 at 89.58%	1.50	N.G.	
	LC76 at 89.58%	1.50	N.G.	
	LC77 at 89.58%	1.81	N.G.	
	LC78 at 89.58%	1.82	N.G.	
	LC79 at 89.58%	1.82	N.G.	
	LC8 at 89.58%	0.83	OK	
	LC80 at 89.58%	1.82	N.G.	
	LC81 at 89.58%	**1.82**	**N.G.**	Sec. F1
	LC82 at 89.58%	1.82	N.G.	
	LC83 at 89.58%	1.82	N.G.	
	LC84 at 89.58%	1.81	N.G.	
	LC85 at 89.58%	1.81	N.G.	
	LC86 at 89.58%	1.81	N.G.	
	LC87 at 89.58%	1.81	N.G.	
	LC88 at 89.58%	1.81	N.G.	
	LC9 at 89.58%	0.82	OK	
	W180 at 91.67%	0.17	OK	
	W210 at 8.33%	0.06	OK	
	W240 at 91.67%	0.11	OK	
	W270 at 91.67%	0.22	OK	
	W300 at 91.67%	0.27	OK	
	W330 at 91.67%	0.32	OK	
	WI180 at 91.67%	0.05	OK	
	WI210 at 91.67%	0.03	OK	
	WI240 at 91.67%	0.03	OK	
	WI270 at 91.67%	0.08	OK	
	WI300 at 91.67%	0.10	OK	
	WI330 at 91.67%	0.11	OK	
	WL180 at 91.67%	0.01	OK	
	WL210 at 91.67%	0.01	OK	
	WL240 at 91.67%	0.01	OK	
	WL270 at 91.67%	0.02	OK	
	WL300 at 91.67%	0.03	OK	
	WL330 at 91.67%	0.03	OK	
31	LC1 at 89.58%	0.91	OK	
	LC10 at 89.58%	0.80	OK	
	LC11 at 89.58%	0.85	OK	
	LC12 at 89.58%	0.88	OK	
	LC13 at 89.58%	0.71	OK	
	LC14 at 89.58%	0.69	OK	
	LC15 at 89.58%	0.66	OK	
	LC16 at 89.58%	0.60	OK	
	LC17 at 100.00%	0.66	OK	
	LC18 at 100.00%	0.74	OK	
	LC19 at 100.00%	0.75	OK	
	LC2 at 89.58%	0.89	OK	
	LC20 at 100.00%	0.66	OK	
	LC21 at 10.42%	0.59	OK	
	LC22 at 10.42%	0.60	OK	
	LC23 at 89.58%	0.65	OK	
	LC24 at 89.58%	0.68	OK	
	LC25 at 89.58%	1.28	N.G.	
	LC26 at 89.58%	1.27	N.G.	
	LC27 at 89.58%	1.27	N.G.	
	LC28 at 89.58%	1.25	N.G.	
	LC29 at 89.58%	1.24	N.G.	
	LC3 at 89.58%	0.86	OK	
	LC30 at 89.58%	1.24	N.G.	
	LC31 at 89.58%	1.23	N.G.	
	LC32 at 89.58%	1.24	N.G.	
	LC33 at 89.58%	1.24	N.G.	
	LC34 at 89.58%	1.26	N.G.	

LC35 at 89.58%	1.27	N.G.	
LC36 at 89.58%	1.27	N.G.	
LC37 at 89.58%	0.60	OK	
LC38 at 89.58%	1.61	N.G.	
LC39 at 89.58%	1.14	N.G.	
LC4 at 89.58%	0.80	OK	
LC40 at 89.58%	0.68	OK	
LC41 at 89.58%	**1.81**	**N.G.**	Sec. F1
LC42 at 89.58%	1.80	N.G.	
LC43 at 89.58%	1.80	N.G.	
LC44 at 89.58%	1.80	N.G.	
LC45 at 89.58%	1.80	N.G.	
LC46 at 89.58%	1.80	N.G.	
LC47 at 89.58%	1.79	N.G.	
LC48 at 89.58%	1.80	N.G.	
LC49 at 89.58%	1.80	N.G.	
LC5 at 100.00%	0.82	OK	
LC50 at 89.58%	1.80	N.G.	
LC51 at 89.58%	1.80	N.G.	
LC52 at 89.58%	1.80	N.G.	
LC53 at 89.58%	1.48	N.G.	
LC54 at 89.58%	1.48	N.G.	
LC55 at 89.58%	1.48	N.G.	
LC56 at 89.58%	1.48	N.G.	
LC57 at 89.58%	1.47	N.G.	
LC58 at 89.58%	1.47	N.G.	
LC59 at 89.58%	1.47	N.G.	
LC6 at 100.00%	0.89	OK	
LC60 at 89.58%	1.47	N.G.	
LC61 at 89.58%	1.47	N.G.	
LC62 at 89.58%	1.48	N.G.	
LC63 at 89.58%	1.48	N.G.	
LC64 at 89.58%	1.48	N.G.	
LC65 at 89.58%	1.02	N.G.	
LC66 at 89.58%	1.02	N.G.	
LC67 at 89.58%	1.02	N.G.	
LC68 at 89.58%	1.01	N.G.	
LC69 at 89.58%	1.01	N.G.	
LC7 at 100.00%	0.91	OK	
LC70 at 89.58%	1.01	N.G.	
LC71 at 89.58%	1.01	N.G.	
LC72 at 89.58%	1.01	N.G.	
LC73 at 89.58%	1.01	N.G.	
LC74 at 89.58%	1.01	N.G.	
LC75 at 89.58%	1.02	N.G.	
LC76 at 89.58%	1.02	N.G.	
LC77 at 89.58%	0.66	OK	
LC78 at 89.58%	0.66	OK	
LC79 at 89.58%	0.66	OK	
LC8 at 100.00%	0.82	OK	
LC80 at 89.58%	0.66	OK	
LC81 at 89.58%	0.65	OK	
LC82 at 89.58%	0.65	OK	
LC83 at 89.58%	0.65	OK	
LC84 at 89.58%	0.65	OK	
LC85 at 89.58%	0.65	OK	
LC86 at 89.58%	0.66	OK	
LC87 at 89.58%	0.66	OK	
LC88 at 89.58%	0.66	OK	
LC9 at 10.42%	0.77	OK	
W180 at 8.33%	0.31	OK	
W210 at 8.33%	0.33	OK	
W240 at 8.33%	0.26	OK	
W270 at 8.33%	0.17	OK	

		W300 at 0.00%	0.18	OK	
		W330 at 0.00%	0.23	OK	
		WI180 at 0.00%	0.11	OK	
		WI210 at 0.00%	0.11	OK	
		WI240 at 0.00%	0.10	OK	
		WI270 at 0.00%	0.06	OK	
		WI300 at 0.00%	0.07	OK	
		WI330 at 0.00%	0.08	OK	
		WL180 at 0.00%	0.03	OK	
		WL210 at 0.00%	0.03	OK	
		WL240 at 0.00%	0.03	OK	
		WL270 at 0.00%	0.02	OK	
		WL300 at 0.00%	0.02	OK	
		WL330 at 0.00%	0.02	OK	
LU 3X2X1_4	**1**	LC1 at 100.00%	0.32	OK	
		LC10 at 100.00%	0.25	OK	
		LC11 at 100.00%	0.36	OK	
		LC12 at 100.00%	**0.39**	**OK**	Eq. H2-1
		LC13 at 100.00%	0.29	OK	
		LC14 at 93.75%	0.15	OK	
		LC15 at 0.00%	0.12	OK	
		LC16 at 100.00%	0.15	OK	
		LC17 at 100.00%	0.19	OK	
		LC18 at 100.00%	0.21	OK	
		LC19 at 100.00%	0.11	OK	
		LC2 at 100.00%	0.18	OK	
		LC20 at 100.00%	0.05	OK	
		LC21 at 100.00%	0.09	OK	
		LC22 at 100.00%	0.22	OK	
		LC23 at 100.00%	0.33	OK	
		LC24 at 100.00%	0.36	OK	
		LC25 at 100.00%	0.24	OK	
		LC26 at 100.00%	0.20	OK	
		LC27 at 100.00%	0.20	OK	
		LC28 at 100.00%	0.16	OK	
		LC29 at 87.50%	0.13	OK	
		LC3 at 0.00%	0.14	OK	
		LC30 at 62.50%	0.12	OK	
		LC31 at 100.00%	0.14	OK	
		LC32 at 100.00%	0.18	OK	
		LC33 at 100.00%	0.18	OK	
		LC34 at 100.00%	0.22	OK	
		LC35 at 100.00%	0.24	OK	
		LC36 at 100.00%	0.25	OK	
		LC37 at 100.00%	0.09	OK	
		LC38 at 0.00%	0.19	OK	
		LC39 at 100.00%	0.16	OK	
		LC4 at 100.00%	0.15	OK	
		LC40 at 100.00%	0.25	OK	
		LC41 at 0.00%	0.24	OK	
		LC42 at 0.00%	0.24	OK	
		LC43 at 0.00%	0.24	OK	
		LC44 at 0.00%	0.25	OK	
		LC45 at 0.00%	0.25	OK	
		LC46 at 0.00%	0.25	OK	Eq. H2-1
		LC47 at 0.00%	0.24	OK	
		LC48 at 0.00%	0.23	OK	
		LC49 at 0.00%	0.24	OK	
		LC5 at 100.00%	0.19	OK	
		LC50 at 0.00%	0.23	OK	
		LC51 at 0.00%	0.23	OK	
		LC52 at 0.00%	0.23	OK	
		LC53 at 12.50%	0.15	OK	

	LC54 at 0.00%	0.15	OK	
	LC55 at 0.00%	0.15	OK	
	LC56 at 0.00%	0.15	OK	
	LC57 at 0.00%	0.15	OK	
	LC58 at 0.00%	0.15	OK	
	LC59 at 0.00%	0.14	OK	
	LC6 at 100.00%	0.21	OK	
	LC60 at 0.00%	0.14	OK	
	LC61 at 0.00%	0.14	OK	
	LC62 at 12.50%	0.15	OK	
	LC63 at 37.50%	0.15	OK	
	LC64 at 43.75%	0.15	OK	
	LC65 at 100.00%	0.23	OK	
	LC66 at 100.00%	0.22	OK	
	LC67 at 100.00%	0.22	OK	
	LC68 at 100.00%	0.21	OK	
	LC69 at 100.00%	0.20	OK	
	LC7 at 100.00%	0.10	OK	
	LC70 at 100.00%	0.20	OK	
	LC71 at 100.00%	0.20	OK	
	LC72 at 100.00%	0.21	OK	
	LC73 at 100.00%	0.21	OK	
	LC74 at 100.00%	0.22	OK	
	LC75 at 100.00%	0.23	OK	
	LC76 at 100.00%	0.23	OK	
	LC77 at 100.00%	0.30	OK	
	LC78 at 100.00%	0.29	OK	
	LC79 at 100.00%	0.29	OK	
	LC8 at 100.00%	0.07	OK	
	LC80 at 100.00%	0.28	OK	
	LC81 at 100.00%	0.27	OK	
	LC82 at 100.00%	0.27	OK	
	LC83 at 100.00%	0.27	OK	
	LC84 at 100.00%	0.28	OK	
	LC85 at 100.00%	0.28	OK	
	LC86 at 100.00%	0.29	OK	
	LC87 at 100.00%	0.30	OK	
	LC88 at 100.00%	0.30	OK	
	LC9 at 100.00%	0.11	OK	
	W180 at 100.00%	0.12	OK	
	W210 at 100.00%	0.04	OK	
	W240 at 100.00%	0.05	OK	
	W270 at 100.00%	0.09	OK	
	W300 at 100.00%	0.15	OK	
	W330 at 100.00%	0.17	OK	
	WI180 at 100.00%	0.05	OK	
	WI210 at 100.00%	0.02	OK	
	WI240 at 100.00%	0.02	OK	
	WI270 at 100.00%	0.03	OK	
	WI300 at 100.00%	0.06	OK	
	WI330 at 100.00%	0.07	OK	
	WL180 at 100.00%	0.01	OK	
	WL210 at 100.00%	0.00	OK	
	WL240 at 100.00%	0.00	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.02	OK	
	WL330 at 100.00%	0.02	OK	
2	LC1 at 100.00%	**0.70**	**OK**	Eq. H2-1
	LC10 at 0.00%	0.41	OK	
	LC11 at 100.00%	0.42	OK	
	LC12 at 100.00%	0.58	OK	
	LC13 at 100.00%	0.70	OK	
	LC14 at 100.00%	0.57	OK	

LC15 at 100.00%	0.41	OK	
LC16 at 0.00%	0.22	OK	
LC17 at 100.00%	0.37	OK	
LC18 at 100.00%	0.53	OK	
LC19 at 100.00%	0.65	OK	
LC2 at 100.00%	0.58	OK	
LC20 at 100.00%	0.52	OK	
LC21 at 0.00%	0.42	OK	
LC22 at 0.00%	0.33	OK	
LC23 at 100.00%	0.41	OK	
LC24 at 100.00%	0.57	OK	
LC25 at 0.00%	0.46	OK	
LC26 at 0.00%	0.45	OK	
LC27 at 0.00%	0.45	OK	
LC28 at 0.00%	0.47	OK	
LC29 at 0.00%	0.49	OK	
LC3 at 100.00%	0.42	OK	
LC30 at 0.00%	0.49	OK	
LC31 at 0.00%	0.52	OK	
LC32 at 0.00%	0.53	OK	
LC33 at 0.00%	0.52	OK	
LC34 at 0.00%	0.51	OK	
LC35 at 0.00%	0.49	OK	
LC36 at 0.00%	0.49	OK	
LC37 at 0.00%	0.23	OK	
LC38 at 0.00%	0.53	OK	
LC39 at 0.00%	0.45	OK	
LC4 at 0.00%	0.24	OK	
LC40 at 0.00%	0.35	OK	
LC41 at 0.00%	0.56	OK	
LC42 at 0.00%	0.56	OK	
LC43 at 0.00%	0.56	OK	
LC44 at 0.00%	0.56	OK	
LC45 at 0.00%	0.57	OK	
LC46 at 0.00%	0.57	OK	
LC47 at 0.00%	0.58	OK	
LC48 at 0.00%	0.58	OK	Eq. H2-1
LC49 at 0.00%	0.58	OK	
LC5 at 100.00%	0.36	OK	
LC50 at 0.00%	0.58	OK	
LC51 at 0.00%	0.57	OK	
LC52 at 0.00%	0.57	OK	
LC53 at 0.00%	0.54	OK	
LC54 at 0.00%	0.53	OK	
LC55 at 0.00%	0.53	OK	
LC56 at 0.00%	0.54	OK	
LC57 at 0.00%	0.54	OK	
LC58 at 0.00%	0.54	OK	
LC59 at 0.00%	0.55	OK	
LC6 at 100.00%	0.52	OK	
LC60 at 0.00%	0.55	OK	
LC61 at 0.00%	0.55	OK	
LC62 at 0.00%	0.55	OK	
LC63 at 0.00%	0.54	OK	
LC64 at 0.00%	0.54	OK	
LC65 at 0.00%	0.40	OK	
LC66 at 0.00%	0.40	OK	
LC67 at 0.00%	0.40	OK	
LC68 at 0.00%	0.40	OK	
LC69 at 0.00%	0.41	OK	
LC7 at 100.00%	0.64	OK	
LC70 at 0.00%	0.41	OK	
LC71 at 0.00%	0.42	OK	
LC72 at 0.00%	0.42	OK	

	LC73 at 0.00%	0.42	OK	
	LC74 at 0.00%	0.42	OK	
	LC75 at 0.00%	0.41	OK	
	LC76 at 0.00%	0.41	OK	
	LC77 at 0.00%	0.36	OK	
	LC78 at 0.00%	0.35	OK	
	LC79 at 0.00%	0.36	OK	
	LC8 at 0.00%	0.53	OK	
	LC80 at 0.00%	0.36	OK	
	LC81 at 0.00%	0.37	OK	
	LC82 at 0.00%	0.37	OK	
	LC83 at 0.00%	0.38	OK	
	LC84 at 0.00%	0.38	OK	
	LC85 at 0.00%	0.38	OK	
	LC86 at 0.00%	0.37	OK	
	LC87 at 0.00%	0.36	OK	
	LC88 at 0.00%	0.37	OK	
	LC9 at 0.00%	0.49	OK	
	W180 at 100.00%	0.42	OK	
	W210 at 100.00%	0.34	OK	
	W240 at 100.00%	0.24	OK	
	W270 at 0.00%	0.10	OK	
	W300 at 100.00%	0.25	OK	
	W330 at 100.00%	0.35	OK	
	WI180 at 100.00%	0.16	OK	
	WI210 at 100.00%	0.12	OK	
	WI240 at 100.00%	0.11	OK	
	WI270 at 0.00%	0.04	OK	
	WI300 at 100.00%	0.11	OK	
	WI330 at 100.00%	0.12	OK	
	WL180 at 100.00%	0.04	OK	
	WL210 at 100.00%	0.03	OK	
	WL240 at 100.00%	0.03	OK	
	WL270 at 0.00%	0.01	OK	
	WL300 at 100.00%	0.03	OK	
	WL330 at 100.00%	0.03	OK	
3	LC1 at 100.00%	0.55	OK	
	LC10 at 0.00%	0.45	OK	
	LC11 at 100.00%	0.60	OK	
	LC12 at 100.00%	0.71	OK	Eq. H2-1
	LC13 at 100.00%	0.55	OK	
	LC14 at 0.00%	0.36	OK	
	LC15 at 0.00%	0.37	OK	
	LC16 at 0.00%	0.41	OK	
	LC17 at 100.00%	0.59	OK	
	LC18 at 100.00%	0.70	OK	Eq. H2-1
	LC19 at 100.00%	0.54	OK	
	LC2 at 0.00%	0.47	OK	
	LC20 at 0.00%	0.32	OK	
	LC21 at 0.00%	0.31	OK	
	LC22 at 0.00%	0.33	OK	
	LC23 at 100.00%	0.60	OK	
	LC24 at 100.00%	0.71	OK	
	LC25 at 0.00%	0.73	OK	
	LC26 at 0.00%	0.72	OK	
	LC27 at 0.00%	0.72	OK	
	LC28 at 0.00%	0.72	OK	
	LC29 at 0.00%	0.71	OK	
	LC3 at 0.00%	0.48	OK	
	LC30 at 0.00%	0.71	OK	
	LC31 at 0.00%	0.71	OK	
	LC32 at 0.00%	0.71	OK	
	LC33 at 0.00%	0.71	OK	

LC34 at 0.00%	0.72	OK	
LC35 at 0.00%	0.72	OK	
LC36 at 0.00%	0.73	OK	
LC37 at 0.00%	0.34	OK	
LC38 at 0.00%	0.41	OK	
LC39 at 0.00%	0.63	OK	
LC4 at 0.00%	0.47	OK	
LC40 at 0.00%	0.86	OK	
LC41 at 0.00%	0.43	OK	
LC42 at 0.00%	0.43	OK	
LC43 at 0.00%	0.43	OK	
LC44 at 0.00%	0.43	OK	
LC45 at 0.00%	0.43	OK	
LC46 at 0.00%	0.43	OK	
LC47 at 0.00%	0.42	OK	
LC48 at 0.00%	0.42	OK	
LC49 at 0.00%	0.42	OK	
LC5 at 100.00%	0.59	OK	
LC50 at 0.00%	0.42	OK	
LC51 at 0.00%	0.42	OK	
LC52 at 0.00%	0.42	OK	
LC53 at 0.00%	0.56	OK	
LC54 at 0.00%	0.56	OK	
LC55 at 0.00%	0.56	OK	
LC56 at 0.00%	0.56	OK	
LC57 at 0.00%	0.56	OK	
LC58 at 0.00%	0.56	OK	
LC59 at 0.00%	0.56	OK	
LC6 at 100.00%	0.70	OK	
LC60 at 0.00%	0.56	OK	
LC61 at 0.00%	0.56	OK	
LC62 at 0.00%	0.56	OK	
LC63 at 0.00%	0.56	OK	
LC64 at 0.00%	0.56	OK	
LC65 at 0.00%	0.80	OK	
LC66 at 0.00%	0.80	OK	
LC67 at 0.00%	0.80	OK	
LC68 at 0.00%	0.80	OK	
LC69 at 0.00%	0.80	OK	
LC7 at 100.00%	0.54	OK	
LC70 at 0.00%	0.80	OK	
LC71 at 0.00%	0.80	OK	
LC72 at 0.00%	0.80	OK	
LC73 at 0.00%	0.80	OK	
LC74 at 0.00%	0.80	OK	
LC75 at 0.00%	0.80	OK	
LC76 at 0.00%	0.80	OK	
LC77 at 0.00%	**0.97**	**OK**	Eq. H2-1
LC78 at 0.00%	0.97	OK	
LC79 at 0.00%	0.97	OK	
LC8 at 0.00%	0.43	OK	
LC80 at 0.00%	0.97	OK	
LC81 at 0.00%	0.97	OK	
LC82 at 0.00%	0.97	OK	
LC83 at 0.00%	0.97	OK	
LC84 at 0.00%	0.97	OK	
LC85 at 0.00%	0.97	OK	
LC86 at 0.00%	0.97	OK	
LC87 at 0.00%	0.97	OK	
LC88 at 0.00%	0.97	OK	
LC9 at 0.00%	0.42	OK	
W180 at 100.00%	0.34	OK	
W210 at 100.00%	0.11	OK	
W240 at 0.00%	0.04	OK	

	W270 at 100.00%	0.20	OK	
	W300 at 100.00%	0.37	OK	
	W330 at 100.00%	0.44	OK	
	WI180 at 100.00%	0.13	OK	
	WI210 at 100.00%	0.03	OK	
	WI240 at 100.00%	0.03	OK	
	WI270 at 100.00%	0.07	OK	
	WI300 at 100.00%	0.14	OK	
	WI330 at 100.00%	0.16	OK	
	WL180 at 100.00%	0.03	OK	
	WL210 at 100.00%	0.01	OK	
	WL240 at 100.00%	0.01	OK	
	WL270 at 100.00%	0.02	OK	
	WL300 at 100.00%	0.04	OK	
	WL330 at 100.00%	0.04	OK	
8	LC1 at 0.00%	0.34	OK	
	LC10 at 0.00%	0.29	OK	
	LC11 at 0.00%	0.43	OK	
	LC12 at 0.00%	0.48	OK	Eq. H2-1
	LC13 at 0.00%	0.33	OK	
	LC14 at 0.00%	0.09	OK	
	LC15 at 100.00%	0.09	OK	
	LC16 at 100.00%	0.30	OK	
	LC17 at 100.00%	0.46	OK	
	LC18 at 100.00%	0.52	OK	
	LC19 at 100.00%	0.39	OK	
	LC2 at 0.00%	0.10	OK	
	LC20 at 100.00%	0.14	OK	
	LC21 at 0.00%	0.09	OK	
	LC22 at 0.00%	0.28	OK	
	LC23 at 0.00%	0.41	OK	
	LC24 at 0.00%	0.46	OK	
	LC25 at 0.00%	0.16	OK	
	LC26 at 100.00%	0.15	OK	
	LC27 at 100.00%	0.15	OK	
	LC28 at 100.00%	0.20	OK	
	LC29 at 100.00%	0.24	OK	
	LC3 at 100.00%	0.11	OK	
	LC30 at 100.00%	0.25	OK	
	LC31 at 100.00%	0.22	OK	
	LC32 at 100.00%	0.15	OK	
	LC33 at 100.00%	0.16	OK	
	LC34 at 0.00%	0.15	OK	
	LC35 at 0.00%	0.18	OK	
	LC36 at 0.00%	0.19	OK	
	LC37 at 100.00%	0.07	OK	
	LC38 at 0.00%	0.34	OK	
	LC39 at 100.00%	0.11	OK	
	LC4 at 100.00%	0.32	OK	
	LC40 at 100.00%	0.33	OK	
	LC41 at 0.00%	0.41	OK	
	LC42 at 0.00%	0.39	OK	
	LC43 at 0.00%	0.39	OK	
	LC44 at 0.00%	0.38	OK	
	LC45 at 0.00%	0.37	OK	
	LC46 at 0.00%	0.37	OK	
	LC47 at 0.00%	0.38	OK	
	LC48 at 0.00%	0.39	OK	
	LC49 at 0.00%	0.39	OK	
	LC5 at 100.00%	0.48	OK	
	LC50 at 0.00%	0.41	OK	
	LC51 at 0.00%	0.42	OK	
	LC52 at 0.00%	0.42	OK	

	LC53 at 0.00%	0.21	OK	
	LC54 at 0.00%	0.19	OK	
	LC55 at 0.00%	0.19	OK	
	LC56 at 0.00%	0.18	OK	
	LC57 at 0.00%	0.17	OK	
	LC58 at 0.00%	0.17	OK	
	LC59 at 0.00%	0.18	OK	
	LC6 at 100.00%	**0.54**	**OK**	Eq. H2-1
	LC60 at 0.00%	0.19	OK	
	LC61 at 0.00%	0.19	OK	
	LC62 at 0.00%	0.21	OK	
	LC63 at 0.00%	0.22	OK	
	LC64 at 0.00%	0.22	OK	
	LC65 at 100.00%	0.19	OK	
	LC66 at 100.00%	0.21	OK	
	LC67 at 100.00%	0.21	OK	
	LC68 at 100.00%	0.23	OK	
	LC69 at 100.00%	0.24	OK	
	LC7 at 100.00%	0.41	OK	
	LC70 at 100.00%	0.24	OK	
	LC71 at 100.00%	0.23	OK	
	LC72 at 100.00%	0.21	OK	
	LC73 at 100.00%	0.21	OK	
	LC74 at 100.00%	0.20	OK	
	LC75 at 100.00%	0.19	OK	
	LC76 at 100.00%	0.19	OK	
	LC77 at 100.00%	0.38	OK	
	LC78 at 100.00%	0.40	OK	
	LC79 at 100.00%	0.40	OK	
	LC8 at 100.00%	0.16	OK	
	LC80 at 100.00%	0.41	OK	
	LC81 at 100.00%	0.42	OK	
	LC82 at 100.00%	0.42	OK	
	LC83 at 100.00%	0.42	OK	
	LC84 at 100.00%	0.40	OK	
	LC85 at 100.00%	0.40	OK	
	LC86 at 100.00%	0.39	OK	
	LC87 at 100.00%	0.37	OK	
	LC88 at 100.00%	0.37	OK	
	LC9 at 0.00%	0.11	OK	
	W180 at 100.00%	0.20	OK	
	W210 at 100.00%	0.04	OK	
	W240 at 0.00%	0.03	OK	
	W270 at 100.00%	0.15	OK	
	W300 at 100.00%	0.25	OK	
	W330 at 100.00%	0.29	OK	
	WI180 at 100.00%	0.08	OK	
	WI210 at 100.00%	0.01	OK	
	WI240 at 100.00%	0.01	OK	
	WI270 at 100.00%	0.06	OK	
	WI300 at 100.00%	0.10	OK	
	WI330 at 100.00%	0.11	OK	
	WL180 at 100.00%	0.02	OK	
	WL210 at 100.00%	0.00	OK	
	WL240 at 100.00%	0.00	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.03	OK	
	WL330 at 100.00%	0.03	OK	
9	LC1 at 0.00%	0.75	OK	
	LC10 at 0.00%	0.44	OK	
	LC11 at 0.00%	0.61	OK	
	LC12 at 0.00%	0.70	OK	
	LC13 at 100.00%	0.66	OK	

LC14 at 0.00%	0.56	OK	
LC15 at 0.00%	0.47	OK	
LC16 at 0.00%	0.32	OK	
LC17 at 100.00%	0.37	OK	
LC18 at 100.00%	0.53	OK	
LC19 at 100.00%	0.64	OK	Eq. H2-1
LC2 at 0.00%	0.66	OK	
LC20 at 100.00%	0.51	OK	
LC21 at 100.00%	0.36	OK	
LC22 at 0.00%	0.34	OK	
LC23 at 0.00%	0.51	OK	
LC24 at 0.00%	0.60	OK	
LC25 at 0.00%	0.71	OK	
LC26 at 0.00%	0.68	OK	
LC27 at 0.00%	0.67	OK	
LC28 at 0.00%	0.62	OK	
LC29 at 0.00%	0.59	OK	
LC3 at 0.00%	0.57	OK	
LC30 at 0.00%	0.58	OK	
LC31 at 0.00%	0.57	OK	
LC32 at 0.00%	0.60	OK	
LC33 at 0.00%	0.60	OK	
LC34 at 0.00%	0.64	OK	
LC35 at 0.00%	0.68	OK	
LC36 at 0.00%	0.69	OK	
LC37 at 0.00%	0.30	OK	
LC38 at 0.00%	0.81	OK	
LC39 at 0.00%	0.58	OK	
LC4 at 0.00%	0.38	OK	
LC40 at 0.00%	0.36	OK	
LC41 at 0.00%	**0.91**	**OK**	Eq. H2-1
LC42 at 0.00%	0.90	OK	
LC43 at 0.00%	0.90	OK	
LC44 at 0.00%	0.89	OK	
LC45 at 0.00%	0.88	OK	
LC46 at 0.00%	0.88	OK	
LC47 at 0.00%	0.87	OK	
LC48 at 0.00%	0.88	OK	
LC49 at 0.00%	0.88	OK	
LC5 at 100.00%	0.37	OK	
LC50 at 0.00%	0.89	OK	
LC51 at 0.00%	0.90	OK	
LC52 at 0.00%	0.90	OK	
LC53 at 0.00%	0.76	OK	
LC54 at 0.00%	0.75	OK	
LC55 at 0.00%	0.75	OK	
LC56 at 0.00%	0.74	OK	
LC57 at 0.00%	0.73	OK	
LC58 at 0.00%	0.73	OK	
LC59 at 0.00%	0.73	OK	
LC6 at 100.00%	0.53	OK	
LC60 at 0.00%	0.73	OK	
LC61 at 0.00%	0.73	OK	
LC62 at 0.00%	0.74	OK	
LC63 at 0.00%	0.76	OK	
LC64 at 0.00%	0.76	OK	
LC65 at 0.00%	0.53	OK	
LC66 at 0.00%	0.52	OK	
LC67 at 0.00%	0.52	OK	
LC68 at 0.00%	0.51	OK	
LC69 at 0.00%	0.50	OK	
LC7 at 100.00%	0.64	OK	
LC70 at 0.00%	0.50	OK	
LC71 at 0.00%	0.50	OK	

	LC72 at 0.00%	0.50	OK
	LC73 at 0.00%	0.50	OK
	LC74 at 0.00%	0.51	OK
	LC75 at 0.00%	0.53	OK
	LC76 at 0.00%	0.53	OK
	LC77 at 0.00%	0.39	OK
	LC78 at 0.00%	0.40	OK
	LC79 at 0.00%	0.39	OK
	LC8 at 100.00%	0.51	OK
	LC80 at 0.00%	0.39	OK
	LC81 at 0.00%	0.39	OK
	LC82 at 0.00%	0.39	OK
	LC83 at 0.00%	0.38	OK
	LC84 at 0.00%	0.37	OK
	LC85 at 0.00%	0.37	OK
	LC86 at 0.00%	0.38	OK
	LC87 at 0.00%	0.38	OK
	LC88 at 0.00%	0.38	OK
	LC9 at 100.00%	0.36	OK
	W180 at 100.00%	0.40	OK
	W210 at 100.00%	0.32	OK
	W240 at 100.00%	0.23	OK
	W270 at 0.00%	0.08	OK
	W300 at 100.00%	0.24	OK
	W330 at 100.00%	0.34	OK
	WI180 at 100.00%	0.15	OK
	WI210 at 100.00%	0.11	OK
	WI240 at 100.00%	0.10	OK
	WI270 at 0.00%	0.03	OK
	WI300 at 100.00%	0.11	OK
	WI330 at 100.00%	0.12	OK
	WL180 at 100.00%	0.04	OK
	WL210 at 100.00%	0.03	OK
	WL240 at 100.00%	0.03	OK
	WL270 at 0.00%	0.01	OK
	WL300 at 100.00%	0.03	OK
	WL330 at 100.00%	0.03	OK
10	LC1 at 100.00%	0.56	OK
	LC10 at 0.00%	0.50	OK
	LC11 at 100.00%	0.65	OK
	LC12 at 100.00%	0.76	OK
	LC13 at 100.00%	0.56	OK
	LC14 at 0.00%	0.26	OK
	LC15 at 0.00%	0.21	OK
	LC16 at 100.00%	0.39	OK
	LC17 at 100.00%	0.68	OK
	LC18 at 100.00%	0.79	OK
	LC19 at 100.00%	0.59	OK
	LC2 at 0.00%	0.34	OK
	LC20 at 0.00%	0.23	OK
	LC21 at 0.00%	0.28	OK
	LC22 at 0.00%	0.42	OK
	LC23 at 100.00%	0.65	OK
	LC24 at 100.00%	0.77	OK
	LC25 at 0.00%	0.56	OK
	LC26 at 0.00%	0.51	OK
	LC27 at 0.00%	0.52	OK
	LC28 at 0.00%	0.48	OK
	LC29 at 0.00%	0.46	OK
	LC3 at 0.00%	0.29	OK
	LC30 at 0.00%	0.46	OK
	LC31 at 0.00%	0.48	OK
	LC32 at 0.00%	0.52	OK

LC33 at 0.00%	0.52	OK	
LC34 at 0.00%	0.55	OK	
LC35 at 0.00%	0.57	OK	
LC36 at 0.00%	0.58	OK	
LC37 at 0.00%	0.24	OK	
LC38 at 0.00%	0.44	OK	
LC39 at 0.00%	0.47	OK	
LC4 at 100.00%	0.40	OK	
LC40 at 0.00%	0.50	OK	
LC41 at 0.00%	0.49	OK	
LC42 at 0.00%	0.48	OK	
LC43 at 0.00%	0.48	OK	
LC44 at 0.00%	0.47	OK	
LC45 at 0.00%	0.46	OK	
LC46 at 0.00%	0.46	OK	
LC47 at 0.00%	0.47	OK	
LC48 at 0.00%	0.48	OK	
LC49 at 0.00%	0.48	OK	
LC5 at 100.00%	0.68	OK	
LC50 at 0.00%	0.49	OK	
LC51 at 0.00%	0.50	OK	
LC52 at 0.00%	0.50	OK	
LC53 at 0.00%	0.47	OK	
LC54 at 0.00%	0.45	OK	
LC55 at 0.00%	0.45	OK	
LC56 at 0.00%	0.45	OK	
LC57 at 0.00%	0.44	OK	
LC58 at 0.00%	0.44	OK	
LC59 at 0.00%	0.45	OK	
LC6 at 100.00%	**0.80**	**OK**	Eq. H2-1
LC60 at 0.00%	0.46	OK	
LC61 at 0.00%	0.45	OK	
LC62 at 0.00%	0.46	OK	
LC63 at 0.00%	0.47	OK	
LC64 at 0.00%	0.47	OK	
LC65 at 0.00%	0.55	OK	
LC66 at 0.00%	0.54	OK	
LC67 at 0.00%	0.55	OK	
LC68 at 0.00%	0.54	OK	
LC69 at 0.00%	0.53	OK	
LC7 at 100.00%	0.60	OK	
LC70 at 0.00%	0.53	OK	
LC71 at 0.00%	0.54	OK	
LC72 at 0.00%	0.55	OK	
LC73 at 0.00%	0.55	OK	
LC74 at 0.00%	0.55	OK	
LC75 at 0.00%	0.56	OK	
LC76 at 0.00%	0.56	OK	
LC77 at 0.00%	0.55	OK	
LC78 at 0.00%	0.54	OK	
LC79 at 0.00%	0.54	OK	
LC8 at 0.00%	0.31	OK	
LC80 at 0.00%	0.53	OK	
LC81 at 0.00%	0.53	OK	
LC82 at 0.00%	0.53	OK	
LC83 at 0.00%	0.53	OK	
LC84 at 0.00%	0.54	OK	
LC85 at 0.00%	0.54	OK	
LC86 at 0.00%	0.55	OK	
LC87 at 0.00%	0.56	OK	
LC88 at 0.00%	0.56	OK	
LC9 at 0.00%	0.37	OK	
W180 at 100.00%	0.36	OK	
W210 at 100.00%	0.10	OK	

		W240 at 0.00%	0.03	OK	
		W270 at 100.00%	0.24	OK	
		W300 at 100.00%	0.42	OK	
		W330 at 100.00%	0.49	OK	
		WI180 at 100.00%	0.14	OK	
		WI210 at 100.00%	0.02	OK	
		WI240 at 100.00%	0.02	OK	
		WI270 at 100.00%	0.09	OK	
		WI300 at 100.00%	0.16	OK	
		WI330 at 100.00%	0.18	OK	
		WL180 at 100.00%	0.03	OK	
		WL210 at 100.00%	0.01	OK	
		WL240 at 100.00%	0.01	OK	
		WL270 at 100.00%	0.02	OK	
		WL300 at 100.00%	0.04	OK	
		WL330 at 100.00%	0.05	OK	
PIPE 2-1_2x0.203	**51**	LC1 at 0.00%	0.41	OK	
		LC10 at 100.00%	0.27	OK	
		LC11 at 0.00%	0.39	OK	
		LC12 at 0.00%	**0.52**	**OK**	Eq. H3-6
		LC13 at 0.00%	0.38	OK	
		LC14 at 0.00%	0.27	OK	
		LC15 at 0.00%	0.22	OK	
		LC16 at 100.00%	0.29	OK	
		LC17 at 0.00%	0.38	OK	
		LC18 at 0.00%	0.43	OK	
		LC19 at 100.00%	0.31	OK	
		LC2 at 0.00%	0.29	OK	Eq. H1-1b
		LC20 at 100.00%	0.36	OK	
		LC21 at 100.00%	0.31	OK	
		LC22 at 0.00%	0.24	OK	
		LC23 at 0.00%	0.39	OK	
		LC24 at 0.00%	0.50	OK	
		LC25 at 100.00%	0.22	OK	
		LC26 at 100.00%	0.26	OK	
		LC27 at 100.00%	0.26	OK	
		LC28 at 100.00%	0.28	OK	
		LC29 at 100.00%	0.29	OK	
		LC3 at 100.00%	0.24	OK	
		LC30 at 100.00%	0.30	OK	
		LC31 at 100.00%	0.27	OK	
		LC32 at 100.00%	0.26	OK	
		LC33 at 100.00%	0.25	OK	
		LC34 at 100.00%	0.23	OK	
		LC35 at 100.00%	0.20	OK	
		LC36 at 100.00%	0.20	OK	
		LC37 at 100.00%	0.11	OK	
		LC38 at 100.00%	0.34	OK	
		LC39 at 100.00%	0.21	OK	
		LC4 at 100.00%	0.33	OK	
		LC40 at 100.00%	0.36	OK	
		LC41 at 100.00%	0.40	OK	
		LC42 at 100.00%	0.39	OK	
		LC43 at 100.00%	0.40	OK	
		LC44 at 100.00%	0.40	OK	
		LC45 at 100.00%	0.41	OK	
		LC46 at 100.00%	0.41	OK	
		LC47 at 100.00%	0.42	OK	
		LC48 at 100.00%	0.42	OK	
		LC49 at 100.00%	0.42	OK	
		LC5 at 0.00%	0.38	OK	
		LC50 at 100.00%	0.42	OK	
		LC51 at 100.00%	0.41	OK	

		LC52 at 100.00%	0.41	OK	
		LC53 at 100.00%	0.27	OK	
		LC54 at 100.00%	0.27	OK	
		LC55 at 100.00%	0.27	OK	
		LC56 at 100.00%	0.27	OK	
		LC57 at 100.00%	0.28	OK	
		LC58 at 100.00%	0.28	OK	
		LC59 at 100.00%	0.29	OK	
		LC6 at 100.00%	0.45	OK	Eq. H3-6
		LC60 at 100.00%	0.30	OK	
		LC61 at 100.00%	0.29	OK	
		LC62 at 100.00%	0.29	OK	
		LC63 at 100.00%	0.28	OK	
		LC64 at 100.00%	0.28	OK	
		LC65 at 100.00%	0.30	OK	
		LC66 at 100.00%	0.31	OK	
		LC67 at 100.00%	0.31	OK	
		LC68 at 100.00%	0.31	OK	
		LC69 at 100.00%	0.32	OK	
		LC7 at 100.00%	0.34	OK	
		LC70 at 100.00%	0.32	OK	
		LC71 at 100.00%	0.31	OK	
		LC72 at 100.00%	0.30	OK	
		LC73 at 100.00%	0.30	OK	
		LC74 at 100.00%	0.30	OK	
		LC75 at 100.00%	0.29	OK	
		LC76 at 100.00%	0.29	OK	
		LC77 at 100.00%	0.42	OK	
		LC78 at 100.00%	0.43	OK	
		LC79 at 100.00%	0.43	OK	
		LC8 at 100.00%	0.40	OK	
		LC80 at 100.00%	0.44	OK	
		LC81 at 100.00%	0.44	OK	
		LC82 at 100.00%	0.44	OK	Eq. H1-1b
		LC83 at 100.00%	0.44	OK	
		LC84 at 100.00%	0.43	OK	
		LC85 at 100.00%	0.43	OK	
		LC86 at 100.00%	0.42	OK	
		LC87 at 100.00%	0.42	OK	
		LC88 at 100.00%	0.41	OK	
		LC9 at 100.00%	0.35	OK	
		W180 at 0.00%	0.19	OK	
		W210 at 100.00%	0.17	OK	
		W240 at 100.00%	0.13	OK	
		W270 at 0.00%	0.15	OK	
		W300 at 0.00%	0.24	OK	
		W330 at 0.00%	0.27	OK	
		WI180 at 0.00%	0.07	OK	
		WI210 at 100.00%	0.06	OK	
		WI240 at 100.00%	0.05	OK	
		WI270 at 0.00%	0.05	OK	
		WI300 at 0.00%	0.09	OK	
		WI330 at 0.00%	0.10	OK	
		WL180 at 0.00%	0.02	OK	
		WL210 at 100.00%	0.01	OK	
		WL240 at 100.00%	0.01	OK	
		WL270 at 0.00%	0.01	OK	
		WL300 at 0.00%	0.02	OK	
		WL330 at 0.00%	0.03	OK	
PIPE 2x0.154	**16**	LC1 at 25.00%	0.08	OK	
		LC10 at 70.83%	0.07	OK	
		LC11 at 70.83%	0.07	OK	
		LC12 at 70.83%	0.07	OK	

LC13 at 50.00%	0.06	OK	
LC14 at 25.00%	0.06	OK	
LC15 at 25.00%	0.06	OK	
LC16 at 25.00%	0.06	OK	
LC17 at 25.00%	0.05	OK	
LC18 at 25.00%	0.05	OK	
LC19 at 50.00%	0.06	OK	Eq. H1-1b
LC2 at 25.00%	0.08	OK	
LC20 at 70.83%	0.05	OK	
LC21 at 70.83%	0.05	OK	
LC22 at 70.83%	0.05	OK	
LC23 at 70.83%	0.06	OK	
LC24 at 70.83%	0.06	OK	
LC25 at 25.00%	0.11	OK	
LC26 at 25.00%	0.11	OK	
LC27 at 25.00%	0.11	OK	
LC28 at 25.00%	0.11	OK	
LC29 at 25.00%	0.11	OK	
LC3 at 25.00%	0.08	OK	
LC30 at 25.00%	0.11	OK	
LC31 at 25.00%	0.11	OK	
LC32 at 25.00%	0.11	OK	
LC33 at 25.00%	0.11	OK	
LC34 at 25.00%	0.11	OK	
LC35 at 25.00%	0.11	OK	
LC36 at 25.00%	0.11	OK	
LC37 at 25.00%	0.05	OK	
LC38 at 25.00%	0.08	OK	
LC39 at 25.00%	0.06	OK	
LC4 at 25.00%	0.07	OK	
LC40 at 25.00%	0.15	OK	
LC41 at 25.00%	0.08	OK	
LC42 at 25.00%	0.08	OK	
LC43 at 25.00%	0.08	OK	
LC44 at 25.00%	0.08	OK	
LC45 at 25.00%	0.08	OK	
LC46 at 25.00%	0.08	OK	
LC47 at 25.00%	0.08	OK	
LC48 at 25.00%	0.08	OK	
LC49 at 25.00%	0.08	OK	
LC5 at 25.00%	0.07	OK	
LC50 at 25.00%	0.08	OK	
LC51 at 25.00%	0.08	OK	
LC52 at 25.00%	0.08	OK	
LC53 at 25.00%	0.06	OK	
LC54 at 25.00%	0.06	OK	
LC55 at 25.00%	0.06	OK	
LC56 at 25.00%	0.06	OK	
LC57 at 25.00%	0.06	OK	
LC58 at 25.00%	0.06	OK	
LC59 at 25.00%	0.06	OK	
LC6 at 25.00%	0.07	OK	
LC60 at 25.00%	0.06	OK	
LC61 at 25.00%	0.06	OK	
LC62 at 25.00%	0.06	OK	
LC63 at 25.00%	0.06	OK	
LC64 at 25.00%	0.06	OK	
LC65 at 25.00%	0.10	OK	
LC66 at 25.00%	0.10	OK	
LC67 at 25.00%	0.10	OK	
LC68 at 25.00%	0.10	OK	
LC69 at 25.00%	0.10	OK	
LC7 at 25.00%	0.06	OK	
LC70 at 25.00%	0.10	OK	

	LC71 at 25.00%	0.10	OK	
	LC72 at 25.00%	0.10	OK	
	LC73 at 25.00%	0.10	OK	
	LC74 at 25.00%	0.10	OK	
	LC75 at 25.00%	0.10	OK	
	LC76 at 25.00%	0.10	OK	
	LC77 at 25.00%	0.18	OK	
	LC78 at 25.00%	**0.18**	**OK**	Eq. H1-1b
	LC79 at 25.00%	0.18	OK	
	LC8 at 70.83%	0.07	OK	
	LC80 at 25.00%	0.18	OK	
	LC81 at 25.00%	0.18	OK	
	LC82 at 25.00%	0.18	OK	
	LC83 at 25.00%	0.18	OK	
	LC84 at 25.00%	0.18	OK	
	LC85 at 25.00%	0.18	OK	
	LC86 at 25.00%	0.18	OK	
	LC87 at 25.00%	0.18	OK	
	LC88 at 25.00%	0.18	OK	
	LC9 at 70.83%	0.07	OK	
	W180 at 50.00%	0.04	OK	
	W210 at 50.00%	0.03	OK	
	W240 at 50.00%	0.02	OK	
	W270 at 50.00%	0.02	OK	
	W300 at 50.00%	0.03	OK	
	W330 at 50.00%	0.03	OK	
	WI180 at 50.00%	0.02	OK	
	WI210 at 50.00%	0.01	OK	
	WI240 at 50.00%	0.01	OK	
	WI270 at 50.00%	0.01	OK	
	WI300 at 50.00%	0.01	OK	
	WI330 at 50.00%	0.02	OK	
	WL180 at 50.00%	0.00	OK	
	WL210 at 50.00%	0.00	OK	
	WL240 at 50.00%	0.00	OK	
	WL270 at 50.00%	0.00	OK	
	WL300 at 50.00%	0.00	OK	
	WL330 at 50.00%	0.00	OK	
18	LC1 at 0.00%	0.27	OK	
	LC10 at 100.00%	0.25	OK	
	LC11 at 100.00%	0.25	OK	
	LC12 at 0.00%	0.25	OK	
	LC13 at 0.00%	0.21	OK	
	LC14 at 0.00%	0.20	OK	
	LC15 at 0.00%	0.21	OK	
	LC16 at 0.00%	0.20	OK	
	LC17 at 0.00%	0.19	OK	
	LC18 at 0.00%	0.18	OK	
	LC19 at 100.00%	0.16	OK	
	LC2 at 0.00%	0.27	OK	
	LC20 at 100.00%	0.17	OK	
	LC21 at 100.00%	0.19	OK	
	LC22 at 100.00%	0.19	OK	
	LC23 at 100.00%	0.19	OK	
	LC24 at 0.00%	0.19	OK	
	LC25 at 0.00%	0.41	OK	
	LC26 at 0.00%	0.40	OK	
	LC27 at 0.00%	0.40	OK	
	LC28 at 0.00%	0.40	OK	
	LC29 at 0.00%	0.40	OK	
	LC3 at 0.00%	0.27	OK	
	LC30 at 0.00%	0.40	OK	
	LC31 at 0.00%	0.39	OK	

LC32 at 0.00%	0.39	OK	
LC33 at 0.00%	0.39	OK	
LC34 at 0.00%	0.40	OK	
LC35 at 0.00%	0.40	OK	
LC36 at 0.00%	0.40	OK	
LC37 at 0.00%	0.18	OK	
LC38 at 0.00%	0.28	OK	
LC39 at 0.00%	0.21	OK	
LC4 at 0.00%	0.26	OK	
LC40 at 0.00%	0.56	OK	
LC41 at 0.00%	0.29	OK	
LC42 at 0.00%	0.29	OK	
LC43 at 0.00%	0.29	OK	
LC44 at 0.00%	0.29	OK	
LC45 at 0.00%	0.29	OK	
LC46 at 0.00%	0.29	OK	
LC47 at 0.00%	0.29	OK	
LC48 at 0.00%	0.29	OK	
LC49 at 0.00%	0.29	OK	
LC5 at 0.00%	0.25	OK	
LC50 at 0.00%	0.29	OK	
LC51 at 0.00%	0.29	OK	
LC52 at 0.00%	0.29	OK	
LC53 at 0.00%	0.22	OK	
LC54 at 0.00%	0.22	OK	
LC55 at 0.00%	0.22	OK	
LC56 at 0.00%	0.22	OK	
LC57 at 0.00%	0.22	OK	
LC58 at 0.00%	0.22	OK	
LC59 at 0.00%	0.22	OK	
LC6 at 0.00%	0.24	OK	
LC60 at 0.00%	0.22	OK	
LC61 at 0.00%	0.22	OK	
LC62 at 0.00%	0.22	OK	
LC63 at 0.00%	0.22	OK	
LC64 at 0.00%	0.22	OK	
LC65 at 0.00%	0.36	OK	
LC66 at 0.00%	0.36	OK	
LC67 at 0.00%	0.36	OK	
LC68 at 0.00%	0.36	OK	
LC69 at 0.00%	0.35	OK	
LC7 at 100.00%	0.22	OK	
LC70 at 0.00%	0.35	OK	
LC71 at 0.00%	0.35	OK	
LC72 at 0.00%	0.35	OK	
LC73 at 0.00%	0.35	OK	
LC74 at 0.00%	0.35	OK	
LC75 at 0.00%	0.36	OK	
LC76 at 0.00%	0.36	OK	
LC77 at 0.00%	0.66	OK	
LC78 at 0.00%	**0.66**	**OK**	Eq. H1-1b
LC79 at 0.00%	0.66	OK	
LC8 at 100.00%	0.23	OK	
LC80 at 0.00%	0.66	OK	
LC81 at 0.00%	0.66	OK	
LC82 at 0.00%	0.66	OK	
LC83 at 0.00%	0.66	OK	
LC84 at 0.00%	0.66	OK	
LC85 at 0.00%	0.66	OK	
LC86 at 0.00%	0.66	OK	
LC87 at 0.00%	0.66	OK	
LC88 at 0.00%	0.66	OK	
LC9 at 100.00%	0.25	OK	
W180 at 0.00%	0.01	OK	

	W210 at 50.00%	0.02	OK	
	W240 at 50.00%	0.02	OK	Eq. H1-1b
	W270 at 50.00%	0.02	OK	
	W300 at 50.00%	0.02	OK	
	W330 at 50.00%	0.02	OK	
	WI180 at 0.00%	0.01	OK	
	WI210 at 50.00%	0.01	OK	
	WI240 at 50.00%	0.01	OK	
	WI270 at 50.00%	0.01	OK	
	WI300 at 50.00%	0.01	OK	
	WI330 at 50.00%	0.01	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 50.00%	0.00	OK	
	WL240 at 50.00%	0.00	OK	
	WL270 at 50.00%	0.00	OK	
	WL300 at 50.00%	0.00	OK	
	WL330 at 50.00%	0.00	OK	
19	LC1 at 0.00%	0.28	OK	
	LC10 at 100.00%	0.21	OK	
	LC11 at 0.00%	0.21	OK	
	LC12 at 0.00%	0.23	OK	
	LC13 at 56.25%	0.25	OK	
	LC14 at 56.25%	0.22	OK	
	LC15 at 0.00%	0.20	OK	
	LC16 at 0.00%	0.16	OK	
	LC17 at 100.00%	0.17	OK	
	LC18 at 100.00%	0.19	OK	
	LC19 at 100.00%	0.22	OK	
	LC2 at 0.00%	0.26	OK	
	LC20 at 53.13%	0.21	OK	
	LC21 at 100.00%	0.19	OK	
	LC22 at 100.00%	0.16	OK	
	LC23 at 0.00%	0.17	OK	
	LC24 at 0.00%	0.19	OK	
	LC25 at 0.00%	0.33	OK	
	LC26 at 0.00%	0.33	OK	
	LC27 at 0.00%	0.33	OK	
	LC28 at 100.00%	0.33	OK	
	LC29 at 100.00%	0.33	OK	
	LC3 at 0.00%	0.25	OK	
	LC30 at 100.00%	0.34	OK	
	LC31 at 100.00%	0.34	OK	
	LC32 at 100.00%	0.34	OK	
	LC33 at 100.00%	0.34	OK	
	LC34 at 100.00%	0.33	OK	
	LC35 at 100.00%	0.32	OK	
	LC36 at 100.00%	0.32	OK	
	LC37 at 100.00%	0.15	OK	
	LC38 at 100.00%	0.22	OK	
	LC39 at 100.00%	0.20	OK	
	LC4 at 0.00%	0.21	OK	
	LC40 at 100.00%	0.51	OK	
	LC41 at 100.00%	0.23	OK	
	LC42 at 100.00%	0.23	OK	
	LC43 at 100.00%	0.23	OK	
	LC44 at 100.00%	0.23	OK	
	LC45 at 100.00%	0.23	OK	
	LC46 at 100.00%	0.23	OK	
	LC47 at 100.00%	0.23	OK	
	LC48 at 100.00%	0.23	OK	
	LC49 at 100.00%	0.23	OK	
	LC5 at 100.00%	0.22	OK	
	LC50 at 100.00%	0.23	OK	

	LC51 at 100.00%	0.23	OK	
	LC52 at 100.00%	0.23	OK	
	LC53 at 100.00%	0.20	OK	
	LC54 at 100.00%	0.20	OK	
	LC55 at 100.00%	0.20	OK	
	LC56 at 100.00%	0.20	OK	
	LC57 at 100.00%	0.20	OK	
	LC58 at 100.00%	0.20	OK	
	LC59 at 100.00%	0.21	OK	
	LC6 at 100.00%	0.24	OK	
	LC60 at 100.00%	0.21	OK	
	LC61 at 100.00%	0.21	OK	
	LC62 at 100.00%	0.20	OK	
	LC63 at 100.00%	0.20	OK	
	LC64 at 100.00%	0.20	OK	
	LC65 at 100.00%	0.19	OK	
	LC66 at 100.00%	0.19	OK	
	LC67 at 100.00%	0.19	OK	
	LC68 at 100.00%	0.20	OK	
	LC69 at 100.00%	0.20	OK	
	LC7 at 100.00%	0.27	OK	
	LC70 at 100.00%	0.20	OK	
	LC71 at 100.00%	0.20	OK	
	LC72 at 100.00%	0.20	OK	
	LC73 at 100.00%	0.20	OK	
	LC74 at 100.00%	0.20	OK	
	LC75 at 100.00%	0.19	OK	
	LC76 at 100.00%	0.19	OK	
	LC77 at 100.00%	0.59	OK	
	LC78 at 100.00%	0.59	OK	
	LC79 at 100.00%	0.59	OK	
	LC8 at 100.00%	0.26	OK	
	LC80 at 100.00%	0.59	OK	
	LC81 at 100.00%	0.59	OK	
	LC82 at 100.00%	0.59	OK	
	LC83 at 100.00%	**0.59**	**OK**	Eq. H1-1b
	LC84 at 100.00%	0.59	OK	
	LC85 at 100.00%	0.59	OK	
	LC86 at 100.00%	0.59	OK	
	LC87 at 100.00%	0.59	OK	
	LC88 at 100.00%	0.59	OK	
	LC9 at 100.00%	0.24	OK	
	W180 at 56.25%	0.15	OK	
	W210 at 56.25%	0.13	OK	
	W240 at 53.13%	0.10	OK	
	W270 at 53.13%	0.06	OK	
	W300 at 56.25%	0.05	OK	
	W330 at 56.25%	0.06	OK	
	WI180 at 56.25%	0.06	OK	
	WI210 at 56.25%	0.05	OK	
	WI240 at 53.13%	0.04	OK	
	WI270 at 53.13%	0.02	OK	
	WI300 at 56.25%	0.02	OK	
	WI330 at 56.25%	0.02	OK	
	WL180 at 56.25%	0.01	OK	
	WL210 at 56.25%	0.01	OK	
	WL240 at 53.13%	0.01	OK	
	WL270 at 53.13%	0.01	OK	
	WL300 at 56.25%	0.01	OK	
	WL330 at 56.25%	0.01	OK	
20	LC1 at 0.00%	0.16	OK	
	LC10 at 0.00%	0.18	OK	
	LC11 at 0.00%	0.17	OK	

LC12 at 0.00%	0.17	OK	
LC13 at 0.00%	0.12	OK	
LC14 at 100.00%	0.13	OK	
LC15 at 100.00%	0.14	OK	
LC16 at 100.00%	0.14	OK	
LC17 at 100.00%	0.14	OK	
LC18 at 100.00%	0.14	OK	
LC19 at 100.00%	0.13	OK	
LC2 at 100.00%	0.17	OK	
LC20 at 0.00%	0.13	OK	
LC21 at 0.00%	0.13	OK	
LC22 at 0.00%	0.14	OK	
LC23 at 0.00%	0.13	OK	
LC24 at 0.00%	0.13	OK	
LC25 at 100.00%	0.26	OK	
LC26 at 100.00%	0.26	OK	
LC27 at 100.00%	0.26	OK	
LC28 at 100.00%	0.26	OK	
LC29 at 100.00%	0.26	OK	
LC3 at 100.00%	0.18	OK	
LC30 at 100.00%	0.26	OK	
LC31 at 100.00%	0.26	OK	
LC32 at 100.00%	0.26	OK	
LC33 at 100.00%	0.26	OK	
LC34 at 100.00%	0.26	OK	
LC35 at 100.00%	0.26	OK	
LC36 at 100.00%	0.26	OK	
LC37 at 100.00%	0.12	OK	
LC38 at 100.00%	0.51	OK	
LC39 at 100.00%	0.16	OK	
LC4 at 100.00%	0.18	OK	
LC40 at 100.00%	0.16	OK	
LC41 at 100.00%	0.59	OK	
LC42 at 100.00%	0.60	OK	
LC43 at 100.00%	0.60	OK	
LC44 at 100.00%	**0.60**	**OK**	Eq. H1-1b
LC45 at 100.00%	0.60	OK	
LC46 at 100.00%	0.60	OK	
LC47 at 100.00%	0.60	OK	
LC48 at 100.00%	0.59	OK	
LC49 at 100.00%	0.59	OK	
LC5 at 100.00%	0.18	OK	
LC50 at 100.00%	0.59	OK	
LC51 at 100.00%	0.59	OK	
LC52 at 100.00%	0.59	OK	
LC53 at 100.00%	0.17	OK	
LC54 at 100.00%	0.17	OK	
LC55 at 100.00%	0.17	OK	
LC56 at 100.00%	0.17	OK	
LC57 at 100.00%	0.17	OK	
LC58 at 100.00%	0.17	OK	
LC59 at 100.00%	0.17	OK	
LC6 at 100.00%	0.18	OK	
LC60 at 100.00%	0.17	OK	
LC61 at 100.00%	0.17	OK	
LC62 at 100.00%	0.17	OK	
LC63 at 100.00%	0.17	OK	
LC64 at 100.00%	0.17	OK	
LC65 at 100.00%	0.16	OK	
LC66 at 100.00%	0.16	OK	
LC67 at 100.00%	0.16	OK	
LC68 at 100.00%	0.16	OK	
LC69 at 100.00%	0.16	OK	
LC7 at 100.00%	0.17	OK	

	LC70 at 100.00%	0.16	OK
	LC71 at 100.00%	0.16	OK
	LC72 at 100.00%	0.16	OK
	LC73 at 100.00%	0.16	OK
	LC74 at 100.00%	0.16	OK
	LC75 at 100.00%	0.16	OK
	LC76 at 100.00%	0.16	OK
	LC77 at 100.00%	0.16	OK
	LC78 at 100.00%	0.16	OK
	LC79 at 100.00%	0.16	OK
	LC8 at 100.00%	0.16	OK
	LC80 at 100.00%	0.16	OK
	LC81 at 100.00%	0.16	OK
	LC82 at 100.00%	0.16	OK
	LC83 at 100.00%	0.16	OK
	LC84 at 100.00%	0.16	OK
	LC85 at 100.00%	0.16	OK
	LC86 at 100.00%	0.16	OK
	LC87 at 100.00%	0.16	OK
	LC88 at 100.00%	0.16	OK
	LC9 at 0.00%	0.17	OK
	W180 at 0.00%	0.00	OK
	W210 at 50.00%	0.02	OK
	W240 at 50.00%	0.02	OK
	W270 at 50.00%	0.03	OK
	W300 at 50.00%	0.02	OK
	W330 at 50.00%	0.02	OK
	WI180 at 50.00%	0.00	OK
	WI210 at 50.00%	0.01	OK
	WI240 at 50.00%	0.01	OK
	WI270 at 50.00%	0.01	OK
	WI300 at 50.00%	0.01	OK
	WI330 at 50.00%	0.01	OK
	WL180 at 0.00%	0.00	OK
	WL210 at 50.00%	0.00	OK
	WL240 at 50.00%	0.00	OK
	WL270 at 50.00%	0.00	OK
	WL300 at 50.00%	0.00	OK
	WL330 at 50.00%	0.00	OK
32	LC1 at 100.00%	0.22	OK
	LC10 at 0.00%	0.23	OK
	LC11 at 0.00%	0.23	OK
	LC12 at 0.00%	0.23	OK
	LC13 at 100.00%	0.17	OK
	LC14 at 100.00%	0.18	OK
	LC15 at 100.00%	0.19	OK
	LC16 at 100.00%	0.19	OK
	LC17 at 100.00%	0.19	OK
	LC18 at 100.00%	0.18	OK
	LC19 at 100.00%	0.17	OK
	LC2 at 100.00%	0.24	OK
	LC20 at 0.00%	0.18	OK
	LC21 at 0.00%	0.18	OK
	LC22 at 0.00%	0.18	OK
	LC23 at 0.00%	0.18	OK
	LC24 at 0.00%	0.17	OK
	LC25 at 100.00%	0.35	OK
	LC26 at 100.00%	0.35	OK
	LC27 at 100.00%	0.35	OK
	LC28 at 100.00%	0.35	OK
	LC29 at 100.00%	0.35	OK
	LC3 at 100.00%	0.24	OK
	LC30 at 100.00%	0.35	OK

LC31 at 100.00%	0.35	OK	
LC32 at 100.00%	0.34	OK	
LC33 at 100.00%	0.34	OK	
LC34 at 100.00%	0.34	OK	
LC35 at 100.00%	0.34	OK	
LC36 at 100.00%	0.34	OK	
LC37 at 100.00%	0.16	OK	
LC38 at 100.00%	0.55	OK	
LC39 at 100.00%	0.19	OK	
LC4 at 100.00%	0.24	OK	
LC40 at 100.00%	0.23	OK	
LC41 at 100.00%	0.64	OK	
LC42 at 100.00%	0.64	OK	
LC43 at 100.00%	0.64	OK	
LC44 at 100.00%	**0.64**	**OK**	Eq. H1-1b
LC45 at 100.00%	0.64	OK	
LC46 at 100.00%	0.64	OK	
LC47 at 100.00%	0.64	OK	
LC48 at 100.00%	0.64	OK	
LC49 at 100.00%	0.64	OK	
LC5 at 100.00%	0.24	OK	
LC50 at 100.00%	0.64	OK	
LC51 at 100.00%	0.64	OK	
LC52 at 100.00%	0.64	OK	
LC53 at 100.00%	0.33	OK	
LC54 at 100.00%	0.33	OK	
LC55 at 100.00%	0.33	OK	
LC56 at 100.00%	0.33	OK	
LC57 at 100.00%	0.33	OK	
LC58 at 100.00%	0.33	OK	
LC59 at 100.00%	0.33	OK	
LC6 at 100.00%	0.24	OK	
LC60 at 100.00%	0.33	OK	
LC61 at 100.00%	0.33	OK	
LC62 at 100.00%	0.33	OK	
LC63 at 100.00%	0.33	OK	
LC64 at 100.00%	0.33	OK	
LC65 at 100.00%	0.19	OK	
LC66 at 100.00%	0.19	OK	
LC67 at 100.00%	0.19	OK	
LC68 at 100.00%	0.19	OK	
LC69 at 100.00%	0.19	OK	
LC7 at 100.00%	0.22	OK	
LC70 at 100.00%	0.19	OK	
LC71 at 100.00%	0.19	OK	
LC72 at 100.00%	0.19	OK	
LC73 at 100.00%	0.18	OK	
LC74 at 100.00%	0.18	OK	
LC75 at 100.00%	0.18	OK	
LC76 at 100.00%	0.19	OK	
LC77 at 100.00%	0.23	OK	
LC78 at 100.00%	0.23	OK	
LC79 at 100.00%	0.23	OK	
LC8 at 0.00%	0.23	OK	
LC80 at 100.00%	0.23	OK	
LC81 at 100.00%	0.23	OK	
LC82 at 100.00%	0.23	OK	
LC83 at 100.00%	0.23	OK	
LC84 at 100.00%	0.23	OK	
LC85 at 100.00%	0.23	OK	
LC86 at 100.00%	0.23	OK	
LC87 at 100.00%	0.23	OK	
LC88 at 100.00%	0.23	OK	
LC9 at 0.00%	0.23	OK	

	W180 at 100.00%	0.02	OK
	W210 at 100.00%	0.02	OK
	W240 at 50.00%	0.02	OK
	W270 at 50.00%	0.02	OK
	W300 at 100.00%	0.02	OK
	W330 at 100.00%	0.02	OK
	WI180 at 100.00%	0.01	OK
	WI210 at 50.00%	0.01	OK
	WI240 at 50.00%	0.01	OK
	WI270 at 50.00%	0.01	OK
	WI300 at 100.00%	0.01	OK
	WI330 at 100.00%	0.01	OK
	WL180 at 100.00%	0.00	OK
	WL210 at 100.00%	0.00	OK
	WL240 at 50.00%	0.00	OK
	WL270 at 50.00%	0.00	OK
	WL300 at 100.00%	0.00	OK
	WL330 at 100.00%	0.00	OK
38	LC1 at 100.00%	0.21	OK
	LC10 at 0.00%	0.24	OK
	LC11 at 0.00%	0.27	OK
	LC12 at 0.00%	0.25	OK
	LC13 at 100.00%	0.21	OK
	LC14 at 0.00%	0.09	OK
	LC15 at 0.00%	0.12	OK
	LC16 at 0.00%	0.21	OK
	LC17 at 0.00%	0.26	OK
	LC18 at 0.00%	0.25	OK
	LC19 at 0.00%	0.22	OK
	LC2 at 0.00%	0.12	OK
	LC20 at 0.00%	0.12	OK
	LC21 at 0.00%	0.15	OK
	LC22 at 0.00%	0.20	OK
	LC23 at 0.00%	0.24	OK
	LC24 at 100.00%	0.23	OK
	LC25 at 0.00%	0.22	OK
	LC26 at 0.00%	0.20	OK
	LC27 at 0.00%	0.20	OK
	LC28 at 0.00%	0.22	OK
	LC29 at 0.00%	0.24	OK
	LC3 at 0.00%	0.16	OK
	LC30 at 0.00%	0.24	OK
	LC31 at 0.00%	0.24	OK
	LC32 at 0.00%	0.21	OK
	LC33 at 0.00%	0.21	OK
	LC34 at 0.00%	0.22	OK
	LC35 at 0.00%	0.23	OK
	LC36 at 0.00%	0.23	OK
	LC37 at 0.00%	0.09	OK
	LC38 at 100.00%	0.11	OK
	LC39 at 0.00%	0.14	OK
	LC4 at 0.00%	0.24	OK
	LC40 at 0.00%	0.36	OK
	LC41 at 100.00%	0.13	OK
	LC42 at 100.00%	0.13	OK
	LC43 at 100.00%	0.13	OK
	LC44 at 100.00%	0.13	OK
	LC45 at 100.00%	0.14	OK
	LC46 at 100.00%	0.14	OK
	LC47 at 100.00%	0.13	OK
	LC48 at 100.00%	0.13	OK
	LC49 at 100.00%	0.13	OK
	LC5 at 0.00%	0.29	OK

	LC50 at 100.00%	0.13	OK	
	LC51 at 100.00%	0.14	OK	
	LC52 at 100.00%	0.14	OK	
	LC53 at 0.00%	0.11	OK	
	LC54 at 0.00%	0.11	OK	
	LC55 at 0.00%	0.11	OK	
	LC56 at 0.00%	0.11	OK	
	LC57 at 0.00%	0.12	OK	
	LC58 at 0.00%	0.12	OK	
	LC59 at 0.00%	0.12	OK	
	LC6 at 0.00%	0.28	OK	
	LC60 at 0.00%	0.11	OK	
	LC61 at 0.00%	0.11	OK	
	LC62 at 0.00%	0.11	OK	
	LC63 at 0.00%	0.11	OK	
	LC64 at 0.00%	0.11	OK	
	LC65 at 0.00%	0.20	OK	
	LC66 at 0.00%	0.19	OK	
	LC67 at 0.00%	0.19	OK	
	LC68 at 0.00%	0.20	OK	
	LC69 at 0.00%	0.20	OK	
	LC7 at 0.00%	0.25	OK	
	LC70 at 0.00%	0.20	OK	
	LC71 at 0.00%	0.20	OK	
	LC72 at 0.00%	0.20	OK	
	LC73 at 0.00%	0.19	OK	
	LC74 at 0.00%	0.20	OK	
	LC75 at 0.00%	0.20	OK	
	LC76 at 0.00%	0.20	OK	
	LC77 at 0.00%	0.41	OK	
	LC78 at 0.00%	0.40	OK	
	LC79 at 0.00%	0.40	OK	
	LC8 at 0.00%	0.15	OK	
	LC80 at 0.00%	0.41	OK	
	LC81 at 0.00%	0.41	OK	
	LC82 at 0.00%	0.41	OK	
	LC83 at 0.00%	0.41	OK	
	LC84 at 0.00%	0.41	OK	
	LC85 at 0.00%	0.41	OK	
	LC86 at 0.00%	0.41	OK	
	LC87 at 0.00%	0.41	OK	
	LC88 at 0.00%	**0.41**	**OK**	Eq. H1-1b
	LC9 at 0.00%	0.19	OK	
	W180 at 100.00%	0.11	OK	
	W210 at 100.00%	0.03	OK	
	W240 at 0.00%	0.04	OK	
	W270 at 0.00%	0.07	OK	
	W300 at 100.00%	0.11	OK	
	W330 at 100.00%	0.13	OK	
	WI180 at 100.00%	0.04	OK	
	WI210 at 0.00%	0.01	OK	
	WI240 at 100.00%	0.01	OK	
	WI270 at 100.00%	0.03	OK	
	WI300 at 100.00%	0.04	OK	
	WI330 at 100.00%	0.05	OK	
	WL180 at 100.00%	0.01	OK	
	WL210 at 0.00%	0.00	OK	
	WL240 at 100.00%	0.00	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.01	OK	
	WL330 at 100.00%	0.01	OK	
52	LC1 at 0.00%	0.03	OK	
	LC10 at 100.00%	0.03	OK	

LC11 at 0.00%	0.03	OK	
LC12 at 0.00%	0.03	OK	
LC13 at 0.00%	0.03	OK	
LC14 at 100.00%	0.02	OK	
LC15 at 0.00%	0.01	OK	
LC16 at 0.00%	0.03	OK	
LC17 at 0.00%	0.05	OK	
LC18 at 0.00%	0.06	OK	
LC19 at 100.00%	0.05	OK	
LC2 at 81.25%	0.01	OK	
LC20 at 100.00%	0.04	OK	
LC21 at 100.00%	0.04	OK	
LC22 at 100.00%	0.02	OK	
LC23 at 0.00%	0.03	OK	
LC24 at 0.00%	0.04	OK	
LC25 at 100.00%	0.03	OK	
LC26 at 100.00%	0.04	OK	
LC27 at 100.00%	0.04	OK	
LC28 at 100.00%	0.04	OK	
LC29 at 100.00%	0.05	OK	
LC3 at 0.00%	0.02	OK	
LC30 at 100.00%	0.05	OK	
LC31 at 100.00%	0.05	OK	
LC32 at 100.00%	0.05	OK	
LC33 at 100.00%	0.05	OK	
LC34 at 100.00%	0.04	OK	
LC35 at 100.00%	0.04	OK	
LC36 at 100.00%	0.04	OK	
LC37 at 100.00%	0.02	OK	
LC38 at 0.00%	0.04	OK	
LC39 at 100.00%	0.03	OK	
LC4 at 0.00%	0.04	OK	
LC40 at 0.00%	0.06	OK	
LC41 at 0.00%	0.05	OK	
LC42 at 0.00%	0.05	OK	
LC43 at 0.00%	0.05	OK	
LC44 at 0.00%	0.05	OK	
LC45 at 0.00%	0.05	OK	
LC46 at 0.00%	0.05	OK	
LC47 at 0.00%	0.05	OK	
LC48 at 0.00%	0.05	OK	
LC49 at 0.00%	0.05	OK	
LC5 at 0.00%	0.06	OK	
LC50 at 0.00%	0.05	OK	
LC51 at 0.00%	0.05	OK	
LC52 at 0.00%	0.05	OK	
LC53 at 100.00%	0.11	OK	
LC54 at 100.00%	0.11	OK	
LC55 at 100.00%	0.11	OK	
LC56 at 100.00%	0.11	OK	
LC57 at 100.00%	0.11	OK	
LC58 at 100.00%	0.11	OK	
LC59 at 100.00%	**0.11**	**OK**	Eq. H1-1b
LC6 at 0.00%	0.06	OK	
LC60 at 100.00%	0.11	OK	
LC61 at 100.00%	0.11	OK	
LC62 at 100.00%	0.11	OK	
LC63 at 100.00%	0.11	OK	
LC64 at 100.00%	0.11	OK	
LC65 at 0.00%	0.08	OK	
LC66 at 0.00%	0.07	OK	
LC67 at 0.00%	0.07	OK	
LC68 at 0.00%	0.07	OK	
LC69 at 0.00%	0.07	OK	

	LC7 at 100.00%	0.06	OK	
	LC70 at 0.00%	0.07	OK	
	LC71 at 0.00%	0.07	OK	
	LC72 at 0.00%	0.07	OK	
	LC73 at 0.00%	0.07	OK	
	LC74 at 0.00%	0.07	OK	
	LC75 at 0.00%	0.08	OK	
	LC76 at 0.00%	0.08	OK	
	LC77 at 0.00%	0.07	OK	
	LC78 at 0.00%	0.07	OK	
	LC79 at 0.00%	0.07	OK	
	LC8 at 100.00%	0.05	OK	
	LC80 at 0.00%	0.07	OK	
	LC81 at 0.00%	0.07	OK	
	LC82 at 0.00%	0.07	OK	Eq. H3-1
	LC83 at 0.00%	0.07	OK	
	LC84 at 0.00%	0.07	OK	
	LC85 at 0.00%	0.07	OK	
	LC86 at 0.00%	0.07	OK	
	LC87 at 0.00%	0.07	OK	
	LC88 at 0.00%	0.07	OK	
	LC9 at 100.00%	0.04	OK	
	W180 at 0.00%	0.03	OK	
	W210 at 100.00%	0.02	OK	
	W240 at 100.00%	0.01	OK	
	W270 at 0.00%	0.01	OK	
	W300 at 0.00%	0.03	OK	
	W330 at 0.00%	0.03	OK	
	WI180 at 0.00%	0.01	OK	
	WI210 at 100.00%	0.01	OK	
	WI240 at 100.00%	0.01	OK	
	WI270 at 0.00%	0.01	OK	
	WI300 at 0.00%	0.01	OK	
	WI330 at 0.00%	0.01	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 100.00%	0.00	OK	
	WL240 at 100.00%	0.00	OK	
	WL270 at 0.00%	0.00	OK	
	WL300 at 0.00%	0.00	OK	
	WL330 at 0.00%	0.00	OK	
53	LC1 at 64.58%	0.09	OK	
	LC10 at 18.75%	0.11	OK	
	LC11 at 18.75%	0.11	OK	
	LC12 at 18.75%	0.11	OK	
	LC13 at 64.58%	0.07	OK	
	LC14 at 64.58%	0.09	OK	
	LC15 at 64.58%	0.09	OK	
	LC16 at 64.58%	0.09	OK	
	LC17 at 64.58%	0.09	OK	
	LC18 at 64.58%	0.09	OK	
	LC19 at 64.58%	0.07	OK	
	LC2 at 64.58%	0.11	OK	
	LC20 at 18.75%	0.09	OK	
	LC21 at 18.75%	0.08	OK	
	LC22 at 18.75%	0.09	OK	
	LC23 at 18.75%	0.08	OK	
	LC24 at 18.75%	0.09	OK	
	LC25 at 64.58%	0.15	OK	
	LC26 at 64.58%	0.15	OK	
	LC27 at 64.58%	0.15	OK	
	LC28 at 64.58%	0.15	OK	
	LC29 at 64.58%	0.15	OK	
	LC3 at 64.58%	0.11	OK	

LC30 at 64.58%	0.16	OK	
LC31 at 64.58%	0.15	OK	
LC32 at 18.75%	0.15	OK	
LC33 at 18.75%	0.15	OK	
LC34 at 18.75%	0.15	OK	
LC35 at 18.75%	0.15	OK	
LC36 at 18.75%	0.15	OK	
LC37 at 64.58%	0.07	OK	
LC38 at 64.58%	0.23	OK	
LC39 at 64.58%	0.08	OK	
LC4 at 64.58%	0.12	OK	
LC40 at 18.75%	0.10	OK	
LC41 at 64.58%	0.27	OK	
LC42 at 64.58%	0.27	OK	
LC43 at 64.58%	0.27	OK	
LC44 at 64.58%	0.27	OK	
LC45 at 64.58%	0.27	OK	
LC46 at 64.58%	**0.27**	**OK**	Eq. H1-1b
LC47 at 64.58%	0.27	OK	
LC48 at 64.58%	0.27	OK	
LC49 at 64.58%	0.27	OK	
LC5 at 64.58%	0.11	OK	
LC50 at 64.58%	0.27	OK	
LC51 at 64.58%	0.27	OK	
LC52 at 64.58%	0.27	OK	
LC53 at 64.58%	0.15	OK	
LC54 at 64.58%	0.15	OK	
LC55 at 64.58%	0.15	OK	
LC56 at 64.58%	0.15	OK	
LC57 at 64.58%	0.15	OK	
LC58 at 64.58%	0.15	OK	
LC59 at 64.58%	0.15	OK	
LC6 at 64.58%	0.11	OK	
LC60 at 64.58%	0.15	OK	
LC61 at 64.58%	0.15	OK	
LC62 at 64.58%	0.15	OK	
LC63 at 64.58%	0.15	OK	
LC64 at 64.58%	0.15	OK	
LC65 at 64.58%	0.08	OK	
LC66 at 64.58%	0.08	OK	
LC67 at 64.58%	0.08	OK	
LC68 at 64.58%	0.08	OK	
LC69 at 64.58%	0.08	OK	
LC7 at 64.58%	0.10	OK	
LC70 at 64.58%	0.08	OK	
LC71 at 64.58%	0.08	OK	
LC72 at 64.58%	0.08	OK	
LC73 at 64.58%	0.08	OK	
LC74 at 64.58%	0.08	OK	
LC75 at 64.58%	0.08	OK	
LC76 at 18.75%	0.08	OK	
LC77 at 18.75%	0.11	OK	
LC78 at 64.58%	0.11	OK	
LC79 at 64.58%	0.11	OK	
LC8 at 18.75%	0.11	OK	
LC80 at 64.58%	0.11	OK	
LC81 at 64.58%	0.11	OK	
LC82 at 64.58%	0.11	OK	
LC83 at 18.75%	0.11	OK	
LC84 at 18.75%	0.11	OK	
LC85 at 18.75%	0.11	OK	
LC86 at 18.75%	0.11	OK	
LC87 at 18.75%	0.11	OK	
LC88 at 18.75%	0.11	OK	

	LC9 at 18.75%	0.10	OK	
	W180 at 66.67%	0.04	OK	
	W210 at 66.67%	0.03	OK	
	W240 at 66.67%	0.03	OK	
	W270 at 66.67%	0.03	OK	
	W300 at 66.67%	0.03	OK	
	W330 at 66.67%	0.03	OK	
	WI180 at 66.67%	0.02	OK	
	WI210 at 16.67%	0.01	OK	
	WI240 at 16.67%	0.01	OK	
	WI270 at 16.67%	0.01	OK	
	WI300 at 16.67%	0.01	OK	
	WI330 at 16.67%	0.01	OK	
	WL180 at 16.67%	0.00	OK	
	WL210 at 66.67%	0.00	OK	
	WL240 at 66.67%	0.00	OK	
	WL270 at 16.67%	0.00	OK	
	WL300 at 16.67%	0.00	OK	
	WL330 at 16.67%	0.00	OK	
17	LC1 at 25.00%	0.07	OK	
	LC10 at 25.00%	0.05	OK	
	LC11 at 25.00%	0.05	OK	
	LC12 at 25.00%	0.05	OK	
	LC13 at 25.00%	0.05	OK	
	LC14 at 25.00%	0.06	OK	
	LC15 at 25.00%	0.06	OK	
	LC16 at 25.00%	0.06	OK	
	LC17 at 25.00%	0.06	OK	
	LC18 at 25.00%	0.06	OK	
	LC19 at 25.00%	0.04	OK	
	LC2 at 25.00%	0.08	OK	
	LC20 at 70.83%	0.04	OK	
	LC21 at 25.00%	0.04	OK	
	LC22 at 70.83%	0.03	OK	
	LC23 at 25.00%	0.04	OK	
	LC24 at 25.00%	0.04	OK	
	LC25 at 25.00%	0.10	OK	
	LC26 at 25.00%	0.10	OK	
	LC27 at 25.00%	0.10	OK	
	LC28 at 25.00%	0.10	OK	
	LC29 at 25.00%	0.10	OK	
	LC3 at 25.00%	0.07	OK	
	LC30 at 25.00%	0.10	OK	
	LC31 at 25.00%	0.10	OK	
	LC32 at 25.00%	0.09	OK	
	LC33 at 25.00%	0.09	OK	
	LC34 at 25.00%	0.09	OK	
	LC35 at 25.00%	0.09	OK	
	LC36 at 25.00%	0.09	OK	
	LC37 at 25.00%	0.05	OK	
	LC38 at 25.00%	0.19	OK	
	LC39 at 25.00%	0.06	OK	
	LC4 at 25.00%	0.07	OK	
	LC40 at 25.00%	0.06	OK	
	LC41 at 25.00%	0.23	OK	
	LC42 at 25.00%	0.23	OK	
	LC43 at 25.00%	0.23	OK	
	LC44 at 25.00%	**0.23**	**OK**	Eq. H1-1b
	LC45 at 25.00%	0.23	OK	
	LC46 at 25.00%	0.23	OK	
	LC47 at 25.00%	0.23	OK	
	LC48 at 25.00%	0.23	OK	
	LC49 at 25.00%	0.23	OK	

	LC5 at 25.00%	0.07	OK
	LC50 at 25.00%	0.23	OK
	LC51 at 25.00%	0.23	OK
	LC52 at 25.00%	0.23	OK
	LC53 at 25.00%	0.06	OK
	LC54 at 25.00%	0.07	OK
	LC55 at 25.00%	0.06	OK
	LC56 at 25.00%	0.07	OK
	LC57 at 25.00%	0.07	OK
	LC58 at 25.00%	0.07	OK
	LC59 at 25.00%	0.06	OK
	LC6 at 25.00%	0.07	OK
	LC60 at 25.00%	0.06	OK
	LC61 at 25.00%	0.06	OK
	LC62 at 25.00%	0.06	OK
	LC63 at 25.00%	0.06	OK
	LC64 at 25.00%	0.06	OK
	LC65 at 25.00%	0.06	OK
	LC66 at 25.00%	0.06	OK
	LC67 at 25.00%	0.06	OK
	LC68 at 25.00%	0.06	OK
	LC69 at 25.00%	0.06	OK
	LC7 at 25.00%	0.06	OK
	LC70 at 25.00%	0.06	OK
	LC71 at 25.00%	0.06	OK
	LC72 at 25.00%	0.06	OK
	LC73 at 25.00%	0.06	OK
	LC74 at 25.00%	0.06	OK
	LC75 at 25.00%	0.06	OK
	LC76 at 25.00%	0.06	OK
	LC77 at 25.00%	0.06	OK
	LC78 at 25.00%	0.06	OK
	LC79 at 25.00%	0.06	OK
	LC8 at 70.83%	0.05	OK
	LC80 at 25.00%	0.06	OK
	LC81 at 25.00%	0.06	OK
	LC82 at 25.00%	0.06	OK
	LC83 at 25.00%	0.06	OK
	LC84 at 25.00%	0.06	OK
	LC85 at 25.00%	0.06	OK
	LC86 at 25.00%	0.06	OK
	LC87 at 25.00%	0.06	OK
	LC88 at 25.00%	0.06	OK
	LC9 at 25.00%	0.05	OK
	W180 at 72.92%	0.01	OK
	W210 at 25.00%	0.01	OK
	W240 at 72.92%	0.01	OK
	W270 at 72.92%	0.01	OK
	W300 at 72.92%	0.01	OK
	W330 at 72.92%	0.01	OK
	WI180 at 72.92%	0.00	OK
	WI210 at 72.92%	0.00	OK
	WI240 at 25.00%	0.00	OK
	WI270 at 25.00%	0.00	OK
	WI300 at 25.00%	0.00	OK
	WI330 at 72.92%	0.00	OK
	WL180 at 72.92%	0.00	OK
	WL210 at 72.92%	0.00	OK
	WL240 at 25.00%	0.00	OK
	WL270 at 25.00%	0.00	OK
	WL300 at 25.00%	0.00	OK
	WL330 at 72.92%	0.00	OK
54	LC1 at 72.92%	0.19	OK

LC10 at 70.83%	0.11	OK
LC11 at 70.83%	0.10	OK
LC12 at 70.83%	0.13	OK
LC13 at 72.92%	0.19	OK
LC14 at 72.92%	0.12	OK
LC15 at 72.92%	0.09	OK
LC16 at 72.92%	0.10	OK
LC17 at 72.92%	0.09	OK
LC18 at 72.92%	0.12	OK
LC19 at 72.92%	0.19	OK
LC2 at 72.92%	0.12	OK
LC20 at 72.92%	0.12	OK
LC21 at 72.92%	0.09	OK
LC22 at 72.92%	0.10	OK
LC23 at 72.92%	0.09	OK
LC24 at 72.92%	0.12	OK
LC25 at 25.00%	0.12	OK
LC26 at 25.00%	0.12	OK
LC27 at 25.00%	0.12	OK
LC28 at 25.00%	0.12	OK
LC29 at 25.00%	0.12	OK
LC3 at 72.92%	0.09	OK
LC30 at 25.00%	0.12	OK
LC31 at 25.00%	0.12	OK
LC32 at 25.00%	0.12	OK
LC33 at 25.00%	0.12	OK
LC34 at 25.00%	0.11	OK
LC35 at 25.00%	0.12	OK
LC36 at 25.00%	0.12	OK
LC37 at 25.00%	0.05	OK
LC38 at 25.00%	0.07	OK
LC39 at 25.00%	0.07	OK
LC4 at 72.92%	0.10	OK
LC40 at 25.00%	0.18	OK
LC41 at 25.00%	0.07	OK
LC42 at 25.00%	0.08	OK
LC43 at 25.00%	0.07	OK
LC44 at 25.00%	0.07	OK
LC45 at 25.00%	0.08	OK
LC46 at 25.00%	0.08	OK
LC47 at 25.00%	0.08	OK
LC48 at 25.00%	0.08	OK
LC49 at 25.00%	0.07	OK
LC5 at 72.92%	0.09	OK
LC50 at 25.00%	0.07	OK
LC51 at 25.00%	0.07	OK
LC52 at 25.00%	0.07	OK
LC53 at 25.00%	0.07	OK
LC54 at 25.00%	0.07	OK
LC55 at 25.00%	0.07	OK
LC56 at 25.00%	0.07	OK
LC57 at 25.00%	0.07	OK
LC58 at 25.00%	0.07	OK
LC59 at 25.00%	0.07	OK
LC6 at 72.92%	0.12	OK
LC60 at 25.00%	0.07	OK
LC61 at 25.00%	0.07	OK
LC62 at 25.00%	0.07	OK
LC63 at 25.00%	0.07	OK
LC64 at 25.00%	0.07	OK
LC65 at 25.00%	0.07	OK
LC66 at 25.00%	0.07	OK
LC67 at 25.00%	0.07	OK
LC68 at 25.00%	0.07	OK

		LC69 at 25.00%	0.07	OK	
		LC7 at 72.92%	0.19	OK	Eq. H1-1b
		LC70 at 25.00%	0.07	OK	
		LC71 at 25.00%	0.07	OK	
		LC72 at 25.00%	0.07	OK	
		LC73 at 25.00%	0.07	OK	
		LC74 at 25.00%	0.07	OK	
		LC75 at 25.00%	0.07	OK	
		LC76 at 25.00%	0.07	OK	
		LC77 at 25.00%	0.22	OK	
		LC78 at 25.00%	0.22	OK	
		LC79 at 25.00%	0.22	OK	
		LC8 at 72.92%	0.12	OK	
		LC80 at 25.00%	0.22	OK	
		LC81 at 25.00%	0.22	OK	
		LC82 at 25.00%	0.22	OK	
		LC83 at 25.00%	**0.23**	**OK**	Eq. H1-1b
		LC84 at 25.00%	0.22	OK	
		LC85 at 25.00%	0.22	OK	
		LC86 at 25.00%	0.22	OK	
		LC87 at 25.00%	0.22	OK	
		LC88 at 25.00%	0.22	OK	
		LC9 at 70.83%	0.10	OK	
		W180 at 72.92%	0.12	OK	
		W210 at 72.92%	0.07	OK	
		W240 at 72.92%	0.06	OK	
		W270 at 72.92%	0.06	OK	
		W300 at 72.92%	0.06	OK	
		W330 at 72.92%	0.07	OK	
		WI180 at 72.92%	0.05	OK	
		WI210 at 72.92%	0.03	OK	
		WI240 at 72.92%	0.02	OK	
		WI270 at 72.92%	0.03	OK	
		WI300 at 72.92%	0.02	OK	
		WI330 at 72.92%	0.03	OK	
		WL180 at 72.92%	0.01	OK	
		WL210 at 72.92%	0.01	OK	
		WL240 at 72.92%	0.01	OK	
		WL270 at 72.92%	0.01	OK	
		WL300 at 72.92%	0.01	OK	
		WL330 at 72.92%	0.01	OK	
PL 3x3/8	**47**	LC1 at 0.00%	0.42	OK	
		LC10 at 0.00%	0.30	OK	
		LC11 at 0.00%	0.16	OK	
		LC12 at 100.00%	0.09	OK	
		LC13 at 0.00%	0.37	OK	
		LC14 at 0.00%	0.68	OK	
		LC15 at 0.00%	0.66	OK	
		LC16 at 0.00%	0.60	OK	
		LC17 at 0.00%	0.45	OK	
		LC18 at 0.00%	0.33	OK	
		LC19 at 0.00%	0.09	OK	
		LC2 at 0.00%	0.72	OK	
		LC20 at 0.00%	0.40	OK	
		LC21 at 0.00%	0.38	OK	
		LC22 at 0.00%	0.34	OK	
		LC23 at 0.00%	0.20	OK	
		LC24 at 100.00%	0.10	OK	
		LC25 at 0.00%	0.33	OK	
		LC26 at 0.00%	0.40	OK	
		LC27 at 0.00%	0.39	OK	
		LC28 at 0.00%	0.38	OK	
		LC29 at 0.00%	0.33	OK	

LC3 at 0.00%	0.70	OK	
LC30 at 0.00%	0.34	OK	
LC31 at 0.00%	0.23	OK	
LC32 at 0.00%	0.16	OK	
LC33 at 0.00%	0.17	OK	
LC34 at 0.00%	0.18	OK	
LC35 at 0.00%	0.23	OK	
LC36 at 0.00%	0.22	OK	
LC37 at 0.00%	0.14	OK	
LC38 at 0.00%	0.77	OK	
LC39 at 0.00%	0.27	OK	
LC4 at 0.00%	0.64	OK	
LC40 at 0.00%	0.24	OK	
LC41 at 0.00%	0.96	OK	
LC42 at 0.00%	**0.98**	**OK**	Eq. H1-1b
LC43 at 0.00%	0.97	OK	
LC44 at 0.00%	0.97	OK	
LC45 at 0.00%	0.96	OK	
LC46 at 0.00%	0.96	OK	
LC47 at 0.00%	0.93	OK	
LC48 at 0.00%	0.91	OK	
LC49 at 0.00%	0.92	OK	
LC5 at 0.00%	0.50	OK	
LC50 at 0.00%	0.92	OK	
LC51 at 0.00%	0.93	OK	
LC52 at 0.00%	0.93	OK	
LC53 at 0.00%	0.54	OK	
LC54 at 0.00%	0.56	OK	
LC55 at 0.00%	0.55	OK	
LC56 at 0.00%	0.55	OK	
LC57 at 0.00%	0.54	OK	
LC58 at 0.00%	0.54	OK	
LC59 at 0.00%	0.51	OK	
LC6 at 0.00%	0.37	OK	
LC60 at 0.00%	0.49	OK	
LC61 at 0.00%	0.50	OK	
LC62 at 0.00%	0.50	OK	
LC63 at 0.00%	0.51	OK	
LC64 at 0.00%	0.51	OK	
LC65 at 0.00%	0.09	OK	
LC66 at 0.00%	0.11	OK	
LC67 at 0.00%	0.11	OK	
LC68 at 0.00%	0.10	OK	
LC69 at 0.00%	0.09	OK	
LC7 at 100.00%	0.08	OK	
LC70 at 0.00%	0.09	OK	
LC71 at 100.00%	0.08	OK	
LC72 at 0.00%	0.08	OK	
LC73 at 0.00%	0.08	OK	
LC74 at 0.00%	0.08	OK	
LC75 at 100.00%	0.08	OK	
LC76 at 0.00%	0.08	OK	
LC77 at 0.00%	0.35	OK	
LC78 at 0.00%	0.33	OK	
LC79 at 0.00%	0.33	OK	
LC8 at 0.00%	0.35	OK	
LC80 at 0.00%	0.33	OK	
LC81 at 0.00%	0.34	OK	
LC82 at 0.00%	0.34	OK	
LC83 at 0.00%	0.37	OK	
LC84 at 0.00%	0.39	OK	
LC85 at 0.00%	0.39	OK	
LC86 at 0.00%	0.38	OK	
LC87 at 0.00%	0.37	OK	

	LC88 at 0.00%	0.38	OK
	LC9 at 0.00%	0.34	OK
	W180 at 0.00%	0.14	OK
	W210 at 0.00%	0.33	OK
	W240 at 0.00%	0.32	OK
	W270 at 0.00%	0.29	OK
	W300 at 0.00%	0.20	OK
	W330 at 0.00%	0.12	OK
	WI180 at 0.00%	0.05	OK
	WI210 at 0.00%	0.12	OK
	WI240 at 0.00%	0.11	OK
	WI270 at 0.00%	0.10	OK
	WI300 at 0.00%	0.05	OK
	WI330 at 0.00%	0.06	OK
	WL180 at 0.00%	0.01	OK
	WL210 at 0.00%	0.03	OK
	WL240 at 0.00%	0.03	OK
	WL270 at 0.00%	0.03	OK
	WL300 at 0.00%	0.01	OK
	WL330 at 0.00%	0.02	OK
48	LC1 at 0.00%	0.35	OK
	LC10 at 0.00%	0.72	OK
	LC11 at 0.00%	0.73	OK
	LC12 at 0.00%	0.74	OK
	LC13 at 0.00%	0.30	OK
	LC14 at 0.00%	0.13	OK
	LC15 at 0.00%	0.26	OK
	LC16 at 0.00%	0.38	OK
	LC17 at 0.00%	0.40	OK
	LC18 at 0.00%	0.40	OK
	LC19 at 100.00%	0.07	OK
	LC2 at 100.00%	0.11	OK
	LC20 at 0.00%	0.43	OK
	LC21 at 0.00%	0.55	OK
	LC22 at 0.00%	0.67	OK
	LC23 at 0.00%	0.68	OK
	LC24 at 0.00%	0.69	OK
	LC25 at 0.00%	0.37	OK
	LC26 at 0.00%	0.26	OK
	LC27 at 0.00%	0.27	OK
	LC28 at 0.00%	0.23	OK
	LC29 at 0.00%	0.23	OK
	LC3 at 0.00%	0.21	OK
	LC30 at 0.00%	0.21	OK
	LC31 at 0.00%	0.31	OK
	LC32 at 0.00%	0.42	OK
	LC33 at 0.00%	0.41	OK
	LC34 at 0.00%	0.45	OK
	LC35 at 0.00%	0.45	OK
	LC36 at 0.00%	0.46	OK
	LC37 at 0.00%	0.15	OK
	LC38 at 0.00%	0.27	OK
	LC39 at 0.00%	0.28	OK
	LC4 at 0.00%	0.34	OK
	LC40 at 0.00%	0.78	OK
	LC41 at 0.00%	0.38	OK
	LC42 at 0.00%	0.41	OK
	LC43 at 0.00%	0.41	OK
	LC44 at 0.00%	0.42	OK
	LC45 at 0.00%	0.42	OK
	LC46 at 0.00%	0.42	OK
	LC47 at 0.00%	0.39	OK
	LC48 at 0.00%	0.37	OK

LC49 at 0.00%	0.37	OK	
LC5 at 0.00%	0.35	OK	
LC50 at 0.00%	0.36	OK	
LC51 at 0.00%	0.36	OK	
LC52 at 0.00%	0.35	OK	
LC53 at 100.00%	0.12	OK	
LC54 at 0.00%	0.11	OK	
LC55 at 0.00%	0.11	OK	
LC56 at 0.00%	0.11	OK	
LC57 at 0.00%	0.11	OK	
LC58 at 0.00%	0.11	OK	
LC59 at 100.00%	0.12	OK	
LC6 at 0.00%	0.35	OK	
LC60 at 100.00%	0.11	OK	
LC61 at 100.00%	0.11	OK	
LC62 at 100.00%	0.11	OK	
LC63 at 100.00%	0.11	OK	
LC64 at 100.00%	0.11	OK	
LC65 at 0.00%	0.55	OK	
LC66 at 0.00%	0.52	OK	
LC67 at 0.00%	0.53	OK	
LC68 at 0.00%	0.52	OK	
LC69 at 0.00%	0.52	OK	
LC7 at 100.00%	0.09	OK	Eq. H1-1b
LC70 at 0.00%	0.51	OK	
LC71 at 0.00%	0.54	OK	
LC72 at 0.00%	0.57	OK	
LC73 at 0.00%	0.56	OK	
LC74 at 0.00%	0.57	OK	
LC75 at 0.00%	0.57	OK	
LC76 at 0.00%	0.58	OK	
LC77 at 0.00%	0.95	OK	
LC78 at 0.00%	0.92	OK	
LC79 at 0.00%	0.93	OK	
LC8 at 0.00%	0.48	OK	
LC80 at 0.00%	0.92	OK	
LC81 at 0.00%	0.92	OK	
LC82 at 0.00%	0.91	OK	
LC83 at 0.00%	0.94	OK	
LC84 at 0.00%	0.97	OK	
LC85 at 0.00%	0.97	OK	
LC86 at 0.00%	0.97	OK	
LC87 at 0.00%	0.98	OK	
LC88 at 0.00%	**0.98**	**OK**	Eq. H1-1b
LC9 at 0.00%	0.60	OK	
W180 at 0.00%	0.10	OK	
W210 at 0.00%	0.17	OK	
W240 at 0.00%	0.25	OK	
W270 at 0.00%	0.33	OK	
W300 at 0.00%	0.34	OK	
W330 at 0.00%	0.34	OK	
WI180 at 0.00%	0.03	OK	
WI210 at 0.00%	0.08	OK	
WI240 at 0.00%	0.07	OK	
WI270 at 0.00%	0.11	OK	
WI300 at 0.00%	0.11	OK	
WI330 at 0.00%	0.13	OK	
WL180 at 0.00%	0.01	OK	
WL210 at 0.00%	0.02	OK	
WL240 at 0.00%	0.02	OK	
WL270 at 0.00%	0.03	OK	
WL300 at 0.00%	0.03	OK	
WL330 at 0.00%	0.03	OK	

RndBar 1-1_2	**42**	LC1 at 0.00%	0.12	OK	
		LC10 at 0.00%	0.15	OK	
		LC11 at 0.00%	0.15	OK	
		LC12 at 0.00%	0.15	OK	
		LC13 at 0.00%	0.09	OK	
		LC14 at 0.00%	0.07	OK	
		LC15 at 0.00%	0.07	OK	
		LC16 at 0.00%	0.06	OK	
		LC17 at 0.00%	0.07	OK	
		LC18 at 0.00%	0.06	OK	
		LC19 at 0.00%	0.09	OK	
		LC2 at 0.00%	0.10	OK	
		LC20 at 0.00%	0.12	OK	
		LC21 at 0.00%	0.12	OK	
		LC22 at 0.00%	0.12	OK	
		LC23 at 0.00%	0.12	OK	
		LC24 at 0.00%	0.12	OK	
		LC25 at 0.00%	0.19	OK	
		LC26 at 0.00%	0.19	OK	
		LC27 at 0.00%	0.19	OK	
		LC28 at 0.00%	0.19	OK	
		LC29 at 0.00%	0.19	OK	
		LC3 at 0.00%	0.09	OK	
		LC30 at 0.00%	0.19	OK	
		LC31 at 0.00%	0.19	OK	
		LC32 at 0.00%	0.20	OK	
		LC33 at 0.00%	0.20	OK	
		LC34 at 0.00%	0.20	OK	
		LC35 at 0.00%	0.20	OK	
		LC36 at 0.00%	0.20	OK	
		LC37 at 0.00%	0.09	OK	
		LC38 at 0.00%	0.29	OK	
		LC39 at 0.00%	0.11	OK	
		LC4 at 0.00%	0.09	OK	
		LC40 at 0.00%	0.13	OK	
		LC41 at 0.00%	0.34	OK	
		LC42 at 0.00%	0.34	OK	
		LC43 at 0.00%	0.34	OK	
		LC44 at 0.00%	0.34	OK	
		LC45 at 0.00%	0.34	OK	
		LC46 at 0.00%	0.34	OK	
		LC47 at 0.00%	0.34	OK	
		LC48 at 0.00%	**0.35**	**OK**	Eq. H3-1
		LC49 at 0.00%	0.35	OK	
		LC5 at 0.00%	0.10	OK	
		LC50 at 0.00%	0.35	OK	
		LC51 at 0.00%	0.35	OK	
		LC52 at 0.00%	0.35	OK	
		LC53 at 0.00%	0.18	OK	
		LC54 at 0.00%	0.18	OK	
		LC55 at 0.00%	0.18	OK	
		LC56 at 0.00%	0.18	OK	
		LC57 at 0.00%	0.18	OK	
		LC58 at 0.00%	0.18	OK	
		LC59 at 0.00%	0.18	OK	
		LC6 at 0.00%	0.09	OK	
		LC60 at 0.00%	0.18	OK	
		LC61 at 0.00%	0.18	OK	
		LC62 at 0.00%	0.18	OK	
		LC63 at 0.00%	0.18	OK	
		LC64 at 0.00%	0.18	OK	
		LC65 at 0.00%	0.11	OK	
		LC66 at 0.00%	0.10	OK	
		LC67 at 0.00%	0.10	OK	

	LC68 at 0.00%	0.10	OK
	LC69 at 0.00%	0.10	OK
	LC7 at 0.00%	0.12	OK
	LC70 at 0.00%	0.10	OK
	LC71 at 0.00%	0.11	OK
	LC72 at 0.00%	0.11	OK
	LC73 at 0.00%	0.11	OK
	LC74 at 0.00%	0.11	OK
	LC75 at 0.00%	0.11	OK
	LC76 at 0.00%	0.11	OK
	LC77 at 0.00%	0.14	OK
	LC78 at 0.00%	0.14	OK
	LC79 at 0.00%	0.14	OK
	LC8 at 0.00%	0.15	OK
	LC80 at 0.00%	0.14	OK
	LC81 at 0.00%	0.14	OK
	LC82 at 0.00%	0.14	OK
	LC83 at 0.00%	0.14	OK
	LC84 at 0.00%	0.14	OK
	LC85 at 0.00%	0.14	OK
	LC86 at 0.00%	0.14	OK
	LC87 at 0.00%	0.14	OK
	LC88 at 0.00%	0.14	OK
	LC9 at 0.00%	0.15	OK
	W180 at 100.00%	0.03	OK
	W210 at 0.00%	0.03	OK
	W240 at 0.00%	0.03	OK
	W270 at 0.00%	0.02	OK
	W300 at 0.00%	0.02	OK
	W330 at 0.00%	0.02	OK
	WI180 at 100.00%	0.01	OK
	WI210 at 0.00%	0.01	OK
	WI240 at 0.00%	0.01	OK
	WI270 at 0.00%	0.01	OK
	WI300 at 0.00%	0.01	OK
	WI330 at 0.00%	0.01	OK
	WL180 at 100.00%	0.00	OK
	WL210 at 0.00%	0.00	OK
	WL240 at 0.00%	0.00	OK
	WL270 at 0.00%	0.00	OK
	WL300 at 0.00%	0.00	OK
	WL330 at 0.00%	0.00	OK
43	LC1 at 0.00%	0.12	OK
	LC10 at 0.00%	0.09	OK
	LC11 at 0.00%	0.10	OK
	LC12 at 0.00%	0.10	OK
	LC13 at 0.00%	0.09	OK
	LC14 at 0.00%	0.11	OK
	LC15 at 0.00%	0.11	OK
	LC16 at 0.00%	0.11	OK
	LC17 at 0.00%	0.10	OK
	LC18 at 0.00%	0.11	OK
	LC19 at 0.00%	0.09	OK
	LC2 at 0.00%	0.14	OK
	LC20 at 0.00%	0.07	OK
	LC21 at 0.00%	0.07	OK
	LC22 at 0.00%	0.06	OK
	LC23 at 0.00%	0.07	OK
	LC24 at 0.00%	0.07	OK
	LC25 at 0.00%	0.19	OK
	LC26 at 0.00%	0.19	OK
	LC27 at 0.00%	0.19	OK
	LC28 at 0.00%	0.19	OK

LC29 at 0.00%	0.19	OK	
LC3 at 0.00%	0.14	OK	
LC30 at 0.00%	0.19	OK	
LC31 at 0.00%	0.18	OK	
LC32 at 0.00%	0.18	OK	
LC33 at 0.00%	0.18	OK	
LC34 at 0.00%	0.18	OK	
LC35 at 0.00%	0.18	OK	
LC36 at 0.00%	0.18	OK	
LC37 at 0.00%	0.09	OK	
LC38 at 0.00%	0.28	OK	
LC39 at 0.00%	0.10	OK	
LC4 at 0.00%	0.14	OK	
LC40 at 0.00%	0.13	OK	
LC41 at 0.00%	0.33	OK	
LC42 at 0.00%	0.33	OK	
LC43 at 0.00%	0.33	OK	
LC44 at 0.00%	**0.33**	**OK**	Eq. H3-1
LC45 at 0.00%	0.33	OK	
LC46 at 0.00%	0.33	OK	
LC47 at 0.00%	0.33	OK	
LC48 at 0.00%	0.33	OK	
LC49 at 0.00%	0.33	OK	
LC5 at 0.00%	0.13	OK	
LC50 at 0.00%	0.33	OK	
LC51 at 0.00%	0.33	OK	
LC52 at 0.00%	0.33	OK	
LC53 at 0.00%	0.17	OK	
LC54 at 0.00%	0.17	OK	
LC55 at 0.00%	0.17	OK	
LC56 at 0.00%	0.17	OK	
LC57 at 0.00%	0.17	OK	
LC58 at 0.00%	0.17	OK	
LC59 at 0.00%	0.17	OK	
LC6 at 0.00%	0.14	OK	
LC60 at 0.00%	0.17	OK	
LC61 at 0.00%	0.17	OK	
LC62 at 0.00%	0.17	OK	
LC63 at 0.00%	0.17	OK	
LC64 at 0.00%	0.17	OK	
LC65 at 0.00%	0.10	OK	
LC66 at 0.00%	0.10	OK	
LC67 at 0.00%	0.10	OK	
LC68 at 0.00%	0.10	OK	
LC69 at 0.00%	0.10	OK	
LC7 at 0.00%	0.12	OK	
LC70 at 0.00%	0.10	OK	
LC71 at 0.00%	0.10	OK	
LC72 at 0.00%	0.10	OK	
LC73 at 0.00%	0.10	OK	
LC74 at 0.00%	0.10	OK	
LC75 at 0.00%	0.10	OK	
LC76 at 0.00%	0.10	OK	
LC77 at 0.00%	0.14	OK	
LC78 at 0.00%	0.14	OK	
LC79 at 0.00%	0.14	OK	
LC8 at 0.00%	0.09	OK	
LC80 at 0.00%	0.14	OK	
LC81 at 0.00%	0.14	OK	
LC82 at 0.00%	0.14	OK	
LC83 at 0.00%	0.14	OK	
LC84 at 0.00%	0.13	OK	
LC85 at 0.00%	0.13	OK	
LC86 at 0.00%	0.13	OK	

		LC87 at 0.00%	0.13	OK
		LC88 at 0.00%	0.13	OK
		LC9 at 0.00%	0.09	OK
		W180 at 100.00%	0.02	OK
		W210 at 0.00%	0.02	OK
		W240 at 0.00%	0.02	OK
		W270 at 0.00%	0.01	OK
		W300 at 0.00%	0.02	OK
		W330 at 0.00%	0.02	OK
		WI180 at 100.00%	0.01	OK
		WI210 at 0.00%	0.01	OK
		WI240 at 0.00%	0.01	OK
		WI270 at 0.00%	0.01	OK
		WI300 at 0.00%	0.01	OK
		WI330 at 0.00%	0.01	OK
		WL180 at 100.00%	0.00	OK
		WL210 at 0.00%	0.00	OK
		WL240 at 0.00%	0.00	OK
		WL270 at 0.00%	0.00	OK
		WL300 at 0.00%	0.00	OK
		WL330 at 0.00%	0.00	OK
RndBar 1-1_4	**39**	LC1 at 0.00%	0.16	OK
		LC10 at 0.00%	0.14	OK
		LC11 at 0.00%	0.15	OK
		LC12 at 0.00%	0.14	OK
		LC13 at 0.00%	0.13	OK
		LC14 at 0.00%	0.13	OK
		LC15 at 0.00%	0.12	OK
		LC16 at 0.00%	0.11	OK
		LC17 at 0.00%	0.11	OK
		LC18 at 0.00%	0.12	OK
		LC19 at 0.00%	0.09	OK
		LC2 at 0.00%	0.17	OK
		LC20 at 0.00%	0.08	OK
		LC21 at 0.00%	0.10	OK
		LC22 at 0.00%	0.11	OK
		LC23 at 0.00%	0.11	OK
		LC24 at 0.00%	0.10	OK
		LC25 at 0.00%	0.24	OK
		LC26 at 0.00%	0.24	OK
		LC27 at 0.00%	0.24	OK
		LC28 at 0.00%	0.24	OK
		LC29 at 0.00%	0.24	OK
		LC3 at 0.00%	0.16	OK
		LC30 at 0.00%	0.24	OK
		LC31 at 0.00%	0.23	OK
		LC32 at 0.00%	0.23	OK
		LC33 at 0.00%	0.23	OK
		LC34 at 0.00%	0.23	OK
		LC35 at 0.00%	0.24	OK
		LC36 at 0.00%	0.24	OK
		LC37 at 0.00%	0.11	OK
		LC38 at 0.00%	0.17	OK
		LC39 at 0.00%	0.13	OK
		LC4 at 0.00%	0.15	OK
		LC40 at 0.00%	0.33	OK
		LC41 at 0.00%	0.17	OK
		LC42 at 0.00%	0.18	OK
		LC43 at 0.00%	0.17	OK
		LC44 at 0.00%	0.17	OK
		LC45 at 0.00%	0.17	OK
		LC46 at 0.00%	0.17	OK
		LC47 at 0.00%	0.17	OK

LC48 at 0.00%	0.17	OK	
LC49 at 0.00%	0.17	OK	
LC5 at 0.00%	0.14	OK	
LC50 at 0.00%	0.17	OK	
LC51 at 0.00%	0.17	OK	
LC52 at 0.00%	0.17	OK	
LC53 at 0.00%	0.13	OK	
LC54 at 0.00%	0.13	OK	
LC55 at 0.00%	0.13	OK	
LC56 at 0.00%	0.13	OK	
LC57 at 0.00%	0.13	OK	
LC58 at 0.00%	0.13	OK	
LC59 at 0.00%	0.13	OK	
LC6 at 0.00%	0.15	OK	
LC60 at 0.00%	0.13	OK	
LC61 at 0.00%	0.13	OK	
LC62 at 0.00%	0.13	OK	
LC63 at 0.00%	0.13	OK	
LC64 at 0.00%	0.13	OK	
LC65 at 0.00%	0.21	OK	
LC66 at 0.00%	0.21	OK	
LC67 at 0.00%	0.21	OK	
LC68 at 0.00%	0.21	OK	
LC69 at 0.00%	0.21	OK	
LC7 at 0.00%	0.13	OK	
LC70 at 0.00%	0.21	OK	
LC71 at 0.00%	0.21	OK	
LC72 at 0.00%	0.21	OK	
LC73 at 0.00%	0.21	OK	
LC74 at 0.00%	0.21	OK	
LC75 at 0.00%	0.21	OK	
LC76 at 0.00%	0.21	OK	
LC77 at 0.00%	0.39	OK	
LC78 at 0.00%	**0.39**	**OK**	Eq. H3-1
LC79 at 0.00%	0.39	OK	
LC8 at 0.00%	0.12	OK	
LC80 at 0.00%	0.39	OK	
LC81 at 0.00%	0.39	OK	
LC82 at 0.00%	0.39	OK	
LC83 at 0.00%	0.39	OK	
LC84 at 0.00%	0.38	OK	
LC85 at 0.00%	0.39	OK	
LC86 at 0.00%	0.39	OK	
LC87 at 0.00%	0.39	OK	
LC88 at 0.00%	0.39	OK	
LC9 at 0.00%	0.13	OK	
W180 at 100.00%	0.04	OK	
W210 at 100.00%	0.02	OK	
W240 at 0.00%	0.02	OK	
W270 at 0.00%	0.01	OK	
W300 at 100.00%	0.02	OK	
W330 at 100.00%	0.02	OK	
WI180 at 100.00%	0.02	OK	
WI210 at 100.00%	0.01	OK	
WI240 at 0.00%	0.01	OK	
WI270 at 0.00%	0.00	OK	
WI300 at 100.00%	0.01	OK	
WI330 at 100.00%	0.01	OK	
WL180 at 100.00%	0.00	OK	
WL210 at 100.00%	0.00	OK	
WL240 at 100.00%	0.00	OK	
WL270 at 0.00%	0.00	OK	
WL300 at 100.00%	0.00	OK	
WL330 at 100.00%	0.00	OK	

40	LC1 at 0.00%	0.15	OK
	LC10 at 0.00%	0.14	OK
	LC11 at 0.00%	0.14	OK
	LC12 at 0.00%	0.16	OK
	LC13 at 0.00%	0.11	OK
	LC14 at 0.00%	0.09	OK
	LC15 at 0.00%	0.10	OK
	LC16 at 0.00%	0.10	OK
	LC17 at 0.00%	0.10	OK
	LC18 at 0.00%	0.08	OK
	LC19 at 0.00%	0.10	OK
	LC2 at 0.00%	0.13	OK
	LC20 at 0.00%	0.12	OK
	LC21 at 0.00%	0.11	OK
	LC22 at 0.00%	0.11	OK
	LC23 at 0.00%	0.11	OK
	LC24 at 0.00%	0.13	OK
	LC25 at 0.00%	0.23	OK
	LC26 at 0.00%	0.22	OK
	LC27 at 0.00%	0.22	OK
	LC28 at 0.00%	0.22	OK
	LC29 at 0.00%	0.22	OK
	LC3 at 0.00%	0.13	OK
	LC30 at 0.00%	0.22	OK
	LC31 at 0.00%	0.22	OK
	LC32 at 0.00%	0.23	OK
	LC33 at 0.00%	0.23	OK
	LC34 at 0.00%	0.23	OK
	LC35 at 0.00%	0.23	OK
	LC36 at 0.00%	0.23	OK
	LC37 at 0.00%	0.10	OK
	LC38 at 0.00%	0.16	OK
	LC39 at 0.00%	0.12	OK
	LC4 at 0.00%	0.13	OK
	LC40 at 0.00%	0.32	OK
	LC41 at 0.00%	0.16	OK
	LC42 at 0.00%	0.16	OK
	LC43 at 0.00%	0.16	OK
	LC44 at 0.00%	0.16	OK
	LC45 at 0.00%	0.16	OK
	LC46 at 0.00%	0.16	OK
	LC47 at 0.00%	0.16	OK
	LC48 at 0.00%	0.17	OK
	LC49 at 0.00%	0.17	OK
	LC5 at 0.00%	0.13	OK
	LC50 at 0.00%	0.16	OK
	LC51 at 0.00%	0.16	OK
	LC52 at 0.00%	0.17	OK
	LC53 at 0.00%	0.12	OK
	LC54 at 0.00%	0.12	OK
	LC55 at 0.00%	0.12	OK
	LC56 at 0.00%	0.12	OK
	LC57 at 0.00%	0.12	OK
	LC58 at 0.00%	0.12	OK
	LC59 at 0.00%	0.12	OK
	LC6 at 0.00%	0.12	OK
	LC60 at 0.00%	0.12	OK
	LC61 at 0.00%	0.12	OK
	LC62 at 0.00%	0.12	OK
	LC63 at 0.00%	0.12	OK
	LC64 at 0.00%	0.12	OK
	LC65 at 0.00%	0.20	OK
	LC66 at 0.00%	0.20	OK

LC67 at 0.00%	0.20	OK	
LC68 at 0.00%	0.20	OK	
LC69 at 0.00%	0.20	OK	
LC7 at 0.00%	0.13	OK	
LC70 at 0.00%	0.20	OK	
LC71 at 0.00%	0.20	OK	
LC72 at 0.00%	0.20	OK	
LC73 at 0.00%	0.20	OK	
LC74 at 0.00%	0.20	OK	
LC75 at 0.00%	0.20	OK	
LC76 at 0.00%	0.20	OK	
LC77 at 0.00%	0.37	OK	
LC78 at 0.00%	0.37	OK	
LC79 at 0.00%	0.37	OK	
LC8 at 0.00%	0.15	OK	
LC80 at 0.00%	0.37	OK	
LC81 at 0.00%	0.37	OK	
LC82 at 0.00%	0.37	OK	
LC83 at 0.00%	0.37	OK	
LC84 at 0.00%	0.38	OK	
LC85 at 0.00%	0.37	OK	
LC86 at 0.00%	0.37	OK	
LC87 at 0.00%	0.37	OK	
LC88 at 0.00%	**0.38**	**OK**	Eq. H3-1
LC9 at 0.00%	0.14	OK	
W180 at 100.00%	0.04	OK	
W210 at 100.00%	0.02	OK	
W240 at 0.00%	0.02	OK	
W270 at 0.00%	0.01	OK	
W300 at 0.00%	0.02	OK	
W330 at 100.00%	0.03	OK	
WI180 at 100.00%	0.02	OK	
WI210 at 100.00%	0.01	OK	
WI240 at 0.00%	0.01	OK	
WI270 at 0.00%	0.00	OK	
WI300 at 0.00%	0.01	OK	
WI330 at 100.00%	0.01	OK	
WL180 at 100.00%	0.00	OK	
WL210 at 100.00%	0.00	OK	
WL240 at 0.00%	0.00	OK	
WL270 at 0.00%	0.00	OK	
WL300 at 0.00%	0.00	OK	
WL330 at 100.00%	0.00	OK	

Bentley

Current Date: 6/13/2018 12:40 PM
Units system: English
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Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	-11.125	0.00	0.00	0
5	-6.625	0.00	0.00	0
6	-3.625	0.00	0.00	0
7	-5.9167	0.00	-1.00	0
8	-4.3333	0.00	-1.00	0
9	-7.125	0.00	0.00	0
10	-3.125	0.00	0.00	0
11	-7.125	0.00	0.20	0
13	-11.125	0.00	0.20	0
14	0.875	2.96	0.00	0
15	-11.125	2.96	0.00	0
18	-6.625	2.96	0.00	0
19	-3.625	2.96	0.00	0
20	-5.9167	2.96	-1.00	0
21	-4.3333	2.96	-1.00	0
22	-7.125	2.96	0.00	0
23	-3.125	2.96	0.00	0
24	-7.125	2.96	0.20	0
25	0.875	2.96	0.20	0
26	-11.125	2.96	0.20	0
40	-7.125	4.375	0.20	0
41	0.875	4.375	0.20	0

43	-7.125	-1.625	0.20	0
44	0.875	-1.625	0.20	0
65	-11.125	1.375	0.00	0
66	-9.00	1.375	-7.00	0
69	-3.125	0.00	0.20	0
70	-3.125	2.96	0.20	0
73	-4.3333	2.66	-1.00	0
74	-5.9167	2.66	-1.00	0
75	-4.3333	0.30	-1.00	0
76	-5.9167	0.30	-1.00	0
77	-4.3333	0.30	-1.40	0
78	-5.9167	0.30	-1.40	0
79	-4.3333	2.66	-1.40	0
80	-5.9167	2.66	-1.40	0
81	-5.125	2.66	-1.40	0
82	-5.125	0.30	-1.40	0
83	-5.125	4.00	-1.40	0
84	-5.125	-0.20	-1.40	0
85	-5.125	2.96	0.00	0
86	-5.125	0.00	0.00	0
87	-3.125	4.00	0.20	0
88	-3.125	-2.00	0.20	0
89	-11.125	-1.625	0.20	0
90	-11.125	4.375	0.20	0
12	0.875	0.00	0.20	0
1	0.875	0.00	0.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
66	1	1	1	1	1	1
83	1	1	1	1	1	1
84	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
47	77	75		PL 3x3/8	A36	0.00	0.00	0.00
48	78	76		PL 3x3/8	A36	0.00	0.00	0.00
1	8	7		LU 3X2X1_4	A36	0.00	0.00	0.00
2	8	6		LU 3X2X1_4	A36	0.00	0.00	0.00
3	7	5		LU 3X2X1_4	A36	0.00	0.00	0.00
4	1	2		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
8	21	20		LU 3X2X1_4	A36	0.00	0.00	0.00
9	21	19		LU 3X2X1_4	A36	0.00	0.00	0.00
10	20	18		LU 3X2X1_4	A36	0.00	0.00	0.00
11	14	15		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
16	40	43		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
18	22	9		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	15	2		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

20	14	1	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	7	20	L 2X2X3_16	A36	0.00	0.00	0.00
31	21	8	L 2X2X3_16	A36	0.00	0.00	0.00
32	23	10	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	66	65	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
39	22	24	RndBar 1-1_4	A36	0.00	0.00	0.00
40	9	11	RndBar 1-1_4	A36	0.00	0.00	0.00
42	10	69	RndBar 1-1_2	A36	0.00	0.00	0.00
43	23	70	RndBar 1-1_2	A36	0.00	0.00	0.00
45	79	73	C 3x1.5x0.1875	A36	0.00	0.00	0.00
46	80	74	C 3x1.5x0.1875	A36	0.00	0.00	0.00
49	79	80	C 3x1.5x0.1875	A36	0.00	0.00	0.00
50	77	78	C 3x1.5x0.1875	A36	0.00	0.00	0.00
51	84	83	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
52	86	85	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	87	88	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
17	41	44	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
54	90	89	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
47	180.00	0	0.00	0.00	0.00
1	270.00	0	0.00	0.00	0.00
3	270.00	0	0.00	0.00	0.00
4	270.00	0	0.00	0.00	0.00
8	180.00	0	0.00	0.00	0.00
9	90.00	0	0.00	0.00	0.00
10	180.00	0	0.00	0.00	0.00
11	180.00	0	0.00	0.00	0.00
16	45.00	0	-0.7071	0.00	-0.7071
18	45.00	0	0.00	0.00	0.00
19	45.00	0	0.00	0.00	0.00
20	45.00	0	0.00	0.00	0.00
30	0.00	2	0.00	0.00	1.00
31	0.00	2	0.00	0.00	1.00
32	45.00	0	0.00	0.00	0.00
45	180.00	0	0.00	0.00	0.00
49	180.00	0	0.00	0.00	0.00
50	180.00	0	0.00	0.00	0.00
51	0.00	2	1.00	0.00	0.00
52	0.00	2	1.00	0.00	0.00
53	45.00	0	-0.7071	0.00	-0.7071
17	45.00	0	-0.7071	0.00	-0.7071
54	45.00	0	-0.7071	0.00	-0.7071

HUDSON
Design Group LLC

Mount Calculations
(Proposed Conditions)

Bentley

Current Date: 6/13/2018 1:12 PM
Units system: English
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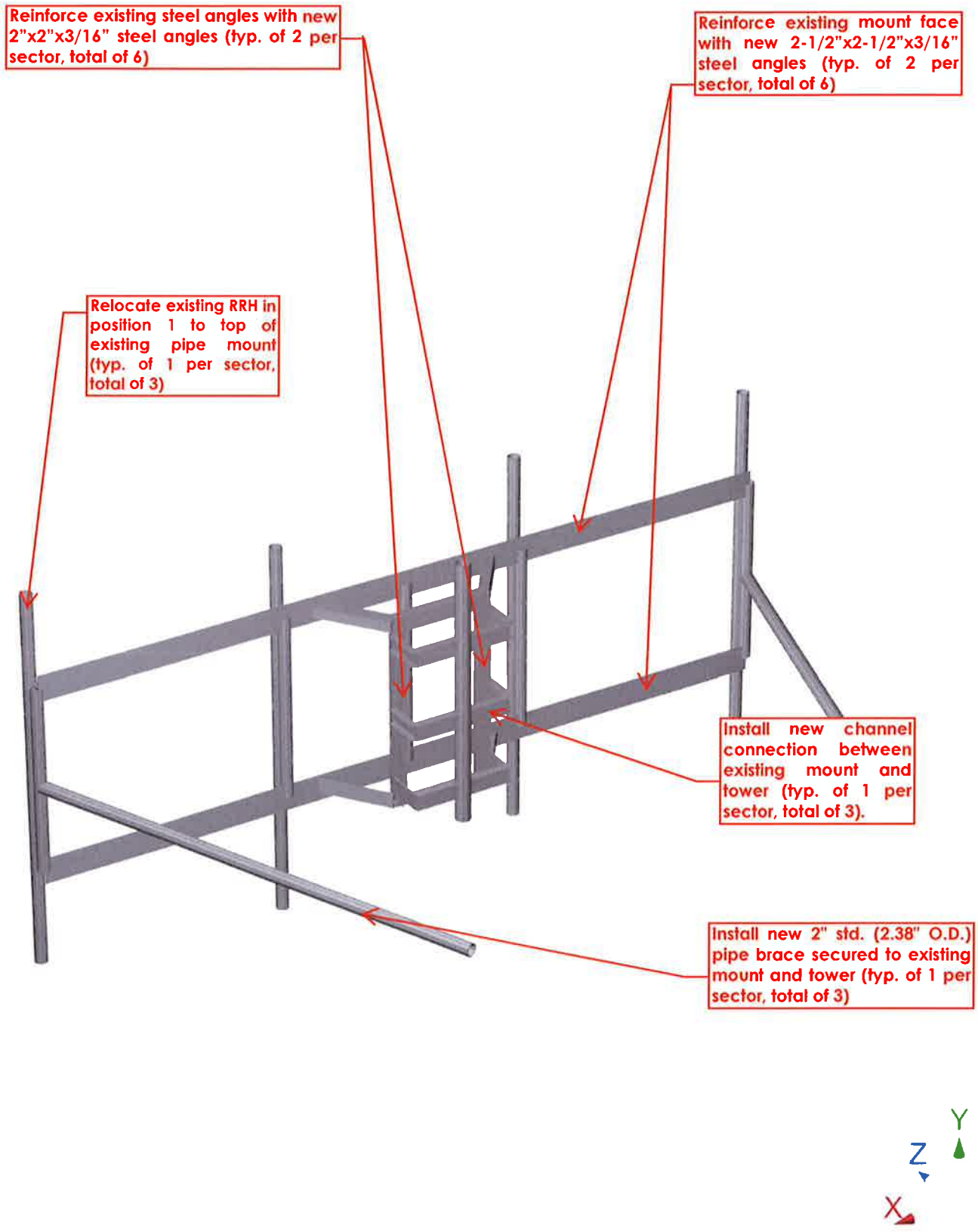

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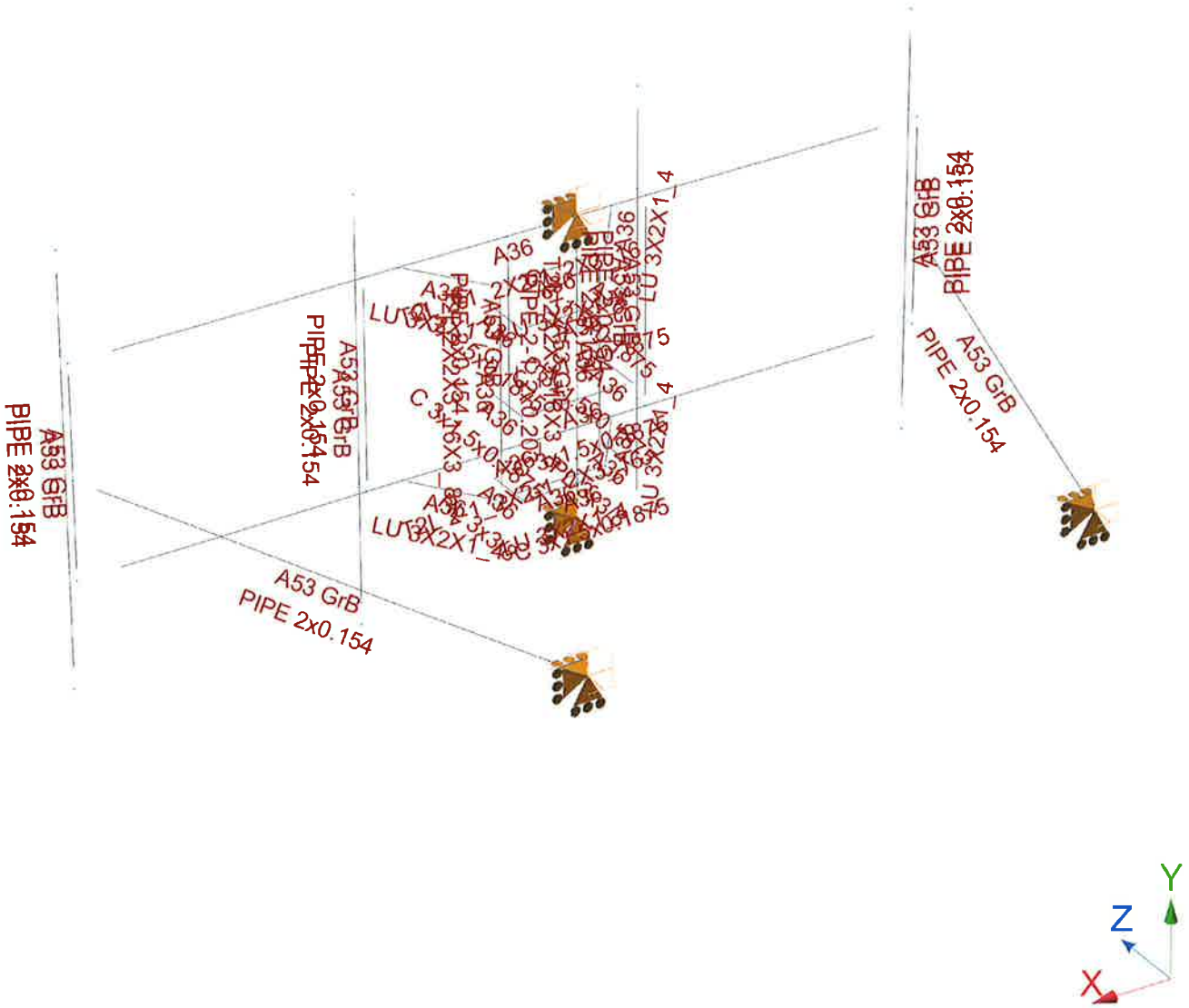

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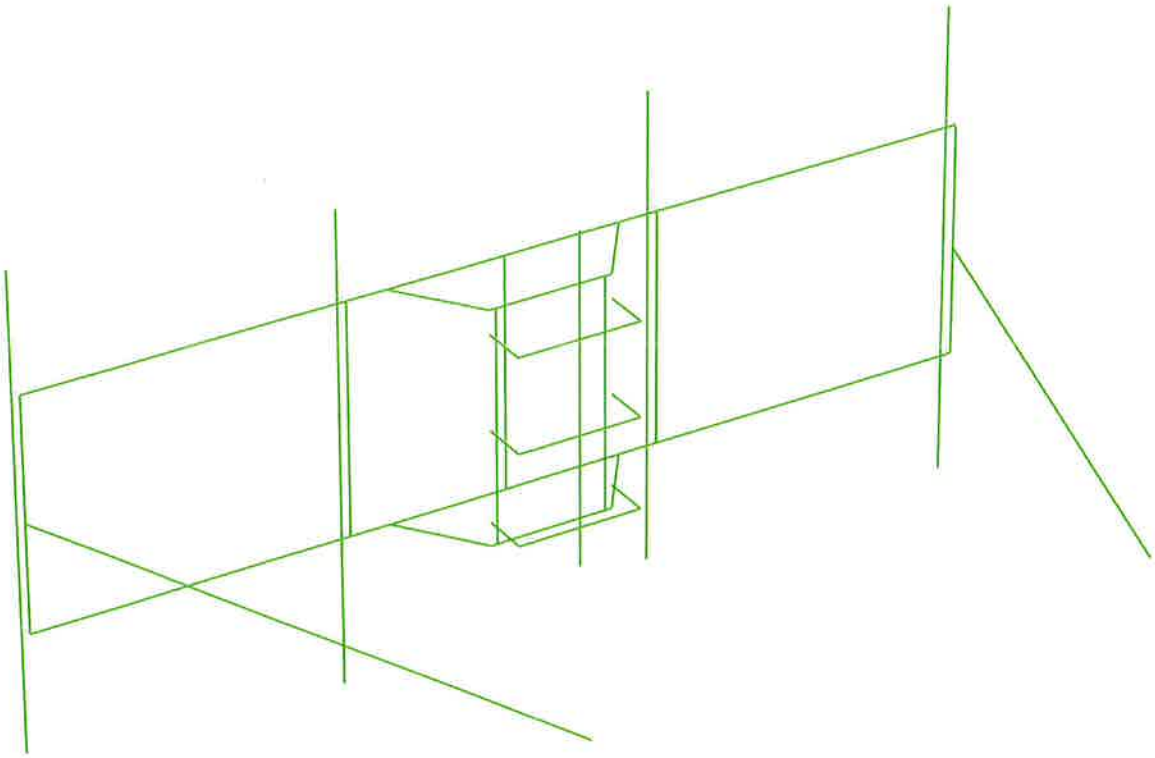
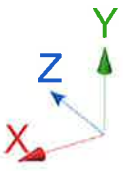
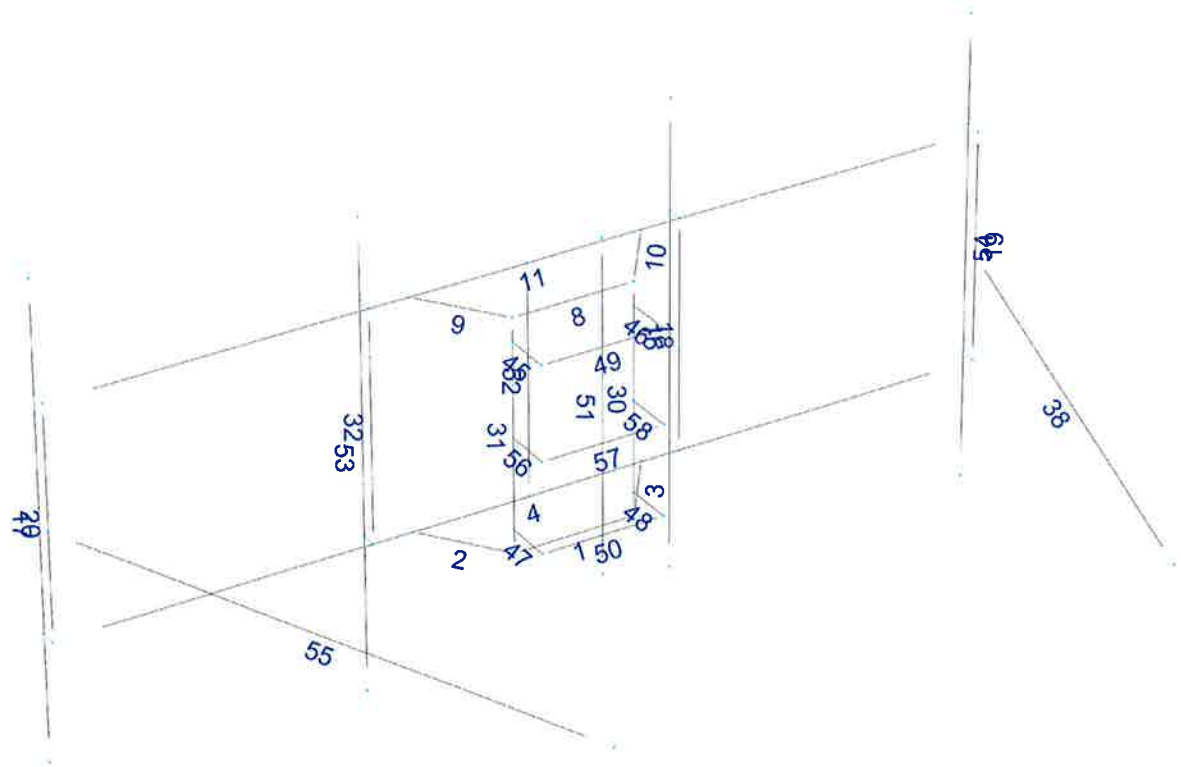
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT0968\CT0968 (Mod.).etz\

Design status

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



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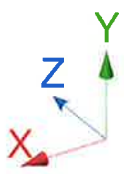
Y
Z
X

Bentley

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Units system: English
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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
	C 3x1.5x0.1875	**45**	LC1 at 100.00%	0.10	OK	
			LC10 at 0.00%	0.43	OK	
			LC11 at 0.00%	0.36	OK	
			LC12 at 0.00%	0.28	OK	
			LC13 at 100.00%	0.07	OK	
			LC14 at 0.00%	0.11	OK	
			LC15 at 0.00%	0.10	OK	
			LC16 at 0.00%	0.08	OK	
			LC17 at 100.00%	0.08	OK	

LC18 at 100.00%	0.09	OK	
LC19 at 0.00%	0.28	OK	
LC2 at 100.00%	0.09	OK	
LC20 at 0.00%	0.41	OK	
LC21 at 0.00%	0.40	OK	
LC22 at 0.00%	0.38	OK	
LC23 at 0.00%	0.31	OK	
LC24 at 0.00%	0.23	OK	
LC25 at 0.00%	0.29	OK	
LC26 at 0.00%	0.25	OK	
LC27 at 0.00%	0.26	OK	
LC28 at 0.00%	0.26	OK	
LC29 at 0.00%	0.29	OK	
LC3 at 100.00%	0.09	OK	
LC30 at 0.00%	0.28	OK	
LC31 at 0.00%	0.34	OK	
LC32 at 0.00%	0.37	OK	
LC33 at 0.00%	0.36	OK	
LC34 at 0.00%	0.36	OK	
LC35 at 0.00%	0.34	OK	
LC36 at 0.00%	0.34	OK	
LC37 at 0.00%	0.16	OK	
LC38 at 0.00%	0.51	OK	
LC39 at 0.00%	0.28	OK	
LC4 at 100.00%	0.09	OK	
LC40 at 100.00%	0.12	OK	
LC41 at 0.00%	0.60	OK	
LC42 at 0.00%	0.59	OK	
LC43 at 0.00%	0.59	OK	
LC44 at 0.00%	0.59	OK	
LC45 at 0.00%	0.60	OK	
LC46 at 0.00%	0.60	OK	
LC47 at 0.00%	0.61	OK	
LC48 at 0.00%	**0.62**	**OK**	Eq. H1-1b
LC49 at 0.00%	0.62	OK	
LC5 at 100.00%	0.10	OK	
LC50 at 0.00%	0.62	OK	
LC51 at 0.00%	0.61	OK	
LC52 at 0.00%	0.61	OK	
LC53 at 0.00%	0.41	OK	
LC54 at 0.00%	0.40	OK	
LC55 at 0.00%	0.40	OK	
LC56 at 0.00%	0.40	OK	
LC57 at 0.00%	0.41	OK	
LC58 at 0.00%	0.41	OK	
LC59 at 0.00%	0.42	OK	
LC6 at 0.00%	0.13	OK	
LC60 at 0.00%	0.43	OK	
LC61 at 0.00%	0.43	OK	
LC62 at 0.00%	0.43	OK	
LC63 at 0.00%	0.42	OK	
LC64 at 0.00%	0.42	OK	
LC65 at 0.00%	0.21	OK	
LC66 at 0.00%	0.20	OK	
LC67 at 0.00%	0.20	OK	
LC68 at 0.00%	0.20	OK	
LC69 at 0.00%	0.21	OK	
LC7 at 0.00%	0.33	OK	
LC70 at 0.00%	0.21	OK	
LC71 at 0.00%	0.22	OK	
LC72 at 0.00%	0.23	OK	
LC73 at 0.00%	0.23	OK	
LC74 at 0.00%	0.23	OK	
LC75 at 0.00%	0.22	OK	

	LC76 at 0.00%	0.22	OK
	LC77 at 100.00%	0.15	OK
	LC78 at 100.00%	0.15	OK
	LC79 at 100.00%	0.15	OK
	LC8 at 0.00%	0.46	OK
	LC80 at 100.00%	0.15	OK
	LC81 at 100.00%	0.15	OK
	LC82 at 100.00%	0.15	OK
	LC83 at 100.00%	0.15	OK
	LC84 at 100.00%	0.15	OK
	LC85 at 100.00%	0.15	OK
	LC86 at 100.00%	0.15	OK
	LC87 at 100.00%	0.15	OK
	LC88 at 100.00%	0.15	OK
	LC9 at 0.00%	0.45	OK
	W180 at 0.00%	0.08	OK
	W210 at 0.00%	0.16	OK
	W240 at 0.00%	0.15	OK
	W270 at 0.00%	0.14	OK
	W300 at 0.00%	0.10	OK
	W330 at 0.00%	0.05	OK
	WI180 at 0.00%	0.02	OK
	WI210 at 0.00%	0.06	OK
	WI240 at 0.00%	0.05	OK
	WI270 at 0.00%	0.05	OK
	WI300 at 0.00%	0.03	OK
	WI330 at 0.00%	0.03	OK
	WL180 at 0.00%	0.01	OK
	WL210 at 0.00%	0.02	OK
	WL240 at 0.00%	0.01	OK
	WL270 at 0.00%	0.01	OK
	WL300 at 0.00%	0.01	OK
	WL330 at 0.00%	0.01	OK
46	LC1 at 0.00%	0.18	OK
	LC10 at 100.00%	0.08	OK
	LC11 at 100.00%	0.08	OK
	LC12 at 100.00%	0.08	OK
	LC13 at 0.00%	0.12	OK
	LC14 at 0.00%	0.28	OK
	LC15 at 0.00%	0.35	OK
	LC16 at 0.00%	0.40	OK
	LC17 at 0.00%	0.40	OK
	LC18 at 0.00%	0.40	OK
	LC19 at 0.00%	0.23	OK
	LC2 at 0.00%	0.34	OK
	LC20 at 100.00%	0.08	OK
	LC21 at 100.00%	0.07	OK
	LC22 at 100.00%	0.07	OK
	LC23 at 0.00%	0.06	OK
	LC24 at 0.00%	0.06	OK
	LC25 at 0.00%	0.36	OK
	LC26 at 0.00%	0.40	OK
	LC27 at 0.00%	0.39	OK
	LC28 at 0.00%	0.41	OK
	LC29 at 0.00%	0.41	OK
	LC3 at 0.00%	0.40	OK
	LC30 at 0.00%	0.42	OK
	LC31 at 0.00%	0.37	OK
	LC32 at 0.00%	0.33	OK
	LC33 at 0.00%	0.33	OK
	LC34 at 0.00%	0.32	OK
	LC35 at 0.00%	0.32	OK
	LC36 at 0.00%	0.31	OK

LC37 at 0.00%	0.17	OK	
LC38 at 100.00%	0.13	OK	
LC39 at 0.00%	0.31	OK	
LC4 at 0.00%	0.46	OK	
LC40 at 0.00%	0.53	OK	
LC41 at 100.00%	0.15	OK	
LC42 at 100.00%	0.15	OK	
LC43 at 100.00%	0.15	OK	
LC44 at 100.00%	0.15	OK	
LC45 at 100.00%	0.15	OK	
LC46 at 100.00%	0.15	OK	
LC47 at 100.00%	0.15	OK	
LC48 at 100.00%	0.15	OK	
LC49 at 100.00%	0.15	OK	
LC5 at 0.00%	0.46	OK	
LC50 at 100.00%	0.15	OK	
LC51 at 100.00%	0.15	OK	
LC52 at 100.00%	0.15	OK	
LC53 at 0.00%	0.24	OK	
LC54 at 0.00%	0.25	OK	
LC55 at 0.00%	0.25	OK	
LC56 at 0.00%	0.26	OK	
LC57 at 0.00%	0.26	OK	
LC58 at 0.00%	0.26	OK	
LC59 at 0.00%	0.25	OK	
LC6 at 0.00%	0.46	OK	
LC60 at 0.00%	0.24	OK	
LC61 at 0.00%	0.24	OK	
LC62 at 0.00%	0.23	OK	
LC63 at 0.00%	0.23	OK	
LC64 at 0.00%	0.23	OK	
LC65 at 0.00%	0.44	OK	
LC66 at 0.00%	0.45	OK	
LC67 at 0.00%	0.45	OK	
LC68 at 0.00%	0.46	OK	
LC69 at 0.00%	0.46	OK	
LC7 at 0.00%	0.29	OK	
LC70 at 0.00%	0.46	OK	
LC71 at 0.00%	0.45	OK	
LC72 at 0.00%	0.43	OK	
LC73 at 0.00%	0.44	OK	
LC74 at 0.00%	0.43	OK	
LC75 at 0.00%	0.43	OK	
LC76 at 0.00%	0.43	OK	
LC77 at 0.00%	0.63	OK	
LC78 at 0.00%	0.64	OK	
LC79 at 0.00%	0.64	OK	
LC8 at 0.00%	0.12	OK	
LC80 at 0.00%	0.65	OK	
LC81 at 0.00%	0.65	OK	
LC82 at 0.00%	**0.65**	**OK**	Eq. H1-1b
LC83 at 0.00%	0.64	OK	
LC84 at 0.00%	0.62	OK	
LC85 at 0.00%	0.63	OK	
LC86 at 0.00%	0.62	OK	
LC87 at 0.00%	0.62	OK	
LC88 at 0.00%	0.62	OK	
LC9 at 100.00%	0.08	OK	
W180 at 0.00%	0.03	OK	
W210 at 0.00%	0.07	OK	
W240 at 0.00%	0.11	OK	
W270 at 0.00%	0.14	OK	
W300 at 0.00%	0.14	OK	
W330 at 0.00%	0.14	OK	

	WI180 at 0.00%	0.01	OK	
	WI210 at 0.00%	0.04	OK	
	WI240 at 0.00%	0.03	OK	
	WI270 at 0.00%	0.05	OK	
	WI300 at 0.00%	0.05	OK	
	WI330 at 0.00%	0.05	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 0.00%	0.01	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 0.00%	0.01	OK	
	WL300 at 0.00%	0.01	OK	
	WL330 at 0.00%	0.01	OK	
49	LC1 at 50.00%	0.33	OK	
	LC10 at 50.00%	0.52	OK	
	LC11 at 50.00%	0.48	OK	
	LC12 at 50.00%	0.42	OK	
	LC13 at 50.00%	0.23	OK	
	LC14 at 100.00%	0.28	OK	
	LC15 at 100.00%	0.34	OK	
	LC16 at 46.88%	0.41	OK	
	LC17 at 46.88%	0.46	OK	
	LC18 at 46.88%	0.50	OK	
	LC19 at 46.88%	0.43	OK	
	LC2 at 46.88%	0.36	OK	
	LC20 at 50.00%	0.49	OK	
	LC21 at 50.00%	0.45	OK	
	LC22 at 50.00%	0.43	OK	
	LC23 at 50.00%	0.38	OK	
	LC24 at 50.00%	0.32	OK	
	LC25 at 50.00%	0.62	OK	
	LC26 at 50.00%	0.60	OK	
	LC27 at 50.00%	0.60	OK	
	LC28 at 46.88%	0.61	OK	
	LC29 at 46.88%	0.62	OK	
	LC3 at 46.88%	0.43	OK	
	LC30 at 46.88%	0.63	OK	
	LC31 at 50.00%	0.64	OK	
	LC32 at 50.00%	0.66	OK	
	LC33 at 50.00%	0.66	OK	
	LC34 at 50.00%	0.65	OK	
	LC35 at 50.00%	0.64	OK	
	LC36 at 50.00%	0.64	OK	
	LC37 at 50.00%	0.31	OK	
	LC38 at 46.88%	0.65	OK	
	LC39 at 50.00%	0.55	OK	
	LC4 at 46.88%	0.50	OK	
	LC40 at 50.00%	0.70	OK	
	LC41 at 46.88%	0.73	OK	
	LC42 at 46.88%	0.74	OK	
	LC43 at 46.88%	0.74	OK	
	LC44 at 46.88%	0.75	OK	
	LC45 at 46.88%	0.75	OK	
	LC46 at 46.88%	0.75	OK	Eq. H1-1b
	LC47 at 46.88%	0.75	OK	
	LC48 at 46.88%	0.74	OK	
	LC49 at 46.88%	0.74	OK	
	LC5 at 46.88%	0.55	OK	
	LC50 at 46.88%	0.73	OK	
	LC51 at 46.88%	0.73	OK	
	LC52 at 46.88%	0.73	OK	
	LC53 at 46.88%	0.63	OK	
	LC54 at 46.88%	0.64	OK	
	LC55 at 46.88%	0.64	OK	

	LC56 at 46.88%	0.65	OK	
	LC57 at 46.88%	0.65	OK	
	LC58 at 46.88%	0.65	OK	
	LC59 at 46.88%	0.65	OK	
	LC6 at 46.88%	0.59	OK	
	LC60 at 46.88%	0.64	OK	
	LC61 at 46.88%	0.64	OK	
	LC62 at 46.88%	0.64	OK	
	LC63 at 46.88%	0.63	OK	
	LC64 at 46.88%	0.63	OK	
	LC65 at 50.00%	0.68	OK	
	LC66 at 50.00%	0.68	OK	
	LC67 at 50.00%	0.68	OK	
	LC68 at 50.00%	0.68	OK	
	LC69 at 50.00%	0.68	OK	
	LC7 at 46.88%	0.53	OK	
	LC70 at 50.00%	0.68	OK	
	LC71 at 50.00%	0.69	OK	
	LC72 at 50.00%	0.69	OK	
	LC73 at 50.00%	0.69	OK	
	LC74 at 50.00%	0.69	OK	
	LC75 at 50.00%	0.69	OK	
	LC76 at 50.00%	0.69	OK	
	LC77 at 50.00%	0.80	OK	
	LC78 at 50.00%	0.79	OK	
	LC79 at 50.00%	0.79	OK	
	LC8 at 50.00%	0.57	OK	
	LC80 at 50.00%	0.79	OK	
	LC81 at 50.00%	0.80	OK	
	LC82 at 50.00%	0.80	OK	
	LC83 at 50.00%	0.80	OK	
	LC84 at 50.00%	**0.81**	**OK**	Eq. H1-1b
	LC85 at 50.00%	0.81	OK	
	LC86 at 50.00%	0.81	OK	
	LC87 at 50.00%	0.80	OK	
	LC88 at 50.00%	0.80	OK	
	LC9 at 50.00%	0.54	OK	
	W180 at 46.88%	0.12	OK	
	W210 at 0.00%	0.16	OK	
	W240 at 0.00%	0.15	OK	
	W270 at 100.00%	0.14	OK	
	W300 at 46.88%	0.16	OK	
	W330 at 46.88%	0.19	OK	
	WI180 at 46.88%	0.04	OK	
	WI210 at 0.00%	0.06	OK	
	WI240 at 0.00%	0.05	OK	
	WI270 at 100.00%	0.05	OK	
	WI300 at 46.88%	0.06	OK	
	WI330 at 46.88%	0.07	OK	
	WL180 at 46.88%	0.01	OK	
	WL210 at 0.00%	0.02	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 46.88%	0.02	OK	
	WL330 at 46.88%	0.02	OK	
50	LC1 at 50.00%	0.60	OK	
	LC10 at 46.88%	0.64	OK	
	LC11 at 46.88%	0.69	OK	
	LC12 at 46.88%	0.75	OK	Eq. H1-1b
	LC13 at 46.88%	0.49	OK	
	LC14 at 50.00%	0.63	OK	
	LC15 at 50.00%	0.57	OK	
	LC16 at 50.00%	0.55	OK	

LC17 at 50.00%	0.48	OK
LC18 at 50.00%	0.38	OK
LC19 at 50.00%	0.22	OK
LC2 at 50.00%	0.72	OK
LC20 at 46.88%	0.31	OK
LC21 at 46.88%	0.43	OK
LC22 at 46.88%	0.55	OK
LC23 at 46.88%	0.60	OK
LC24 at 46.88%	0.66	OK
LC25 at 50.00%	0.73	OK
LC26 at 50.00%	0.77	OK
LC27 at 50.00%	0.76	OK
LC28 at 50.00%	0.76	OK
LC29 at 50.00%	0.74	OK
LC3 at 50.00%	0.67	OK
LC30 at 50.00%	0.74	OK
LC31 at 50.00%	0.70	OK
LC32 at 50.00%	0.67	OK
LC33 at 50.00%	0.67	OK
LC34 at 50.00%	0.68	OK
LC35 at 50.00%	0.70	OK
LC36 at 50.00%	0.69	OK
LC37 at 50.00%	0.35	OK
LC38 at 50.00%	0.68	OK
LC39 at 50.00%	0.63	OK
LC4 at 50.00%	0.65	OK
LC40 at 50.00%	0.70	OK
LC41 at 50.00%	0.77	OK
LC42 at 50.00%	0.78	OK
LC43 at 50.00%	0.78	OK
LC44 at 50.00%	0.78	OK
LC45 at 50.00%	0.77	OK
LC46 at 50.00%	0.77	OK
LC47 at 50.00%	0.76	OK
LC48 at 50.00%	0.74	OK
LC49 at 50.00%	0.75	OK
LC5 at 50.00%	0.59	OK
LC50 at 50.00%	0.75	OK
LC51 at 50.00%	0.75	OK
LC52 at 50.00%	0.75	OK
LC53 at 50.00%	0.66	OK
LC54 at 50.00%	0.67	OK
LC55 at 50.00%	0.67	OK
LC56 at 50.00%	0.66	OK
LC57 at 50.00%	0.66	OK
LC58 at 50.00%	0.66	OK
LC59 at 50.00%	0.65	OK
LC6 at 50.00%	0.49	OK
LC60 at 50.00%	0.64	OK
LC61 at 50.00%	0.64	OK
LC62 at 50.00%	0.64	OK
LC63 at 50.00%	0.65	OK
LC64 at 50.00%	0.65	OK
LC65 at 50.00%	0.74	OK
LC66 at 50.00%	0.75	OK
LC67 at 50.00%	0.75	OK
LC68 at 50.00%	0.75	OK
LC69 at 50.00%	0.74	OK
LC7 at 50.00%	0.34	OK
LC70 at 50.00%	0.74	OK
LC71 at 50.00%	0.73	OK
LC72 at 50.00%	0.72	OK
LC73 at 50.00%	0.72	OK
LC74 at 50.00%	0.73	OK

	LC75 at 50.00%	0.73	OK	
	LC76 at 50.00%	0.73	OK	
	LC77 at 50.00%	0.78	OK	
	LC78 at 50.00%	**0.79**	**OK**	Eq. H1-1b
	LC79 at 50.00%	0.79	OK	
	LC8 at 46.88%	0.40	OK	
	LC80 at 50.00%	0.79	OK	
	LC81 at 50.00%	0.78	OK	
	LC82 at 50.00%	0.78	OK	
	LC83 at 50.00%	0.77	OK	
	LC84 at 50.00%	0.76	OK	
	LC85 at 50.00%	0.77	OK	
	LC86 at 50.00%	0.77	OK	
	LC87 at 50.00%	0.77	OK	
	LC88 at 50.00%	0.77	OK	
	LC9 at 46.88%	0.52	OK	
	W180 at 46.88%	0.13	OK	
	W210 at 50.00%	0.22	OK	
	W240 at 50.00%	0.19	OK	
	W270 at 50.00%	0.17	OK	
	W300 at 46.88%	0.21	OK	
	W330 at 46.88%	0.24	OK	
	WI180 at 46.88%	0.04	OK	
	WI210 at 50.00%	0.07	OK	
	WI240 at 50.00%	0.06	OK	
	WI270 at 46.88%	0.06	OK	
	WI300 at 46.88%	0.07	OK	
	WI330 at 46.88%	0.08	OK	
	WL180 at 46.88%	0.01	OK	
	WL210 at 50.00%	0.02	OK	
	WL240 at 50.00%	0.02	OK	
	WL270 at 46.88%	0.02	OK	
	WL300 at 46.88%	0.02	OK	
	WL330 at 46.88%	0.02	OK	
56	LC1 at 100.00%	0.13	OK	
	LC10 at 0.00%	0.24	OK	
	LC11 at 0.00%	0.20	OK	
	LC12 at 0.00%	0.16	OK	
	LC13 at 100.00%	0.10	OK	
	LC14 at 0.00%	0.23	OK	
	LC15 at 0.00%	0.25	OK	
	LC16 at 0.00%	0.27	OK	
	LC17 at 0.00%	0.24	OK	
	LC18 at 0.00%	0.19	OK	
	LC19 at 100.00%	0.08	OK	
	LC2 at 0.00%	0.23	OK	
	LC20 at 0.00%	0.20	OK	
	LC21 at 0.00%	0.22	OK	
	LC22 at 0.00%	0.24	OK	
	LC23 at 0.00%	0.21	OK	
	LC24 at 0.00%	0.16	OK	
	LC25 at 100.00%	0.18	OK	
	LC26 at 100.00%	0.19	OK	
	LC27 at 100.00%	0.18	OK	
	LC28 at 100.00%	0.18	OK	
	LC29 at 100.00%	0.18	OK	
	LC3 at 0.00%	0.25	OK	
	LC30 at 100.00%	0.18	OK	
	LC31 at 100.00%	0.17	OK	
	LC32 at 100.00%	0.16	OK	
	LC33 at 100.00%	0.17	OK	
	LC34 at 100.00%	0.17	OK	
	LC35 at 100.00%	0.17	OK	

LC36 at 100.00%	0.17	OK	
LC37 at 100.00%	0.09	OK	
LC38 at 100.00%	0.27	OK	
LC39 at 100.00%	0.16	OK	
LC4 at 0.00%	0.28	OK	Eq. H1-1b
LC40 at 0.00%	0.06	OK	
LC41 at 100.00%	0.31	OK	
LC42 at 100.00%	**0.31**	**OK**	Eq. H1-1b
LC43 at 100.00%	0.31	OK	
LC44 at 100.00%	0.31	OK	
LC45 at 100.00%	0.31	OK	
LC46 at 100.00%	0.31	OK	
LC47 at 100.00%	0.31	OK	
LC48 at 100.00%	0.31	OK	
LC49 at 100.00%	0.31	OK	
LC5 at 0.00%	0.24	OK	
LC50 at 100.00%	0.31	OK	
LC51 at 100.00%	0.31	OK	
LC52 at 100.00%	0.31	OK	
LC53 at 100.00%	0.22	OK	
LC54 at 100.00%	0.22	OK	
LC55 at 100.00%	0.22	OK	
LC56 at 100.00%	0.22	OK	
LC57 at 100.00%	0.22	OK	
LC58 at 100.00%	0.22	OK	
LC59 at 100.00%	0.22	OK	
LC6 at 0.00%	0.19	OK	
LC60 at 100.00%	0.22	OK	
LC61 at 100.00%	0.22	OK	
LC62 at 100.00%	0.22	OK	
LC63 at 100.00%	0.22	OK	
LC64 at 100.00%	0.22	OK	
LC65 at 100.00%	0.13	OK	
LC66 at 100.00%	0.13	OK	
LC67 at 100.00%	0.13	OK	
LC68 at 100.00%	0.13	OK	
LC69 at 100.00%	0.13	OK	
LC7 at 100.00%	0.10	OK	
LC70 at 100.00%	0.13	OK	
LC71 at 100.00%	0.12	OK	
LC72 at 100.00%	0.12	OK	
LC73 at 100.00%	0.12	OK	
LC74 at 100.00%	0.12	OK	
LC75 at 100.00%	0.12	OK	
LC76 at 100.00%	0.12	OK	
LC77 at 0.00%	0.09	OK	
LC78 at 0.00%	0.07	OK	
LC79 at 0.00%	0.08	OK	
LC8 at 0.00%	0.19	OK	
LC80 at 0.00%	0.07	OK	
LC81 at 0.00%	0.08	OK	
LC82 at 0.00%	0.07	OK	
LC83 at 0.00%	0.09	OK	
LC84 at 0.00%	0.10	OK	
LC85 at 0.00%	0.10	OK	
LC86 at 0.00%	0.10	OK	
LC87 at 0.00%	0.10	OK	
LC88 at 0.00%	0.10	OK	
LC9 at 0.00%	0.22	OK	
W180 at 0.00%	0.02	OK	
W210 at 0.00%	0.13	OK	
W240 at 0.00%	0.15	OK	
W270 at 0.00%	0.16	OK	
W300 at 0.00%	0.14	OK	

	W330 at 0.00%	0.11	OK	
	WI180 at 0.00%	0.00	OK	
	WI210 at 0.00%	0.05	OK	
	WI240 at 0.00%	0.04	OK	
	WI270 at 0.00%	0.05	OK	
	WI300 at 0.00%	0.04	OK	
	WI330 at 0.00%	0.05	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 0.00%	0.01	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 0.00%	0.01	OK	
	WL300 at 0.00%	0.01	OK	
	WL330 at 0.00%	0.01	OK	
57	LC1 at 50.00%	0.30	OK	
.	LC10 at 100.00%	0.33	OK	Eq. H1-1b
	LC11 at 100.00%	0.31	OK	
	LC12 at 46.88%	0.31	OK	
	LC13 at 50.00%	0.23	OK	
	LC14 at 50.00%	0.28	OK	
	LC15 at 50.00%	0.26	OK	
	LC16 at 0.00%	0.27	OK	
	LC17 at 50.00%	0.24	OK	
	LC18 at 46.88%	0.21	OK	
	LC19 at 50.00%	0.15	OK	
	LC2 at 50.00%	0.34	OK	
	LC20 at 100.00%	0.22	OK	
	LC21 at 100.00%	0.27	OK	
	LC22 at 100.00%	0.31	OK	
	LC23 at 100.00%	0.30	OK	
	LC24 at 100.00%	0.28	OK	
	LC25 at 50.00%	0.40	OK	
	LC26 at 50.00%	0.41	OK	
	LC27 at 50.00%	0.41	OK	
	LC28 at 50.00%	0.41	OK	
	LC29 at 50.00%	0.40	OK	
	LC3 at 50.00%	0.33	OK	
	LC30 at 50.00%	0.40	OK	
	LC31 at 50.00%	0.39	OK	
	LC32 at 50.00%	0.38	OK	
	LC33 at 50.00%	0.38	OK	
	LC34 at 50.00%	0.38	OK	
	LC35 at 50.00%	0.39	OK	
	LC36 at 50.00%	0.38	OK	
	LC37 at 50.00%	0.19	OK	
	LC38 at 46.88%	0.39	OK	
	LC39 at 50.00%	0.34	OK	
	LC4 at 50.00%	0.32	OK	
	LC40 at 50.00%	0.49	OK	
	LC41 at 46.88%	0.45	OK	
	LC42 at 46.88%	0.44	OK	
	LC43 at 46.88%	0.44	OK	
	LC44 at 46.88%	0.44	OK	
	LC45 at 46.88%	0.44	OK	
	LC46 at 46.88%	0.44	OK	
	LC47 at 46.88%	0.44	OK	
	LC48 at 46.88%	0.45	OK	
	LC49 at 46.88%	0.45	OK	
	LC5 at 50.00%	0.30	OK	
	LC50 at 46.88%	0.45	OK	
	LC51 at 46.88%	0.45	OK	
	LC52 at 46.88%	0.45	OK	Eq. H1-1b
	LC53 at 46.88%	0.34	OK	
	LC54 at 46.88%	0.34	OK	

	LC55 at 46.88%	0.34	OK	
	LC56 at 46.88%	0.34	OK	
	LC57 at 46.88%	0.34	OK	
	LC58 at 46.88%	0.34	OK	
	LC59 at 46.88%	0.34	OK	
	LC6 at 50.00%	0.27	OK	
	LC60 at 46.88%	0.34	OK	
	LC61 at 46.88%	0.34	OK	
	LC62 at 46.88%	0.35	OK	
	LC63 at 46.88%	0.35	OK	
	LC64 at 46.88%	0.35	OK	
	LC65 at 50.00%	0.44	OK	
	LC66 at 50.00%	0.44	OK	
	LC67 at 50.00%	0.44	OK	
	LC68 at 50.00%	0.44	OK	
	LC69 at 50.00%	0.44	OK	
	LC7 at 50.00%	0.21	OK	
	LC70 at 50.00%	0.44	OK	
	LC71 at 50.00%	0.44	OK	
	LC72 at 50.00%	0.44	OK	
	LC73 at 50.00%	0.44	OK	
	LC74 at 50.00%	0.44	OK	
	LC75 at 50.00%	0.44	OK	
	LC76 at 50.00%	0.44	OK	
	LC77 at 50.00%	0.56	OK	
	LC78 at 50.00%	**0.56**	**OK**	Eq. H1-1b
	LC79 at 50.00%	0.56	OK	
	LC8 at 100.00%	0.23	OK	
	LC80 at 50.00%	0.56	OK	
	LC81 at 50.00%	0.56	OK	
	LC82 at 50.00%	0.56	OK	
	LC83 at 50.00%	0.56	OK	
	LC84 at 50.00%	0.55	OK	
	LC85 at 50.00%	0.55	OK	
	LC86 at 50.00%	0.55	OK	
	LC87 at 50.00%	0.56	OK	
	LC88 at 50.00%	0.56	OK	
	LC9 at 100.00%	0.28	OK	
	W180 at 46.88%	0.04	OK	
	W210 at 0.00%	0.13	OK	
	W240 at 0.00%	0.15	OK	
	W270 at 100.00%	0.17	OK	
	W300 at 100.00%	0.16	OK	
	W330 at 100.00%	0.14	OK	
	WI180 at 46.88%	0.01	OK	
	WI210 at 0.00%	0.05	OK	
	WI240 at 0.00%	0.04	OK	
	WI270 at 100.00%	0.06	OK	
	WI300 at 100.00%	0.05	OK	
	WI330 at 100.00%	0.06	OK	
	WL180 at 46.88%	0.00	OK	
	WL210 at 0.00%	0.01	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.01	OK	
	WL330 at 100.00%	0.01	OK	
58	LC1 at 100.00%	0.14	OK	
	LC10 at 0.00%	0.33	OK	Eq. H1-1b
	LC11 at 0.00%	0.31	OK	
	LC12 at 0.00%	0.29	OK	
	LC13 at 100.00%	0.11	OK	
	LC14 at 0.00%	0.12	OK	
	LC15 at 0.00%	0.17	OK	

LC16 at 0.00%	0.21	OK
LC17 at 0.00%	0.20	OK
LC18 at 0.00%	0.18	OK
LC19 at 100.00%	0.09	OK
LC2 at 0.00%	0.10	OK
LC20 at 0.00%	0.21	OK
LC21 at 0.00%	0.27	OK
LC22 at 0.00%	0.31	OK
LC23 at 0.00%	0.30	OK
LC24 at 0.00%	0.28	OK
LC25 at 100.00%	0.20	OK
LC26 at 100.00%	0.20	OK
LC27 at 100.00%	0.20	OK
LC28 at 100.00%	0.19	OK
LC29 at 100.00%	0.20	OK
LC3 at 0.00%	0.15	OK
LC30 at 100.00%	0.19	OK
LC31 at 100.00%	0.20	OK
LC32 at 100.00%	0.21	OK
LC33 at 100.00%	0.21	OK
LC34 at 100.00%	0.21	OK
LC35 at 100.00%	0.21	OK
LC36 at 100.00%	0.21	OK
LC37 at 100.00%	0.10	OK
LC38 at 100.00%	0.06	OK
LC39 at 100.00%	0.18	OK
LC4 at 0.00%	0.20	OK
LC40 at 100.00%	0.29	OK
LC41 at 0.00%	0.07	OK
LC42 at 0.00%	0.08	OK
LC43 at 0.00%	0.08	OK
LC44 at 0.00%	0.08	OK
LC45 at 0.00%	0.08	OK
LC46 at 0.00%	0.08	OK
LC47 at 0.00%	0.07	OK
LC48 at 0.00%	0.06	OK
LC49 at 0.00%	0.06	OK
LC5 at 0.00%	0.18	OK
LC50 at 0.00%	0.06	OK
LC51 at 0.00%	0.06	OK
LC52 at 0.00%	0.06	OK
LC53 at 100.00%	0.14	OK
LC54 at 100.00%	0.14	OK
LC55 at 100.00%	0.14	OK
LC56 at 100.00%	0.14	OK
LC57 at 100.00%	0.14	OK
LC58 at 100.00%	0.14	OK
LC59 at 100.00%	0.14	OK
LC6 at 0.00%	0.16	OK
LC60 at 100.00%	0.14	OK
LC61 at 100.00%	0.14	OK
LC62 at 100.00%	0.14	OK
LC63 at 100.00%	0.14	OK
LC64 at 100.00%	0.14	OK
LC65 at 100.00%	0.24	OK
LC66 at 100.00%	0.24	OK
LC67 at 100.00%	0.24	OK
LC68 at 100.00%	0.24	OK
LC69 at 100.00%	0.24	OK
LC7 at 100.00%	0.12	OK
LC70 at 100.00%	0.24	OK
LC71 at 100.00%	0.24	OK
LC72 at 100.00%	0.25	OK
LC73 at 100.00%	0.24	OK

		LC74 at 100.00%	0.25	OK	
		LC75 at 100.00%	0.25	OK	
		LC76 at 100.00%	0.25	OK	
		LC77 at 100.00%	0.33	OK	
		LC78 at 100.00%	0.33	OK	
		LC79 at 100.00%	0.33	OK	
		LC8 at 0.00%	0.23	OK	
		LC80 at 100.00%	0.33	OK	
		LC81 at 100.00%	0.33	OK	
		LC82 at 100.00%	0.33	OK	
		LC83 at 100.00%	0.33	OK	
		LC84 at 100.00%	0.34	OK	
		LC85 at 100.00%	0.34	OK	
		LC86 at 100.00%	0.34	OK	
		LC87 at 100.00%	0.34	OK	
		LC88 at 100.00%	**0.34**	**OK**	Eq. H1-1b
		LC9 at 0.00%	0.28	OK	
		W180 at 0.00%	0.02	OK	
		W210 at 0.00%	0.10	OK	
		W240 at 0.00%	0.14	OK	
		W270 at 0.00%	0.16	OK	
		W300 at 0.00%	0.15	OK	
		W330 at 0.00%	0.14	OK	
		WI180 at 0.00%	0.01	OK	
		WI210 at 0.00%	0.05	OK	
		WI240 at 0.00%	0.04	OK	
		WI270 at 0.00%	0.05	OK	
		WI300 at 0.00%	0.05	OK	
		WI330 at 0.00%	0.05	OK	
		WL180 at 0.00%	0.00	OK	
		WL210 at 0.00%	0.01	OK	
		WL240 at 0.00%	0.01	OK	
		WL270 at 0.00%	0.01	OK	
		WL300 at 0.00%	0.01	OK	
		WL330 at 0.00%	0.01	OK	
LU 3X2X1_4	**1**	LC1 at 0.00%	0.21	OK	
		LC10 at 100.00%	0.27	OK	
		LC11 at 100.00%	0.26	OK	
		LC12 at 100.00%	0.25	OK	
		LC13 at 0.00%	0.16	OK	
		LC14 at 0.00%	0.30	OK	
		LC15 at 0.00%	0.31	OK	
		LC16 at 0.00%	0.33	OK	
		LC17 at 0.00%	0.31	OK	
		LC18 at 0.00%	0.30	OK	
		LC19 at 0.00%	0.15	OK	
		LC2 at 0.00%	0.35	OK	
		LC20 at 100.00%	0.21	OK	
		LC21 at 100.00%	0.22	OK	
		LC22 at 100.00%	0.25	OK	
		LC23 at 100.00%	0.24	OK	
		LC24 at 100.00%	0.23	OK	
		LC25 at 0.00%	0.31	OK	
		LC26 at 0.00%	0.34	OK	
		LC27 at 0.00%	0.34	OK	
		LC28 at 0.00%	0.34	OK	
		LC29 at 0.00%	0.34	OK	
		LC3 at 0.00%	0.36	OK	
		LC30 at 0.00%	0.34	OK	
		LC31 at 0.00%	0.31	OK	
		LC32 at 0.00%	0.27	OK	
		LC33 at 0.00%	0.27	OK	
		LC34 at 0.00%	0.27	OK	

LC35 at 0.00%	0.27	OK	
LC36 at 0.00%	0.27	OK	
LC37 at 0.00%	0.16	OK	
LC38 at 0.00%	0.65	OK	
LC39 at 0.00%	0.29	OK	
LC4 at 0.00%	0.38	OK	
LC40 at 100.00%	0.44	OK	
LC41 at 0.00%	0.77	OK	
LC42 at 0.00%	0.78	OK	
LC43 at 0.00%	0.78	OK	
LC44 at 0.00%	**0.78**	**OK**	Eq. H2-1
LC45 at 0.00%	0.78	OK	
LC46 at 0.00%	0.78	OK	
LC47 at 0.00%	0.77	OK	
LC48 at 0.00%	0.76	OK	
LC49 at 0.00%	0.76	OK	
LC5 at 0.00%	0.37	OK	
LC50 at 0.00%	0.76	OK	
LC51 at 0.00%	0.76	OK	
LC52 at 0.00%	0.76	OK	
LC53 at 0.00%	0.46	OK	
LC54 at 0.00%	0.46	OK	
LC55 at 0.00%	0.46	OK	
LC56 at 0.00%	0.47	OK	
LC57 at 0.00%	0.46	OK	
LC58 at 0.00%	0.46	OK	
LC59 at 0.00%	0.45	OK	
LC6 at 0.00%	0.35	OK	
LC60 at 0.00%	0.45	OK	
LC61 at 0.00%	0.45	OK	
LC62 at 0.00%	0.44	OK	
LC63 at 0.00%	0.45	OK	
LC64 at 0.00%	0.45	OK	
LC65 at 100.00%	0.24	OK	
LC66 at 100.00%	0.23	OK	
LC67 at 100.00%	0.23	OK	
LC68 at 100.00%	0.23	OK	
LC69 at 100.00%	0.23	OK	
LC7 at 0.00%	0.20	OK	
LC70 at 100.00%	0.23	OK	
LC71 at 100.00%	0.24	OK	
LC72 at 100.00%	0.25	OK	
LC73 at 100.00%	0.25	OK	
LC74 at 100.00%	0.25	OK	
LC75 at 100.00%	0.25	OK	
LC76 at 100.00%	0.25	OK	
LC77 at 100.00%	0.54	OK	
LC78 at 100.00%	0.53	OK	
LC79 at 100.00%	0.53	OK	
LC8 at 100.00%	0.22	OK	
LC80 at 100.00%	0.52	OK	
LC81 at 100.00%	0.53	OK	
LC82 at 100.00%	0.52	OK	
LC83 at 100.00%	0.53	OK	
LC84 at 100.00%	0.55	OK	
LC85 at 100.00%	0.54	OK	
LC86 at 100.00%	0.55	OK	
LC87 at 100.00%	0.55	OK	
LC88 at 100.00%	0.55	OK	Eq. H2-1
LC9 at 100.00%	0.24	OK	
W180 at 100.00%	0.01	OK	
W210 at 100.00%	0.10	OK	
W240 at 100.00%	0.11	OK	
W270 at 100.00%	0.12	OK	

	W300 at 100.00%	0.11	OK	
	W330 at 100.00%	0.11	OK	
	WI180 at 100.00%	0.00	OK	
	WI210 at 100.00%	0.04	OK	
	WI240 at 100.00%	0.03	OK	
	WI270 at 100.00%	0.04	OK	
	WI300 at 100.00%	0.04	OK	
	WI330 at 100.00%	0.04	OK	
	WL180 at 100.00%	0.00	OK	
	WL210 at 100.00%	0.01	OK	
	WL240 at 100.00%	0.01	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.01	OK	
	WL330 at 100.00%	0.01	OK	
2	LC1 at 0.00%	0.31	OK	
	LC10 at 0.00%	0.49	OK	
	LC11 at 0.00%	0.46	OK	
	LC12 at 0.00%	0.44	OK	
	LC13 at 0.00%	0.23	OK	
	LC14 at 0.00%	0.24	OK	
	LC15 at 0.00%	0.25	OK	
	LC16 at 0.00%	0.26	OK	
	LC17 at 0.00%	0.23	OK	
	LC18 at 0.00%	0.21	OK	
	LC19 at 0.00%	0.27	OK	
	LC2 at 0.00%	0.28	OK	
	LC20 at 0.00%	0.40	OK	
	LC21 at 0.00%	0.41	OK	
	LC22 at 0.00%	0.41	OK	
	LC23 at 0.00%	0.38	OK	
	LC24 at 0.00%	0.35	OK	
	LC25 at 0.00%	0.49	OK	
	LC26 at 0.00%	0.46	OK	
	LC27 at 0.00%	0.46	OK	
	LC28 at 0.00%	0.46	OK	
	LC29 at 0.00%	0.47	OK	
	LC3 at 0.00%	0.28	OK	
	LC30 at 0.00%	0.46	OK	
	LC31 at 0.00%	0.50	OK	
	LC32 at 0.00%	0.53	OK	
	LC33 at 0.00%	0.52	OK	
	LC34 at 0.00%	0.53	OK	
	LC35 at 0.00%	0.52	OK	
	LC36 at 0.00%	0.52	OK	
	LC37 at 0.00%	0.24	OK	
	LC38 at 0.00%	0.51	OK	
	LC39 at 0.00%	0.45	OK	
	LC4 at 0.00%	0.29	OK	
	LC40 at 0.00%	0.37	OK	
	LC41 at 0.00%	0.55	OK	
	LC42 at 0.00%	0.55	OK	
	LC43 at 0.00%	0.55	OK	
	LC44 at 0.00%	0.55	OK	
	LC45 at 0.00%	0.55	OK	
	LC46 at 0.00%	0.55	OK	
	LC47 at 0.00%	0.56	OK	
	LC48 at 0.00%	0.56	OK	
	LC49 at 0.00%	0.56	OK	
	LC5 at 0.00%	0.26	OK	
	LC50 at 0.00%	**0.56**	**OK**	Eq. H2-1
	LC51 at 0.00%	0.56	OK	
	LC52 at 0.00%	0.56	OK	
	LC53 at 0.00%	0.53	OK	

	LC54 at 0.00%	0.52	OK
	LC55 at 0.00%	0.52	OK
	LC56 at 0.00%	0.52	OK
	LC57 at 0.00%	0.52	OK
	LC58 at 0.00%	0.52	OK
	LC59 at 0.00%	0.53	OK
	LC6 at 0.00%	0.25	OK
	LC60 at 0.00%	0.54	OK
	LC61 at 0.00%	0.54	OK
	LC62 at 0.00%	0.54	OK
	LC63 at 0.00%	0.54	OK
	LC64 at 0.00%	0.54	OK
	LC65 at 0.00%	0.43	OK
	LC66 at 0.00%	0.42	OK
	LC67 at 0.00%	0.42	OK
	LC68 at 0.00%	0.42	OK
	LC69 at 0.00%	0.42	OK
	LC7 at 0.00%	0.35	OK
	LC70 at 0.00%	0.42	OK
	LC71 at 0.00%	0.43	OK
	LC72 at 0.00%	0.44	OK
	LC73 at 0.00%	0.44	OK
	LC74 at 0.00%	0.44	OK
	LC75 at 0.00%	0.44	OK
	LC76 at 0.00%	0.44	OK
	LC77 at 0.00%	0.39	OK
	LC78 at 0.00%	0.38	OK
	LC79 at 0.00%	0.38	OK
	LC8 at 0.00%	0.48	OK
	LC80 at 0.00%	0.38	OK
	LC81 at 0.00%	0.38	OK
	LC82 at 0.00%	0.38	OK
	LC83 at 0.00%	0.39	OK
	LC84 at 0.00%	0.40	OK
	LC85 at 0.00%	0.40	OK
	LC86 at 0.00%	0.40	OK
	LC87 at 0.00%	0.40	OK
	LC88 at 0.00%	0.40	OK
	LC9 at 0.00%	0.48	OK
	W180 at 100.00%	0.03	OK
	W210 at 100.00%	0.11	OK
	W240 at 100.00%	0.11	OK
	W270 at 100.00%	0.11	OK
	W300 at 100.00%	0.09	OK
	W330 at 100.00%	0.07	OK
	WI180 at 100.00%	0.01	OK
	WI210 at 100.00%	0.04	OK
	WI240 at 100.00%	0.04	OK
	WI270 at 100.00%	0.04	OK
	WI300 at 100.00%	0.03	OK
	WI330 at 100.00%	0.03	OK
	WL180 at 100.00%	0.00	OK
	WL210 at 100.00%	0.01	OK
	WL240 at 100.00%	0.01	OK
	WL270 at 100.00%	0.01	OK
	WL300 at 100.00%	0.01	OK
	WL330 at 100.00%	0.01	OK
3	LC1 at 0.00%	0.34	OK
	LC10 at 0.00%	0.28	OK
	LC11 at 0.00%	0.27	OK
	LC12 at 0.00%	0.28	OK
	LC13 at 0.00%	0.25	OK
	LC14 at 0.00%	0.33	OK

LC15 at 0.00%	0.36	OK
LC16 at 0.00%	0.40	OK
LC17 at 0.00%	0.41	OK
LC18 at 0.00%	0.41	OK
LC19 at 0.00%	0.33	OK
LC2 at 0.00%	0.42	OK
LC20 at 0.00%	0.24	OK
LC21 at 0.00%	0.21	OK
LC22 at 100.00%	0.21	OK
LC23 at 100.00%	0.23	OK
LC24 at 100.00%	0.23	OK
LC25 at 0.00%	0.58	OK
LC26 at 0.00%	0.60	OK
LC27 at 0.00%	0.59	OK
LC28 at 0.00%	0.60	OK
LC29 at 0.00%	0.60	OK
LC3 at 0.00%	0.46	OK
LC30 at 0.00%	0.61	OK
LC31 at 0.00%	0.59	OK
LC32 at 0.00%	0.57	OK
LC33 at 0.00%	0.57	OK
LC34 at 0.00%	0.56	OK
LC35 at 0.00%	0.56	OK
LC36 at 0.00%	0.56	OK
LC37 at 0.00%	0.28	OK
LC38 at 0.00%	0.33	OK
LC39 at 0.00%	0.52	OK
LC4 at 0.00%	0.49	OK
LC40 at 0.00%	0.71	OK
LC41 at 0.00%	0.32	OK
LC42 at 0.00%	0.33	OK
LC43 at 0.00%	0.33	OK
LC44 at 0.00%	0.33	OK
LC45 at 0.00%	0.33	OK
LC46 at 0.00%	0.33	OK
LC47 at 0.00%	0.33	OK
LC48 at 0.00%	0.32	OK
LC49 at 0.00%	0.32	OK
LC5 at 0.00%	0.50	OK
LC50 at 0.00%	0.32	OK
LC51 at 0.00%	0.32	OK
LC52 at 0.00%	0.32	OK
LC53 at 0.00%	0.46	OK
LC54 at 0.00%	0.46	OK
LC55 at 0.00%	0.46	OK
LC56 at 0.00%	0.46	OK
LC57 at 0.00%	0.46	OK
LC58 at 0.00%	0.46	OK
LC59 at 0.00%	0.46	OK
LC6 at 0.00%	0.50	OK
LC60 at 0.00%	0.46	OK
LC61 at 0.00%	0.46	OK
LC62 at 0.00%	0.45	OK
LC63 at 0.00%	0.45	OK
LC64 at 0.00%	0.45	OK
LC65 at 0.00%	0.66	OK
LC66 at 0.00%	0.66	OK
LC67 at 0.00%	0.66	OK
LC68 at 0.00%	0.66	OK
LC69 at 0.00%	0.66	OK
LC7 at 0.00%	0.42	OK
LC70 at 0.00%	0.66	OK
LC71 at 0.00%	0.66	OK
LC72 at 0.00%	0.65	OK

	LC73 at 0.00%	0.65	OK	
	LC74 at 0.00%	0.65	OK	
	LC75 at 0.00%	0.65	OK	
	LC76 at 0.00%	0.65	OK	
	LC77 at 0.00%	0.78	OK	
	LC78 at 0.00%	0.79	OK	
	LC79 at 0.00%	0.79	OK	
	LC8 at 0.00%	0.33	OK	
	LC80 at 0.00%	0.79	OK	
	LC81 at 0.00%	0.79	OK	
	LC82 at 0.00%	**0.79**	**OK**	Eq. H2-1
	LC83 at 0.00%	0.79	OK	
	LC84 at 0.00%	0.78	OK	
	LC85 at 0.00%	0.78	OK	
	LC86 at 0.00%	0.78	OK	
	LC87 at 0.00%	0.78	OK	
	LC88 at 0.00%	0.78	OK	
	LC9 at 0.00%	0.30	OK	
	W180 at 100.00%	0.06	OK	
	W210 at 0.00%	0.08	OK	
	W240 at 0.00%	0.11	OK	
	W270 at 100.00%	0.14	OK	
	W300 at 100.00%	0.15	OK	
	W330 at 100.00%	0.15	OK	
	WI180 at 100.00%	0.02	OK	
	WI210 at 0.00%	0.04	OK	
	WI240 at 0.00%	0.03	OK	
	WI270 at 100.00%	0.05	OK	
	WI300 at 100.00%	0.05	OK	
	WI330 at 100.00%	0.06	OK	
	WL180 at 100.00%	0.01	OK	
	WL210 at 0.00%	0.01	OK	
	WL240 at 0.00%	0.01	OK	
	WL270 at 100.00%	0.01	OK	
	WL300 at 100.00%	0.01	OK	
	WL330 at 100.00%	0.02	OK	
8	LC1 at 0.00%	0.14	OK	
	LC10 at 0.00%	0.17	OK	
	LC11 at 0.00%	0.17	OK	
	LC12 at 0.00%	0.19	OK	
	LC13 at 0.00%	0.12	OK	
	LC14 at 100.00%	0.15	OK	
	LC15 at 100.00%	0.14	OK	
	LC16 at 100.00%	0.16	OK	
	LC17 at 100.00%	0.16	OK	
	LC18 at 100.00%	0.16	OK	
	LC19 at 100.00%	0.11	OK	
	LC2 at 100.00%	0.18	OK	
	LC20 at 0.00%	0.12	OK	
	LC21 at 0.00%	0.12	OK	
	LC22 at 0.00%	0.15	OK	
	LC23 at 0.00%	0.15	OK	
	LC24 at 0.00%	0.16	OK	
	LC25 at 100.00%	0.20	OK	
	LC26 at 100.00%	0.21	OK	
	LC27 at 100.00%	0.21	OK	
	LC28 at 100.00%	0.22	OK	
	LC29 at 100.00%	0.22	OK	
	LC3 at 100.00%	0.17	OK	
	LC30 at 100.00%	0.22	OK	
	LC31 at 100.00%	0.21	OK	
	LC32 at 100.00%	0.20	OK	
	LC33 at 100.00%	0.20	OK	

LC34 at 100.00%	0.20	OK	
LC35 at 100.00%	0.20	OK	
LC36 at 100.00%	0.20	OK	
LC37 at 100.00%	0.10	OK	
LC38 at 0.00%	0.40	OK	
LC39 at 100.00%	0.17	OK	
LC4 at 100.00%	0.19	OK	
LC40 at 100.00%	0.41	OK	
LC41 at 0.00%	0.47	OK	
LC42 at 0.00%	0.47	OK	
LC43 at 0.00%	0.47	OK	
LC44 at 0.00%	0.46	OK	
LC45 at 0.00%	0.46	OK	
LC46 at 0.00%	0.46	OK	
LC47 at 0.00%	0.47	OK	
LC48 at 0.00%	0.47	OK	
LC49 at 0.00%	0.47	OK	
LC5 at 100.00%	0.19	OK	
LC50 at 0.00%	0.47	OK	
LC51 at 0.00%	0.47	OK	
LC52 at 0.00%	0.47	OK	Eq. H2-1
LC53 at 0.00%	0.27	OK	
LC54 at 0.00%	0.26	OK	
LC55 at 0.00%	0.26	OK	
LC56 at 0.00%	0.26	OK	
LC57 at 0.00%	0.26	OK	
LC58 at 0.00%	0.26	OK	
LC59 at 0.00%	0.27	OK	
LC6 at 100.00%	0.19	OK	
LC60 at 0.00%	0.27	OK	
LC61 at 0.00%	0.27	OK	
LC62 at 0.00%	0.27	OK	
LC63 at 0.00%	0.27	OK	
LC64 at 0.00%	0.27	OK	
LC65 at 100.00%	0.28	OK	
LC66 at 100.00%	0.29	OK	
LC67 at 100.00%	0.29	OK	
LC68 at 100.00%	0.29	OK	
LC69 at 100.00%	0.29	OK	
LC7 at 100.00%	0.14	OK	
LC70 at 100.00%	0.29	OK	
LC71 at 100.00%	0.29	OK	
LC72 at 100.00%	0.28	OK	
LC73 at 100.00%	0.28	OK	
LC74 at 100.00%	0.28	OK	
LC75 at 100.00%	0.28	OK	
LC76 at 100.00%	0.28	OK	
LC77 at 100.00%	0.48	OK	
LC78 at 100.00%	0.49	OK	
LC79 at 100.00%	0.49	OK	
LC8 at 100.00%	0.14	OK	
LC80 at 100.00%	0.49	OK	
LC81 at 100.00%	0.49	OK	
LC82 at 100.00%	**0.49**	**OK**	Eq. H2-1
LC83 at 100.00%	0.49	OK	
LC84 at 100.00%	0.48	OK	
LC85 at 100.00%	0.48	OK	
LC86 at 100.00%	0.48	OK	
LC87 at 100.00%	0.48	OK	
LC88 at 100.00%	0.48	OK	
LC9 at 0.00%	0.15	OK	
W180 at 0.00%	0.02	OK	
W210 at 100.00%	0.03	OK	
W240 at 100.00%	0.03	OK	

	W270 at 100.00%	0.04	OK	
	W300 at 0.00%	0.04	OK	
	W330 at 0.00%	0.05	OK	
	WI180 at 0.00%	0.01	OK	
	WI210 at 100.00%	0.01	OK	
	WI240 at 100.00%	0.01	OK	
	WI270 at 0.00%	0.02	OK	
	WI300 at 0.00%	0.02	OK	
	WI330 at 0.00%	0.02	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 100.00%	0.00	OK	
	WL240 at 100.00%	0.00	OK	
	WL270 at 0.00%	0.00	OK	
	WL300 at 0.00%	0.00	OK	
	WL330 at 0.00%	0.01	OK	
9	LC1 at 0.00%	0.49	OK	
	LC10 at 0.00%	0.30	OK	
	LC11 at 0.00%	0.34	OK	
	LC12 at 0.00%	0.37	OK	
	LC13 at 0.00%	0.39	OK	
	LC14 at 0.00%	0.47	OK	
	LC15 at 0.00%	0.47	OK	
	LC16 at 0.00%	0.45	OK	
	LC17 at 0.00%	0.40	OK	
	LC18 at 0.00%	0.36	OK	
	LC19 at 0.00%	0.26	OK	
	LC2 at 0.00%	0.58	OK	
	LC20 at 0.00%	0.19	OK	
	LC21 at 0.00%	0.19	OK	
	LC22 at 0.00%	0.20	OK	
	LC23 at 0.00%	0.23	OK	
	LC24 at 0.00%	0.26	OK	
	LC25 at 0.00%	0.64	OK	
	LC26 at 0.00%	0.66	OK	
	LC27 at 0.00%	0.66	OK	
	LC28 at 0.00%	0.65	OK	
	LC29 at 0.00%	0.64	OK	
	LC3 at 0.00%	0.57	OK	
	LC30 at 0.00%	0.65	OK	
	LC31 at 0.00%	0.62	OK	
	LC32 at 0.00%	0.60	OK	
	LC33 at 0.00%	0.61	OK	
	LC34 at 0.00%	0.61	OK	
	LC35 at 0.00%	0.62	OK	
	LC36 at 0.00%	0.62	OK	
	LC37 at 0.00%	0.31	OK	
	LC38 at 0.00%	0.85	OK	
	LC39 at 0.00%	0.58	OK	
	LC4 at 0.00%	0.55	OK	
	LC40 at 0.00%	0.31	OK	
	LC41 at 0.00%	0.96	OK	
	LC42 at 0.00%	**0.96**	**OK**	Eq. H2-1
	LC43 at 0.00%	0.96	OK	
	LC44 at 0.00%	0.96	OK	
	LC45 at 0.00%	0.96	OK	
	LC46 at 0.00%	0.96	OK	
	LC47 at 0.00%	0.95	OK	
	LC48 at 0.00%	0.94	OK	
	LC49 at 0.00%	0.95	OK	
	LC5 at 0.00%	0.51	OK	
	LC50 at 0.00%	0.95	OK	
	LC51 at 0.00%	0.95	OK	
	LC52 at 0.00%	0.95	OK	

	LC53 at 0.00%	0.76	OK
	LC54 at 0.00%	0.76	OK
	LC55 at 0.00%	0.76	OK
	LC56 at 0.00%	0.76	OK
	LC57 at 0.00%	0.76	OK
	LC58 at 0.00%	0.76	OK
	LC59 at 0.00%	0.75	OK
	LC6 at 0.00%	0.47	OK
	LC60 at 0.00%	0.75	OK
	LC61 at 0.00%	0.75	OK
	LC62 at 0.00%	0.75	OK
	LC63 at 0.00%	0.75	OK
	LC64 at 0.00%	0.75	OK
	LC65 at 0.00%	0.49	OK
	LC66 at 0.00%	0.50	OK
	LC67 at 0.00%	0.50	OK
	LC68 at 0.00%	0.50	OK
	LC69 at 0.00%	0.49	OK
	LC7 at 0.00%	0.36	OK
	LC70 at 0.00%	0.49	OK
	LC71 at 0.00%	0.49	OK
	LC72 at 0.00%	0.48	OK
	LC73 at 0.00%	0.48	OK
	LC74 at 0.00%	0.48	OK
	LC75 at 0.00%	0.49	OK
	LC76 at 0.00%	0.49	OK
	LC77 at 0.00%	0.29	OK
	LC78 at 0.00%	0.30	OK
	LC79 at 0.00%	0.30	OK
	LC8 at 0.00%	0.30	OK
	LC80 at 0.00%	0.30	OK
	LC81 at 0.00%	0.30	OK
	LC82 at 0.00%	0.30	OK
	LC83 at 0.00%	0.29	OK
	LC84 at 0.00%	0.28	OK
	LC85 at 0.00%	0.28	OK
	LC86 at 0.00%	0.28	OK
	LC87 at 0.00%	0.29	OK
	LC88 at 0.00%	0.28	OK
	LC9 at 0.00%	0.29	OK
	W180 at 0.00%	0.05	OK
	W210 at 100.00%	0.12	OK
	W240 at 100.00%	0.12	OK
	W270 at 100.00%	0.12	OK
	W300 at 100.00%	0.09	OK
	W330 at 100.00%	0.07	OK
	WI180 at 0.00%	0.02	OK
	WI210 at 100.00%	0.05	OK
	WI240 at 100.00%	0.04	OK
	WI270 at 100.00%	0.04	OK
	WI300 at 100.00%	0.03	OK
	WI330 at 100.00%	0.03	OK
	WL180 at 0.00%	0.00	OK
	WL210 at 100.00%	0.01	OK
	WL240 at 100.00%	0.01	OK
	WL270 at 100.00%	0.01	OK
	WL300 at 100.00%	0.01	OK
	WL330 at 100.00%	0.01	OK
10	LC1 at 0.00%	0.43	OK
	LC10 at 0.00%	0.53	OK
	LC11 at 0.00%	0.54	OK
	LC12 at 0.00%	0.54	OK
	LC13 at 0.00%	0.33	OK

LC14 at 0.00%	0.22	OK
LC15 at 0.00%	0.20	OK
LC16 at 100.00%	0.19	OK
LC17 at 100.00%	0.21	OK
LC18 at 100.00%	0.21	OK
LC19 at 0.00%	0.26	OK
LC2 at 0.00%	0.32	OK
LC20 at 0.00%	0.36	OK
LC21 at 0.00%	0.40	OK
LC22 at 0.00%	0.44	OK
LC23 at 0.00%	0.44	OK
LC24 at 0.00%	0.45	OK
LC25 at 0.00%	0.61	OK
LC26 at 0.00%	0.58	OK
LC27 at 0.00%	0.58	OK
LC28 at 0.00%	0.57	OK
LC29 at 0.00%	0.58	OK
LC3 at 0.00%	0.30	OK
LC30 at 0.00%	0.57	OK
LC31 at 0.00%	0.60	OK
LC32 at 0.00%	0.62	OK
LC33 at 0.00%	0.62	OK
LC34 at 0.00%	0.63	OK
LC35 at 0.00%	0.63	OK
LC36 at 0.00%	0.63	OK
LC37 at 0.00%	0.29	OK
LC38 at 0.00%	0.41	OK
LC39 at 0.00%	0.54	OK
LC4 at 0.00%	0.27	OK
LC40 at 0.00%	0.67	OK
LC41 at 0.00%	0.42	OK
LC42 at 0.00%	0.41	OK
LC43 at 0.00%	0.42	OK
LC44 at 0.00%	0.41	OK
LC45 at 0.00%	0.41	OK
LC46 at 0.00%	0.41	OK
LC47 at 0.00%	0.42	OK
LC48 at 0.00%	0.43	OK
LC49 at 0.00%	0.43	OK
LC5 at 0.00%	0.27	OK
LC50 at 0.00%	0.43	OK
LC51 at 0.00%	0.43	OK
LC52 at 0.00%	0.43	OK
LC53 at 0.00%	0.51	OK
LC54 at 0.00%	0.50	OK
LC55 at 0.00%	0.50	OK
LC56 at 0.00%	0.50	OK
LC57 at 0.00%	0.50	OK
LC58 at 0.00%	0.50	OK
LC59 at 0.00%	0.50	OK
LC6 at 0.00%	0.27	OK
LC60 at 0.00%	0.51	OK
LC61 at 0.00%	0.51	OK
LC62 at 0.00%	0.51	OK
LC63 at 0.00%	0.51	OK
LC64 at 0.00%	0.51	OK
LC65 at 0.00%	0.66	OK
LC66 at 0.00%	0.65	OK
LC67 at 0.00%	0.65	OK
LC68 at 0.00%	0.65	OK
LC69 at 0.00%	0.65	OK
LC7 at 0.00%	0.36	OK
LC70 at 0.00%	0.65	OK
LC71 at 0.00%	0.66	OK

		LC72 at 0.00%	0.66	OK	
		LC73 at 0.00%	0.66	OK	
		LC74 at 0.00%	0.66	OK	
		LC75 at 0.00%	0.66	OK	
		LC76 at 0.00%	0.66	OK	
		LC77 at 0.00%	0.73	OK	
		LC78 at 0.00%	0.73	OK	
		LC79 at 0.00%	0.73	OK	
		LC8 at 0.00%	0.46	OK	
		LC80 at 0.00%	0.73	OK	
		LC81 at 0.00%	0.73	OK	
		LC82 at 0.00%	0.73	OK	
		LC83 at 0.00%	0.73	OK	
		LC84 at 0.00%	0.74	OK	
		LC85 at 0.00%	0.74	OK	
		LC86 at 0.00%	0.74	OK	
		LC87 at 0.00%	0.74	OK	
		LC88 at 0.00%	**0.74**	**OK**	Eq. H2-1
		LC9 at 0.00%	0.49	OK	
		W180 at 100.00%	0.05	OK	
		W210 at 100.00%	0.07	OK	
		W240 at 100.00%	0.08	OK	
		W270 at 100.00%	0.13	OK	
		W300 at 100.00%	0.14	OK	
		W330 at 100.00%	0.14	OK	
		WI180 at 100.00%	0.02	OK	
		WI210 at 100.00%	0.03	OK	
		WI240 at 100.00%	0.03	OK	
		WI270 at 100.00%	0.05	OK	
		WI300 at 100.00%	0.05	OK	
		WI330 at 100.00%	0.06	OK	
		WL180 at 100.00%	0.00	OK	
		WL210 at 100.00%	0.01	OK	
		WL240 at 100.00%	0.01	OK	
		WL270 at 100.00%	0.01	OK	
		WL300 at 100.00%	0.01	OK	
		WL330 at 100.00%	0.02	OK	
PIPE 2-1_2x0.203	**51**	LC1 at 0.00%	0.20	OK	
		LC10 at 100.00%	0.34	OK	
		LC11 at 100.00%	0.27	OK	
		LC12 at 0.00%	0.27	OK	
		LC13 at 0.00%	0.19	OK	
		LC14 at 0.00%	0.28	OK	
		LC15 at 0.00%	0.25	OK	
		LC16 at 100.00%	0.31	OK	
		LC17 at 100.00%	0.33	OK	
		LC18 at 100.00%	0.36	OK	
		LC19 at 100.00%	0.26	OK	
		LC2 at 0.00%	0.30	OK	Eq. H1-1b
		LC20 at 100.00%	0.35	OK	
		LC21 at 100.00%	0.32	OK	
		LC22 at 100.00%	0.30	OK	
		LC23 at 0.00%	0.23	OK	
		LC24 at 0.00%	0.26	OK	
		LC25 at 100.00%	0.28	OK	
		LC26 at 100.00%	0.31	OK	
		LC27 at 100.00%	0.31	OK	
		LC28 at 100.00%	0.33	OK	
		LC29 at 100.00%	0.33	OK	
		LC3 at 100.00%	0.29	OK	
		LC30 at 100.00%	0.34	OK	
		LC31 at 100.00%	0.31	OK	
		LC32 at 100.00%	0.31	OK	

LC33 at 100.00%	0.30	OK	
LC34 at 100.00%	0.30	OK	
LC35 at 100.00%	0.27	OK	
LC36 at 100.00%	0.28	OK	
LC37 at 100.00%	0.14	OK	
LC38 at 100.00%	0.40	OK	
LC39 at 100.00%	0.25	OK	
LC4 at 100.00%	0.36	OK	
LC40 at 100.00%	0.41	OK	
LC41 at 100.00%	0.46	OK	
LC42 at 100.00%	0.45	OK	
LC43 at 100.00%	0.45	OK	
LC44 at 100.00%	0.45	OK	
LC45 at 100.00%	0.46	OK	
LC46 at 100.00%	0.46	OK	
LC47 at 100.00%	0.47	OK	
LC48 at 100.00%	0.47	OK	
LC49 at 100.00%	0.47	OK	
LC5 at 100.00%	0.38	OK	
LC50 at 100.00%	0.47	OK	
LC51 at 100.00%	0.47	OK	
LC52 at 100.00%	0.47	OK	
LC53 at 100.00%	0.32	OK	
LC54 at 100.00%	0.32	OK	
LC55 at 100.00%	0.32	OK	
LC56 at 100.00%	0.32	OK	
LC57 at 100.00%	0.33	OK	
LC58 at 100.00%	0.33	OK	
LC59 at 100.00%	0.34	OK	
LC6 at 100.00%	0.41	OK	
LC60 at 100.00%	0.34	OK	
LC61 at 100.00%	0.34	OK	
LC62 at 100.00%	0.34	OK	
LC63 at 100.00%	0.33	OK	
LC64 at 100.00%	0.33	OK	
LC65 at 100.00%	0.34	OK	
LC66 at 100.00%	0.35	OK	
LC67 at 100.00%	0.35	OK	
LC68 at 100.00%	0.36	OK	
LC69 at 100.00%	0.36	OK	
LC7 at 100.00%	0.30	OK	
LC70 at 100.00%	0.36	OK	
LC71 at 100.00%	0.35	OK	
LC72 at 100.00%	0.34	OK	
LC73 at 100.00%	0.34	OK	
LC74 at 100.00%	0.34	OK	
LC75 at 100.00%	0.34	OK	
LC76 at 100.00%	0.33	OK	
LC77 at 100.00%	0.47	OK	
LC78 at 100.00%	0.48	OK	
LC79 at 100.00%	0.48	OK	
LC8 at 100.00%	0.40	OK	
LC80 at 100.00%	0.48	OK	
LC81 at 100.00%	0.49	OK	
LC82 at 100.00%	**0.49**	**OK**	Eq. H1-1b
LC83 at 100.00%	0.48	OK	
LC84 at 100.00%	0.47	OK	
LC85 at 100.00%	0.47	OK	
LC86 at 100.00%	0.47	OK	
LC87 at 100.00%	0.46	OK	
LC88 at 100.00%	0.46	OK	
LC9 at 100.00%	0.37	OK	
W180 at 0.00%	0.08	OK	
W210 at 0.00%	0.14	OK	

		W240 at 100.00%	0.12	OK	
		W270 at 0.00%	0.11	OK	
		W300 at 0.00%	0.12	OK	
		W330 at 0.00%	0.14	OK	
		WI180 at 100.00%	0.02	OK	
		WI210 at 100.00%	0.05	OK	
		WI240 at 100.00%	0.04	OK	
		WI270 at 0.00%	0.04	OK	
		WI300 at 100.00%	0.04	OK	
		WI330 at 0.00%	0.05	OK	
		WL180 at 100.00%	0.01	OK	
		WL210 at 100.00%	0.01	OK	
		WL240 at 100.00%	0.01	OK	
		WL270 at 0.00%	0.01	OK	
		WL300 at 100.00%	0.01	OK	
		WL330 at 0.00%	0.01	OK	
PIPE 2x0.154	**16**	LC1 at 50.00%	0.07	OK	Eq. H1-1b
		LC10 at 70.83%	0.06	OK	
		LC11 at 70.83%	0.07	OK	
		LC12 at 70.83%	0.07	OK	
		LC13 at 50.00%	0.07	OK	
		LC14 at 25.00%	0.05	OK	
		LC15 at 25.00%	0.05	OK	
		LC16 at 25.00%	0.05	OK	
		LC17 at 25.00%	0.05	OK	
		LC18 at 25.00%	0.05	OK	
		LC19 at 50.00%	0.06	OK	Eq. H1-1b
		LC2 at 25.00%	0.07	OK	
		LC20 at 70.83%	0.05	OK	
		LC21 at 70.83%	0.05	OK	
		LC22 at 70.83%	0.05	OK	
		LC23 at 70.83%	0.05	OK	
		LC24 at 70.83%	0.05	OK	
		LC25 at 25.00%	0.09	OK	
		LC26 at 25.00%	0.09	OK	
		LC27 at 25.00%	0.09	OK	
		LC28 at 25.00%	0.09	OK	
		LC29 at 25.00%	0.09	OK	
		LC3 at 25.00%	0.06	OK	
		LC30 at 25.00%	0.09	OK	
		LC31 at 25.00%	0.09	OK	
		LC32 at 25.00%	0.09	OK	
		LC33 at 25.00%	0.09	OK	
		LC34 at 25.00%	0.09	OK	
		LC35 at 25.00%	0.09	OK	
		LC36 at 25.00%	0.09	OK	
		LC37 at 25.00%	0.04	OK	
		LC38 at 25.00%	0.06	OK	
		LC39 at 25.00%	0.05	OK	
		LC4 at 25.00%	0.06	OK	
		LC40 at 25.00%	0.12	OK	
		LC41 at 25.00%	0.06	OK	
		LC42 at 25.00%	0.06	OK	
		LC43 at 25.00%	0.06	OK	
		LC44 at 25.00%	0.06	OK	
		LC45 at 25.00%	0.06	OK	
		LC46 at 25.00%	0.06	OK	
		LC47 at 25.00%	0.06	OK	
		LC48 at 25.00%	0.06	OK	
		LC49 at 25.00%	0.06	OK	
		LC5 at 25.00%	0.06	OK	
		LC50 at 25.00%	0.06	OK	
		LC51 at 25.00%	0.06	OK	

	LC52 at 25.00%	0.06	OK	
	LC53 at 25.00%	0.05	OK	
	LC54 at 25.00%	0.05	OK	
	LC55 at 25.00%	0.05	OK	
	LC56 at 25.00%	0.05	OK	
	LC57 at 25.00%	0.05	OK	
	LC58 at 25.00%	0.05	OK	
	LC59 at 25.00%	0.05	OK	
	LC6 at 25.00%	0.06	OK	
	LC60 at 25.00%	0.04	OK	
	LC61 at 25.00%	0.05	OK	
	LC62 at 25.00%	0.05	OK	
	LC63 at 25.00%	0.04	OK	
	LC64 at 25.00%	0.04	OK	
	LC65 at 25.00%	0.09	OK	
	LC66 at 25.00%	0.09	OK	
	LC67 at 25.00%	0.09	OK	
	LC68 at 25.00%	0.09	OK	
	LC69 at 25.00%	0.09	OK	
	LC7 at 50.00%	0.06	OK	
	LC70 at 25.00%	0.09	OK	
	LC71 at 25.00%	0.09	OK	
	LC72 at 25.00%	0.08	OK	
	LC73 at 25.00%	0.09	OK	
	LC74 at 25.00%	0.09	OK	
	LC75 at 25.00%	0.09	OK	
	LC76 at 25.00%	0.09	OK	
	LC77 at 25.00%	0.15	OK	
	LC78 at 25.00%	**0.15**	**OK**	Eq. H1-1b
	LC79 at 25.00%	0.15	OK	
	LC8 at 70.83%	0.06	OK	
	LC80 at 25.00%	0.15	OK	
	LC81 at 25.00%	0.15	OK	
	LC82 at 25.00%	0.15	OK	
	LC83 at 25.00%	0.15	OK	
	LC84 at 25.00%	0.14	OK	
	LC85 at 25.00%	0.14	OK	
	LC86 at 25.00%	0.14	OK	
	LC87 at 25.00%	0.14	OK	
	LC88 at 25.00%	0.14	OK	
	LC9 at 70.83%	0.06	OK	
	W180 at 50.00%	0.04	OK	
	W210 at 50.00%	0.03	OK	
	W240 at 50.00%	0.02	OK	
	W270 at 50.00%	0.02	OK	
	W300 at 50.00%	0.02	OK	
	W330 at 50.00%	0.03	OK	
	WI180 at 50.00%	0.02	OK	
	WI210 at 50.00%	0.01	OK	
	WI240 at 50.00%	0.01	OK	
	WI270 at 50.00%	0.01	OK	
	WI300 at 50.00%	0.01	OK	
	WI330 at 50.00%	0.01	OK	
	WL180 at 50.00%	0.00	OK	
	WL210 at 50.00%	0.00	OK	
	WL240 at 50.00%	0.00	OK	
	WL270 at 50.00%	0.00	OK	
	WL300 at 50.00%	0.00	OK	
	WL330 at 50.00%	0.00	OK	
18	LC1 at 0.00%	0.22	OK	
	LC10 at 100.00%	0.21	OK	
	LC11 at 100.00%	0.21	OK	
	LC12 at 100.00%	0.21	OK	

LC13 at 0.00%	0.17	OK
LC14 at 0.00%	0.17	OK
LC15 at 0.00%	0.17	OK
LC16 at 0.00%	0.17	OK
LC17 at 0.00%	0.16	OK
LC18 at 0.00%	0.15	OK
LC19 at 100.00%	0.13	OK
LC2 at 0.00%	0.22	OK
LC20 at 100.00%	0.15	OK
LC21 at 100.00%	0.16	OK
LC22 at 100.00%	0.16	OK
LC23 at 100.00%	0.16	OK
LC24 at 100.00%	0.16	OK
LC25 at 0.00%	0.32	OK
LC26 at 0.00%	0.32	OK
LC27 at 0.00%	0.32	OK
LC28 at 0.00%	0.32	OK
LC29 at 0.00%	0.31	OK
LC3 at 0.00%	0.22	OK
LC30 at 0.00%	0.31	OK
LC31 at 0.00%	0.31	OK
LC32 at 0.00%	0.31	OK
LC33 at 0.00%	0.31	OK
LC34 at 0.00%	0.31	OK
LC35 at 0.00%	0.31	OK
LC36 at 0.00%	0.31	OK
LC37 at 0.00%	0.15	OK
LC38 at 0.00%	0.22	OK
LC39 at 0.00%	0.17	OK
LC4 at 0.00%	0.22	OK
LC40 at 0.00%	0.44	OK
LC41 at 0.00%	0.22	OK
LC42 at 0.00%	0.22	OK
LC43 at 0.00%	0.22	OK
LC44 at 0.00%	0.22	OK
LC45 at 0.00%	0.22	OK
LC46 at 0.00%	0.22	OK
LC47 at 0.00%	0.22	OK
LC48 at 0.00%	0.22	OK
LC49 at 0.00%	0.22	OK
LC5 at 0.00%	0.21	OK
LC50 at 0.00%	0.22	OK
LC51 at 0.00%	0.22	OK
LC52 at 0.00%	0.22	OK
LC53 at 0.00%	0.16	OK
LC54 at 0.00%	0.17	OK
LC55 at 0.00%	0.16	OK
LC56 at 0.00%	0.16	OK
LC57 at 0.00%	0.16	OK
LC58 at 0.00%	0.16	OK
LC59 at 0.00%	0.16	OK
LC6 at 0.00%	0.20	OK
LC60 at 0.00%	0.16	OK
LC61 at 0.00%	0.16	OK
LC62 at 0.00%	0.16	OK
LC63 at 0.00%	0.16	OK
LC64 at 0.00%	0.16	OK
LC65 at 0.00%	0.29	OK
LC66 at 0.00%	0.29	OK
LC67 at 0.00%	0.29	OK
LC68 at 0.00%	0.29	OK
LC69 at 0.00%	0.29	OK
LC7 at 100.00%	0.18	OK
LC70 at 0.00%	0.29	OK

	LC71 at 0.00%	0.29	OK	
	LC72 at 0.00%	0.29	OK	
	LC73 at 0.00%	0.29	OK	
	LC74 at 0.00%	0.29	OK	
	LC75 at 0.00%	0.29	OK	
	LC76 at 0.00%	0.29	OK	
	LC77 at 0.00%	0.52	OK	
	LC78 at 0.00%	**0.52**	**OK**	Eq. H1-1b
	LC79 at 0.00%	0.52	OK	
	LC8 at 100.00%	0.20	OK	
	LC80 at 0.00%	0.52	OK	
	LC81 at 0.00%	0.52	OK	
	LC82 at 0.00%	0.52	OK	
	LC83 at 0.00%	0.51	OK	
	LC84 at 0.00%	0.51	OK	
	LC85 at 0.00%	0.51	OK	
	LC86 at 0.00%	0.51	OK	
	LC87 at 0.00%	0.52	OK	
	LC88 at 0.00%	0.52	OK	
	LC9 at 100.00%	0.20	OK	
	W180 at 0.00%	0.01	OK	
	W210 at 50.00%	0.01	OK	
	W240 at 50.00%	0.01	OK	Eq. H1-1b
	W270 at 50.00%	0.02	OK	
	W300 at 50.00%	0.02	OK	
	W330 at 50.00%	0.02	OK	
	WI180 at 0.00%	0.00	OK	
	WI210 at 50.00%	0.01	OK	
	WI240 at 50.00%	0.01	OK	
	WI270 at 50.00%	0.01	OK	
	WI300 at 50.00%	0.01	OK	
	WI330 at 50.00%	0.01	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 50.00%	0.00	OK	
	WL240 at 50.00%	0.00	OK	
	WL270 at 50.00%	0.00	OK	
	WL300 at 50.00%	0.00	OK	
	WL330 at 50.00%	0.00	OK	
19	LC1 at 56.25%	0.30	OK	Eq. H1-1b
	LC10 at 100.00%	0.23	OK	
	LC11 at 100.00%	0.21	OK	
	LC12 at 0.00%	0.23	OK	
	LC13 at 56.25%	0.30	OK	
	LC14 at 53.13%	0.25	OK	
	LC15 at 0.00%	0.21	OK	
	LC16 at 0.00%	0.18	OK	
	LC17 at 100.00%	0.16	OK	
	LC18 at 100.00%	0.18	OK	
	LC19 at 56.25%	0.29	OK	Eq. H1-1b
	LC2 at 0.00%	0.27	OK	
	LC20 at 53.13%	0.25	OK	
	LC21 at 100.00%	0.21	OK	
	LC22 at 100.00%	0.18	OK	
	LC23 at 100.00%	0.16	OK	
	LC24 at 0.00%	0.18	OK	
	LC25 at 0.00%	0.34	OK	
	LC26 at 0.00%	0.34	OK	
	LC27 at 0.00%	0.33	OK	
	LC28 at 0.00%	0.32	OK	
	LC29 at 100.00%	0.33	OK	
	LC3 at 0.00%	0.26	OK	
	LC30 at 100.00%	0.33	OK	
	LC31 at 100.00%	0.34	OK	

LC32 at 100.00%	0.34	OK	
LC33 at 100.00%	0.34	OK	
LC34 at 100.00%	0.33	OK	
LC35 at 100.00%	0.33	OK	
LC36 at 100.00%	0.33	OK	
LC37 at 100.00%	0.15	OK	
LC38 at 100.00%	0.22	OK	
LC39 at 100.00%	0.20	OK	
LC4 at 0.00%	0.23	OK	
LC40 at 100.00%	0.50	OK	
LC41 at 100.00%	0.22	OK	
LC42 at 100.00%	0.22	OK	
LC43 at 100.00%	0.22	OK	
LC44 at 100.00%	0.23	OK	
LC45 at 100.00%	0.23	OK	
LC46 at 100.00%	0.23	OK	
LC47 at 100.00%	0.23	OK	
LC48 at 100.00%	0.23	OK	
LC49 at 100.00%	0.23	OK	
LC5 at 100.00%	0.21	OK	
LC50 at 100.00%	0.23	OK	
LC51 at 100.00%	0.23	OK	
LC52 at 100.00%	0.23	OK	
LC53 at 0.00%	0.20	OK	
LC54 at 0.00%	0.20	OK	
LC55 at 100.00%	0.20	OK	
LC56 at 100.00%	0.20	OK	
LC57 at 100.00%	0.20	OK	
LC58 at 100.00%	0.20	OK	
LC59 at 100.00%	0.21	OK	
LC6 at 100.00%	0.23	OK	
LC60 at 100.00%	0.20	OK	
LC61 at 100.00%	0.20	OK	
LC62 at 100.00%	0.20	OK	
LC63 at 100.00%	0.20	OK	
LC64 at 100.00%	0.20	OK	
LC65 at 0.00%	0.22	OK	
LC66 at 0.00%	0.22	OK	
LC67 at 100.00%	0.22	OK	
LC68 at 100.00%	0.22	OK	
LC69 at 100.00%	0.22	OK	
LC7 at 56.25%	0.29	OK	
LC70 at 100.00%	0.22	OK	
LC71 at 100.00%	0.22	OK	
LC72 at 100.00%	0.22	OK	
LC73 at 100.00%	0.22	OK	
LC74 at 100.00%	0.22	OK	
LC75 at 100.00%	0.22	OK	
LC76 at 100.00%	0.22	OK	
LC77 at 100.00%	0.57	OK	
LC78 at 100.00%	0.57	OK	
LC79 at 100.00%	0.57	OK	
LC8 at 100.00%	0.27	OK	
LC80 at 100.00%	0.57	OK	
LC81 at 100.00%	0.57	OK	
LC82 at 100.00%	0.57	OK	
LC83 at 100.00%	**0.58**	**OK**	Eq. H1-1b
LC84 at 100.00%	0.58	OK	
LC85 at 100.00%	0.58	OK	
LC86 at 100.00%	0.57	OK	
LC87 at 100.00%	0.57	OK	
LC88 at 100.00%	0.57	OK	
LC9 at 100.00%	0.26	OK	
W180 at 56.25%	0.18	OK	

	W210 at 53.13%	0.16	OK	
	W240 at 53.13%	0.13	OK	
	W270 at 53.13%	0.05	OK	
	W300 at 56.25%	0.05	OK	
	W330 at 56.25%	0.09	OK	
	WI180 at 56.25%	0.07	OK	
	WI210 at 53.13%	0.06	OK	
	WI240 at 53.13%	0.05	OK	
	WI270 at 53.13%	0.02	OK	
	WI300 at 56.25%	0.02	OK	
	WI330 at 56.25%	0.03	OK	
	WL180 at 56.25%	0.02	OK	
	WL210 at 53.13%	0.02	OK	
	WL240 at 53.13%	0.01	OK	
	WL270 at 53.13%	0.01	OK	
	WL300 at 56.25%	0.01	OK	
	WL330 at 56.25%	0.01	OK	
20	LC1 at 0.00%	0.22	OK	
	LC10 at 0.00%	0.21	OK	
	LC11 at 0.00%	0.23	OK	
	LC12 at 0.00%	0.23	OK	
	LC13 at 53.13%	0.19	OK	
	LC14 at 0.00%	0.14	OK	
	LC15 at 100.00%	0.14	OK	
	LC16 at 100.00%	0.18	OK	
	LC17 at 100.00%	0.20	OK	
	LC18 at 100.00%	0.20	OK	
	LC19 at 100.00%	0.18	OK	
	LC2 at 0.00%	0.18	OK	
	LC20 at 100.00%	0.14	OK	
	LC21 at 0.00%	0.14	OK	
	LC22 at 0.00%	0.17	OK	
	LC23 at 0.00%	0.19	OK	
	LC24 at 53.13%	0.20	OK	
	LC25 at 0.00%	0.27	OK	
	LC26 at 0.00%	0.27	OK	
	LC27 at 100.00%	0.27	OK	
	LC28 at 100.00%	0.28	OK	
	LC29 at 100.00%	0.28	OK	
	LC3 at 100.00%	0.18	OK	
	LC30 at 100.00%	0.28	OK	
	LC31 at 100.00%	0.28	OK	
	LC32 at 100.00%	0.27	OK	
	LC33 at 0.00%	0.27	OK	
	LC34 at 0.00%	0.27	OK	
	LC35 at 0.00%	0.28	OK	
	LC36 at 0.00%	0.28	OK	
	LC37 at 100.00%	0.13	OK	
	LC38 at 100.00%	0.46	OK	
	LC39 at 0.00%	0.17	OK	
	LC4 at 100.00%	0.22	OK	
	LC40 at 100.00%	0.19	OK	
	LC41 at 0.00%	0.54	OK	
	LC42 at 100.00%	0.54	OK	
	LC43 at 100.00%	0.54	OK	
	LC44 at 100.00%	0.54	OK	
	LC45 at 100.00%	**0.54**	**OK**	Eq. H1-1b
	LC46 at 100.00%	0.54	OK	
	LC47 at 100.00%	0.54	OK	
	LC48 at 100.00%	0.54	OK	
	LC49 at 100.00%	0.54	OK	
	LC5 at 100.00%	0.24	OK	
	LC50 at 0.00%	0.54	OK	

	LC51 at 0.00%	0.54	OK	Eq. H1-1b
	LC52 at 0.00%	0.54	OK	
	LC53 at 0.00%	0.19	OK	
	LC54 at 0.00%	0.19	OK	
	LC55 at 0.00%	0.19	OK	
	LC56 at 100.00%	0.19	OK	
	LC57 at 100.00%	0.19	OK	
	LC58 at 100.00%	0.19	OK	
	LC59 at 100.00%	0.19	OK	
	LC6 at 100.00%	0.24	OK	
	LC60 at 0.00%	0.18	OK	
	LC61 at 0.00%	0.19	OK	
	LC62 at 0.00%	0.19	OK	
	LC63 at 0.00%	0.19	OK	
	LC64 at 0.00%	0.19	OK	
	LC65 at 0.00%	0.17	OK	
	LC66 at 0.00%	0.17	OK	
	LC67 at 100.00%	0.17	OK	
	LC68 at 100.00%	0.17	OK	
	LC69 at 100.00%	0.17	OK	
	LC7 at 100.00%	0.23	OK	
	LC70 at 100.00%	0.17	OK	
	LC71 at 100.00%	0.17	OK	
	LC72 at 100.00%	0.17	OK	
	LC73 at 100.00%	0.17	OK	
	LC74 at 0.00%	0.17	OK	
	LC75 at 0.00%	0.17	OK	
	LC76 at 0.00%	0.17	OK	
	LC77 at 0.00%	0.19	OK	
	LC78 at 100.00%	0.19	OK	
	LC79 at 100.00%	0.19	OK	
	LC8 at 100.00%	0.18	OK	
	LC80 at 100.00%	0.19	OK	
	LC81 at 100.00%	0.20	OK	
	LC82 at 100.00%	0.19	OK	
	LC83 at 100.00%	0.19	OK	
	LC84 at 100.00%	0.19	OK	
	LC85 at 100.00%	0.19	OK	
	LC86 at 0.00%	0.19	OK	
	LC87 at 0.00%	0.19	OK	
	LC88 at 0.00%	0.19	OK	
	LC9 at 0.00%	0.18	OK	
	W180 at 53.13%	0.11	OK	
	W210 at 56.25%	0.04	OK	
	W240 at 56.25%	0.01	OK	
	W270 at 53.13%	0.05	OK	
	W300 at 53.13%	0.09	OK	
	W330 at 53.13%	0.12	OK	
	WI180 at 53.13%	0.04	OK	
	WI210 at 56.25%	0.01	OK	
	WI240 at 56.25%	0.01	OK	
	WI270 at 53.13%	0.02	OK	
	WI300 at 53.13%	0.04	OK	
	WI330 at 53.13%	0.04	OK	
	WL180 at 53.13%	0.01	OK	
	WL210 at 56.25%	0.00	OK	
	WL240 at 56.25%	0.00	OK	
	WL270 at 53.13%	0.00	OK	
	WL300 at 53.13%	0.01	OK	
	WL330 at 53.13%	0.01	OK	
32	LC1 at 100.00%	0.17	OK	
	LC10 at 0.00%	0.20	OK	
	LC11 at 0.00%	0.19	OK	

LC12 at 0.00%	0.19	OK	
LC13 at 0.00%	0.13	OK	
LC14 at 100.00%	0.15	OK	
LC15 at 100.00%	0.15	OK	
LC16 at 100.00%	0.16	OK	
LC17 at 100.00%	0.16	OK	
LC18 at 100.00%	0.16	OK	
LC19 at 100.00%	0.14	OK	
LC2 at 100.00%	0.19	OK	
LC20 at 0.00%	0.15	OK	
LC21 at 0.00%	0.15	OK	
LC22 at 0.00%	0.15	OK	
LC23 at 0.00%	0.15	OK	
LC24 at 0.00%	0.14	OK	
LC25 at 100.00%	0.27	OK	
LC26 at 100.00%	0.28	OK	
LC27 at 100.00%	0.28	OK	
LC28 at 100.00%	0.28	OK	
LC29 at 100.00%	0.28	OK	
LC3 at 100.00%	0.20	OK	
LC30 at 100.00%	0.28	OK	
LC31 at 100.00%	0.28	OK	
LC32 at 0.00%	0.27	OK	
LC33 at 0.00%	0.27	OK	
LC34 at 0.00%	0.27	OK	
LC35 at 0.00%	0.27	OK	
LC36 at 0.00%	0.27	OK	
LC37 at 100.00%	0.13	OK	
LC38 at 100.00%	0.41	OK	
LC39 at 100.00%	0.16	OK	
LC4 at 100.00%	0.20	OK	
LC40 at 100.00%	0.20	OK	
LC41 at 100.00%	0.47	OK	
LC42 at 100.00%	0.47	OK	
LC43 at 100.00%	0.47	OK	
LC44 at 100.00%	0.47	OK	
LC45 at 100.00%	**0.47**	**OK**	Eq. H1-1b
LC46 at 100.00%	0.47	OK	
LC47 at 100.00%	0.47	OK	
LC48 at 100.00%	0.47	OK	
LC49 at 100.00%	0.47	OK	
LC5 at 100.00%	0.20	OK	
LC50 at 100.00%	0.47	OK	
LC51 at 100.00%	0.47	OK	
LC52 at 100.00%	0.47	OK	
LC53 at 100.00%	0.26	OK	
LC54 at 100.00%	0.26	OK	
LC55 at 100.00%	0.26	OK	
LC56 at 100.00%	0.27	OK	
LC57 at 100.00%	0.27	OK	
LC58 at 100.00%	0.27	OK	
LC59 at 100.00%	0.26	OK	
LC6 at 100.00%	0.20	OK	
LC60 at 100.00%	0.26	OK	
LC61 at 100.00%	0.26	OK	
LC62 at 100.00%	0.26	OK	
LC63 at 100.00%	0.26	OK	
LC64 at 100.00%	0.26	OK	
LC65 at 100.00%	0.15	OK	
LC66 at 100.00%	0.15	OK	
LC67 at 100.00%	0.15	OK	
LC68 at 100.00%	0.15	OK	
LC69 at 100.00%	0.15	OK	
LC7 at 100.00%	0.19	OK	

	LC70 at 100.00%	0.15	OK
	LC71 at 100.00%	0.15	OK
	LC72 at 100.00%	0.15	OK
	LC73 at 100.00%	0.14	OK
	LC74 at 100.00%	0.14	OK
	LC75 at 100.00%	0.14	OK
	LC76 at 100.00%	0.14	OK
	LC77 at 100.00%	0.20	OK
	LC78 at 100.00%	0.20	OK
	LC79 at 100.00%	0.20	OK
	LC8 at 0.00%	0.19	OK
	LC80 at 100.00%	0.20	OK
	LC81 at 100.00%	0.20	OK
	LC82 at 100.00%	0.20	OK
	LC83 at 100.00%	0.20	OK
	LC84 at 100.00%	0.20	OK
	LC85 at 100.00%	0.20	OK
	LC86 at 100.00%	0.20	OK
	LC87 at 100.00%	0.20	OK
	LC88 at 100.00%	0.20	OK
	LC9 at 0.00%	0.20	OK
	W180 at 100.00%	0.01	OK
	W210 at 100.00%	0.01	OK
	W240 at 0.00%	0.01	OK
	W270 at 100.00%	0.02	OK
	W300 at 100.00%	0.02	OK
	W330 at 100.00%	0.02	OK
	WI180 at 100.00%	0.01	OK
	WI210 at 50.00%	0.01	OK
	WI240 at 50.00%	0.01	OK
	WI270 at 100.00%	0.01	OK
	WI300 at 100.00%	0.01	OK
	WI330 at 100.00%	0.01	OK
	WL180 at 100.00%	0.00	OK
	WL210 at 50.00%	0.00	OK
	WL240 at 50.00%	0.00	OK
	WL270 at 100.00%	0.00	OK
	WL300 at 100.00%	0.00	OK
	WL330 at 100.00%	0.00	OK
38	LC1 at 0.00%	0.08	OK
	LC10 at 0.00%	0.16	OK
	LC11 at 0.00%	0.16	OK
	LC12 at 0.00%	0.12	OK
	LC13 at 0.00%	0.06	OK
	LC14 at 0.00%	0.09	OK
	LC15 at 0.00%	0.14	OK
	LC16 at 0.00%	0.15	OK
	LC17 at 0.00%	0.14	OK
	LC18 at 0.00%	0.12	OK
	LC19 at 0.00%	0.09	OK
	LC2 at 0.00%	0.11	OK
	LC20 at 0.00%	0.12	OK
	LC21 at 0.00%	0.14	OK
	LC22 at 0.00%	0.14	OK
	LC23 at 0.00%	0.14	OK
	LC24 at 0.00%	0.10	OK
	LC25 at 0.00%	0.12	OK
	LC26 at 0.00%	0.13	OK
	LC27 at 0.00%	0.13	OK
	LC28 at 0.00%	0.14	OK
	LC29 at 0.00%	0.14	OK
	LC3 at 0.00%	0.16	OK
	LC30 at 0.00%	0.14	OK

LC31 at 0.00%	0.13	OK	
LC32 at 0.00%	0.13	OK	
LC33 at 0.00%	0.13	OK	
LC34 at 0.00%	0.13	OK	
LC35 at 0.00%	0.13	OK	
LC36 at 0.00%	0.13	OK	
LC37 at 0.00%	0.06	OK	
LC38 at 100.00%	0.04	OK	
LC39 at 0.00%	0.08	OK	
LC4 at 0.00%	0.16	OK	
LC40 at 0.00%	0.22	OK	
LC41 at 100.00%	0.05	OK	
LC42 at 100.00%	0.06	OK	
LC43 at 100.00%	0.05	OK	
LC44 at 100.00%	0.06	OK	
LC45 at 100.00%	0.06	OK	
LC46 at 100.00%	0.06	OK	
LC47 at 100.00%	0.05	OK	
LC48 at 100.00%	0.05	OK	
LC49 at 100.00%	0.05	OK	
LC5 at 0.00%	0.16	OK	
LC50 at 100.00%	0.05	OK	
LC51 at 100.00%	0.05	OK	
LC52 at 100.00%	0.05	OK	
LC53 at 0.00%	0.06	OK	
LC54 at 0.00%	0.06	OK	
LC55 at 0.00%	0.06	OK	
LC56 at 0.00%	0.06	OK	
LC57 at 0.00%	0.06	OK	
LC58 at 0.00%	0.06	OK	
LC59 at 0.00%	0.06	OK	
LC6 at 0.00%	0.14	OK	
LC60 at 0.00%	0.06	OK	
LC61 at 0.00%	0.06	OK	
LC62 at 0.00%	0.06	OK	
LC63 at 0.00%	0.06	OK	
LC64 at 0.00%	0.06	OK	
LC65 at 0.00%	0.12	OK	
LC66 at 0.00%	0.12	OK	
LC67 at 0.00%	0.12	OK	
LC68 at 0.00%	0.12	OK	
LC69 at 0.00%	0.12	OK	
LC7 at 0.00%	0.11	OK	
LC70 at 0.00%	0.12	OK	
LC71 at 0.00%	0.12	OK	
LC72 at 0.00%	0.12	OK	
LC73 at 0.00%	0.12	OK	
LC74 at 0.00%	0.12	OK	
LC75 at 0.00%	0.12	OK	
LC76 at 0.00%	0.12	OK	
LC77 at 0.00%	0.24	OK	
LC78 at 0.00%	0.24	OK	
LC79 at 0.00%	0.24	OK	Eq. H1-1b
LC8 at 0.00%	0.14	OK	
LC80 at 0.00%	0.24	OK	
LC81 at 0.00%	0.24	OK	
LC82 at 0.00%	0.24	OK	
LC83 at 0.00%	0.24	OK	
LC84 at 0.00%	**0.24**	**OK**	Eq. H1-1b
LC85 at 0.00%	0.24	OK	
LC86 at 0.00%	0.24	OK	
LC87 at 0.00%	0.24	OK	
LC88 at 0.00%	0.24	OK	
LC9 at 0.00%	0.16	OK	

	W180 at 100.00%	0.03	OK	
	W210 at 0.00%	0.04	OK	
	W240 at 0.00%	0.05	OK	
	W270 at 0.00%	0.05	OK	
	W300 at 0.00%	0.05	OK	
	W330 at 100.00%	0.05	OK	
	WI180 at 100.00%	0.01	OK	
	WI210 at 0.00%	0.02	OK	
	WI240 at 0.00%	0.01	OK	
	WI270 at 100.00%	0.02	OK	
	WI300 at 100.00%	0.02	OK	
	WI330 at 100.00%	0.02	OK	
	WL180 at 100.00%	0.00	OK	
	WL210 at 0.00%	0.00	OK	
	WL240 at 0.00%	0.00	OK	
	WL270 at 100.00%	0.00	OK	
	WL300 at 100.00%	0.00	OK	
	WL330 at 100.00%	0.01	OK	
52	LC1 at 0.00%	0.01	OK	
	LC10 at 0.00%	0.02	OK	
	LC11 at 0.00%	0.02	OK	
	LC12 at 0.00%	0.02	OK	
	LC13 at 0.00%	0.01	OK	
	LC14 at 0.00%	0.01	OK	
	LC15 at 0.00%	0.01	OK	
	LC16 at 0.00%	0.02	OK	
	LC17 at 0.00%	0.02	OK	
	LC18 at 0.00%	0.02	OK	
	LC19 at 100.00%	0.02	OK	
	LC2 at 0.00%	0.01	OK	
	LC20 at 100.00%	0.02	OK	
	LC21 at 100.00%	0.02	OK	
	LC22 at 0.00%	0.02	OK	
	LC23 at 0.00%	0.02	OK	
	LC24 at 0.00%	0.02	OK	
	LC25 at 100.00%	0.02	OK	
	LC26 at 100.00%	0.02	OK	
	LC27 at 100.00%	0.02	OK	
	LC28 at 100.00%	0.02	OK	
	LC29 at 100.00%	0.02	OK	
	LC3 at 0.00%	0.01	OK	
	LC30 at 100.00%	0.02	OK	
	LC31 at 100.00%	0.02	OK	
	LC32 at 100.00%	0.02	OK	
	LC33 at 100.00%	0.02	OK	
	LC34 at 100.00%	0.02	OK	
	LC35 at 100.00%	0.02	OK	
	LC36 at 100.00%	0.02	OK	
	LC37 at 100.00%	0.01	OK	
	LC38 at 100.00%	0.03	OK	
	LC39 at 100.00%	0.01	OK	
	LC4 at 0.00%	0.02	OK	
	LC40 at 0.00%	0.02	OK	
	LC41 at 100.00%	0.03	OK	
	LC42 at 100.00%	0.04	OK	
	LC43 at 100.00%	0.04	OK	
	LC44 at 100.00%	0.04	OK	
	LC45 at 100.00%	0.04	OK	
	LC46 at 100.00%	0.04	OK	
	LC47 at 100.00%	0.04	OK	
	LC48 at 100.00%	0.04	OK	
	LC49 at 100.00%	0.04	OK	
	LC5 at 0.00%	0.02	OK	Eq. H3-1

	LC50 at 100.00%	0.04	OK	
	LC51 at 100.00%	0.04	OK	
	LC52 at 100.00%	0.04	OK	
	LC53 at 100.00%	0.07	OK	
	LC54 at 100.00%	0.07	OK	
	LC55 at 100.00%	0.07	OK	
	LC56 at 100.00%	0.07	OK	
	LC57 at 100.00%	0.07	OK	
	LC58 at 100.00%	0.07	OK	
	LC59 at 100.00%	**0.07**	**OK**	Eq. H1-1b
	LC6 at 0.00%	0.02	OK	
	LC60 at 100.00%	0.07	OK	
	LC61 at 100.00%	0.07	OK	
	LC62 at 100.00%	0.07	OK	
	LC63 at 100.00%	0.07	OK	
	LC64 at 100.00%	0.07	OK	
	LC65 at 0.00%	0.06	OK	
	LC66 at 0.00%	0.06	OK	
	LC67 at 0.00%	0.06	OK	
	LC68 at 0.00%	0.06	OK	
	LC69 at 0.00%	0.06	OK	
	LC7 at 100.00%	0.02	OK	
	LC70 at 0.00%	0.06	OK	
	LC71 at 0.00%	0.06	OK	
	LC72 at 0.00%	0.06	OK	
	LC73 at 0.00%	0.06	OK	
	LC74 at 0.00%	0.06	OK	
	LC75 at 0.00%	0.06	OK	
	LC76 at 0.00%	0.06	OK	
	LC77 at 0.00%	0.03	OK	
	LC78 at 0.00%	0.03	OK	
	LC79 at 0.00%	0.03	OK	
	LC8 at 100.00%	0.02	OK	
	LC80 at 0.00%	0.03	OK	
	LC81 at 0.00%	0.03	OK	
	LC82 at 0.00%	0.03	OK	
	LC83 at 0.00%	0.03	OK	
	LC84 at 0.00%	0.03	OK	
	LC85 at 0.00%	0.03	OK	
	LC86 at 0.00%	0.03	OK	
	LC87 at 0.00%	0.03	OK	
	LC88 at 0.00%	0.03	OK	
	LC9 at 100.00%	0.02	OK	
	W180 at 0.00%	0.01	OK	
	W210 at 0.00%	0.01	OK	
	W240 at 0.00%	0.01	OK	
	W270 at 0.00%	0.01	OK	
	W300 at 0.00%	0.01	OK	
	W330 at 0.00%	0.01	OK	
	WI180 at 0.00%	0.00	OK	
	WI210 at 0.00%	0.00	OK	
	WI240 at 0.00%	0.00	OK	
	WI270 at 0.00%	0.00	OK	
	WI300 at 0.00%	0.00	OK	
	WI330 at 0.00%	0.00	OK	
	WL180 at 0.00%	0.00	OK	
	WL210 at 0.00%	0.00	OK	
	WL240 at 0.00%	0.00	OK	
	WL270 at 0.00%	0.00	OK	
	WL300 at 0.00%	0.00	OK	
	WL330 at 0.00%	0.00	OK	
53	LC1 at 18.75%	0.07	OK	
	LC10 at 18.75%	0.09	OK	

LC11 at 18.75%	0.09	OK	
LC12 at 18.75%	0.09	OK	
LC13 at 66.67%	0.07	OK	
LC14 at 64.58%	0.07	OK	
LC15 at 64.58%	0.08	OK	
LC16 at 64.58%	0.08	OK	
LC17 at 64.58%	0.08	OK	
LC18 at 64.58%	0.08	OK	
LC19 at 66.67%	0.07	OK	
LC2 at 64.58%	0.09	OK	
LC20 at 18.75%	0.08	OK	
LC21 at 18.75%	0.07	OK	
LC22 at 18.75%	0.07	OK	
LC23 at 18.75%	0.07	OK	
LC24 at 18.75%	0.07	OK	
LC25 at 64.58%	0.12	OK	
LC26 at 64.58%	0.12	OK	
LC27 at 64.58%	0.12	OK	
LC28 at 64.58%	0.12	OK	
LC29 at 64.58%	0.12	OK	
LC3 at 64.58%	0.09	OK	
LC30 at 64.58%	0.12	OK	
LC31 at 64.58%	0.12	OK	
LC32 at 18.75%	0.12	OK	
LC33 at 18.75%	0.12	OK	
LC34 at 18.75%	0.12	OK	
LC35 at 18.75%	0.12	OK	
LC36 at 18.75%	0.12	OK	
LC37 at 18.75%	0.06	OK	
LC38 at 18.75%	0.17	OK	
LC39 at 64.58%	0.07	OK	
LC4 at 64.58%	0.10	OK	
LC40 at 64.58%	0.08	OK	
LC41 at 18.75%	0.20	OK	
LC42 at 64.58%	0.20	OK	
LC43 at 64.58%	0.20	OK	
LC44 at 64.58%	0.20	OK	
LC45 at 64.58%	0.20	OK	
LC46 at 64.58%	0.20	OK	Eq. H1-1b
LC47 at 18.75%	0.21	OK	
LC48 at 18.75%	**0.21**	**OK**	Eq. H1-1b
LC49 at 18.75%	0.21	OK	
LC5 at 64.58%	0.10	OK	
LC50 at 18.75%	0.21	OK	
LC51 at 18.75%	0.21	OK	
LC52 at 18.75%	0.21	OK	
LC53 at 18.75%	0.11	OK	
LC54 at 64.58%	0.11	OK	
LC55 at 64.58%	0.11	OK	
LC56 at 64.58%	0.11	OK	
LC57 at 64.58%	0.11	OK	
LC58 at 64.58%	0.11	OK	
LC59 at 64.58%	0.11	OK	
LC6 at 64.58%	0.10	OK	
LC60 at 18.75%	0.11	OK	
LC61 at 18.75%	0.11	OK	
LC62 at 18.75%	0.11	OK	
LC63 at 18.75%	0.11	OK	
LC64 at 18.75%	0.11	OK	
LC65 at 64.58%	0.06	OK	
LC66 at 64.58%	0.06	OK	
LC67 at 64.58%	0.06	OK	
LC68 at 64.58%	0.06	OK	
LC69 at 64.58%	0.06	OK	

	LC7 at 64.58%	0.08	OK
	LC70 at 64.58%	0.06	OK
	LC71 at 64.58%	0.06	OK
	LC72 at 18.75%	0.06	OK
	LC73 at 18.75%	0.06	OK
	LC74 at 18.75%	0.06	OK
	LC75 at 18.75%	0.06	OK
	LC76 at 18.75%	0.06	OK
	LC77 at 64.58%	0.08	OK
	LC78 at 64.58%	0.08	OK
	LC79 at 64.58%	0.08	OK
	LC8 at 18.75%	0.10	OK
	LC80 at 64.58%	0.08	OK
	LC81 at 64.58%	0.08	OK
	LC82 at 64.58%	0.08	OK
	LC83 at 64.58%	0.08	OK
	LC84 at 18.75%	0.08	OK
	LC85 at 18.75%	0.08	OK
	LC86 at 18.75%	0.08	OK
	LC87 at 18.75%	0.08	OK
	LC88 at 18.75%	0.08	OK
	LC9 at 18.75%	0.09	OK
	W180 at 66.67%	0.04	OK
	W210 at 66.67%	0.03	OK
	W240 at 66.67%	0.03	OK
	W270 at 66.67%	0.03	OK
	W300 at 66.67%	0.03	OK
	W330 at 66.67%	0.03	OK
	WI180 at 66.67%	0.02	OK
	WI210 at 16.67%	0.01	OK
	WI240 at 16.67%	0.01	OK
	WI270 at 16.67%	0.01	OK
	WI300 at 16.67%	0.01	OK
	WI330 at 16.67%	0.01	OK
	WL180 at 16.67%	0.00	OK
	WL210 at 16.67%	0.00	OK
	WL240 at 66.67%	0.00	OK
	WL270 at 16.67%	0.00	OK
	WL300 at 16.67%	0.00	OK
	WL330 at 66.67%	0.00	OK
17	LC1 at 25.00%	0.07	OK
	LC10 at 25.00%	0.06	OK
	LC11 at 25.00%	0.06	OK
	LC12 at 25.00%	0.06	OK
	LC13 at 25.00%	0.05	OK
	LC14 at 25.00%	0.06	OK
	LC15 at 25.00%	0.05	OK
	LC16 at 25.00%	0.06	OK
	LC17 at 25.00%	0.06	OK
	LC18 at 25.00%	0.06	OK
	LC19 at 25.00%	0.06	OK
	LC2 at 25.00%	0.07	OK
	LC20 at 25.00%	0.05	OK
	LC21 at 25.00%	0.05	OK
	LC22 at 25.00%	0.04	OK
	LC23 at 25.00%	0.05	OK
	LC24 at 70.83%	0.04	OK
	LC25 at 25.00%	0.10	OK
	LC26 at 25.00%	0.10	OK
	LC27 at 25.00%	0.10	OK
	LC28 at 25.00%	0.10	OK
	LC29 at 25.00%	0.10	OK
	LC3 at 25.00%	0.07	OK

LC30 at 25.00%	0.11	OK	
LC31 at 25.00%	0.10	OK	
LC32 at 25.00%	0.10	OK	
LC33 at 25.00%	0.10	OK	
LC34 at 25.00%	0.10	OK	
LC35 at 25.00%	0.10	OK	
LC36 at 25.00%	0.10	OK	
LC37 at 25.00%	0.05	OK	
LC38 at 25.00%	0.18	OK	
LC39 at 25.00%	0.06	OK	
LC4 at 25.00%	0.07	OK	
LC40 at 25.00%	0.07	OK	
LC41 at 25.00%	0.22	OK	
LC42 at 25.00%	0.22	OK	
LC43 at 25.00%	0.22	OK	
LC44 at 25.00%	0.22	OK	
LC45 at 25.00%	0.22	OK	
LC46 at 25.00%	**0.22**	**OK**	Eq. H1-1b
LC47 at 25.00%	0.22	OK	
LC48 at 25.00%	0.22	OK	
LC49 at 25.00%	0.22	OK	
LC5 at 25.00%	0.08	OK	
LC50 at 25.00%	0.22	OK	
LC51 at 25.00%	0.22	OK	
LC52 at 25.00%	0.22	OK	
LC53 at 25.00%	0.07	OK	
LC54 at 25.00%	0.07	OK	
LC55 at 25.00%	0.07	OK	
LC56 at 25.00%	0.07	OK	
LC57 at 25.00%	0.07	OK	
LC58 at 25.00%	0.07	OK	
LC59 at 25.00%	0.07	OK	
LC6 at 25.00%	0.08	OK	
LC60 at 25.00%	0.07	OK	
LC61 at 25.00%	0.07	OK	
LC62 at 25.00%	0.07	OK	
LC63 at 25.00%	0.07	OK	
LC64 at 25.00%	0.07	OK	
LC65 at 25.00%	0.06	OK	
LC66 at 25.00%	0.06	OK	
LC67 at 25.00%	0.06	OK	
LC68 at 25.00%	0.06	OK	
LC69 at 25.00%	0.06	OK	
LC7 at 25.00%	0.07	OK	
LC70 at 25.00%	0.06	OK	
LC71 at 25.00%	0.06	OK	
LC72 at 25.00%	0.06	OK	
LC73 at 25.00%	0.06	OK	
LC74 at 25.00%	0.06	OK	
LC75 at 25.00%	0.06	OK	
LC76 at 25.00%	0.06	OK	
LC77 at 25.00%	0.07	OK	
LC78 at 25.00%	0.07	OK	
LC79 at 25.00%	0.07	OK	
LC8 at 25.00%	0.06	OK	
LC80 at 25.00%	0.07	OK	
LC81 at 25.00%	0.07	OK	
LC82 at 25.00%	0.07	OK	
LC83 at 25.00%	0.07	OK	
LC84 at 25.00%	0.07	OK	
LC85 at 25.00%	0.07	OK	
LC86 at 25.00%	0.07	OK	
LC87 at 25.00%	0.07	OK	
LC88 at 25.00%	0.07	OK	

	LC9 at 25.00%	0.06	OK
	W180 at 70.83%	0.02	OK
	W210 at 72.92%	0.01	OK
	W240 at 72.92%	0.01	OK
	W270 at 72.92%	0.01	OK
	W300 at 31.25%	0.01	OK
	W330 at 25.00%	0.02	OK
	WI180 at 70.83%	0.01	OK
	WI210 at 72.92%	0.00	OK
	WI240 at 72.92%	0.00	OK
	WI270 at 25.00%	0.00	OK
	WI300 at 25.00%	0.01	OK
	WI330 at 25.00%	0.01	OK
	WL180 at 70.83%	0.00	OK
	WL210 at 72.92%	0.00	OK
	WL240 at 72.92%	0.00	OK
	WL270 at 25.00%	0.00	OK
	WL300 at 25.00%	0.00	OK
	WL330 at 25.00%	0.00	OK
54	LC1 at 72.92%	0.19	OK
	LC10 at 70.83%	0.12	OK
	LC11 at 70.83%	0.12	OK
	LC12 at 70.83%	0.14	OK
	LC13 at 72.92%	0.19	OK
	LC14 at 72.92%	0.12	OK
	LC15 at 72.92%	0.09	OK
	LC16 at 72.92%	0.10	OK
	LC17 at 72.92%	0.09	OK
	LC18 at 72.92%	0.12	OK
	LC19 at 72.92%	0.19	OK
	LC2 at 72.92%	0.12	OK
	LC20 at 72.92%	0.12	OK
	LC21 at 72.92%	0.09	OK
	LC22 at 70.83%	0.10	OK
	LC23 at 70.83%	0.10	OK
	LC24 at 70.83%	0.13	OK
	LC25 at 25.00%	0.13	OK
	LC26 at 25.00%	0.13	OK
	LC27 at 25.00%	0.13	OK
	LC28 at 25.00%	0.13	OK
	LC29 at 25.00%	0.13	OK
	LC3 at 25.00%	0.10	OK
	LC30 at 25.00%	0.13	OK
	LC31 at 25.00%	0.13	OK
	LC32 at 25.00%	0.13	OK
	LC33 at 25.00%	0.13	OK
	LC34 at 25.00%	0.12	OK
	LC35 at 25.00%	0.12	OK
	LC36 at 25.00%	0.12	OK
	LC37 at 25.00%	0.06	OK
	LC38 at 25.00%	0.08	OK
	LC39 at 25.00%	0.07	OK
	LC4 at 72.92%	0.10	OK
	LC40 at 25.00%	0.19	OK
	LC41 at 25.00%	0.08	OK
	LC42 at 25.00%	0.08	OK
	LC43 at 25.00%	0.08	OK
	LC44 at 25.00%	0.08	OK
	LC45 at 25.00%	0.08	OK
	LC46 at 25.00%	0.08	OK
	LC47 at 25.00%	0.08	OK
	LC48 at 25.00%	0.08	OK
	LC49 at 25.00%	0.08	OK

	LC5 at 25.00%	0.10	OK	
	LC50 at 25.00%	0.08	OK	
	LC51 at 25.00%	0.08	OK	
	LC52 at 25.00%	0.08	OK	
	LC53 at 25.00%	0.08	OK	
	LC54 at 25.00%	0.08	OK	
	LC55 at 25.00%	0.08	OK	
	LC56 at 25.00%	0.08	OK	
	LC57 at 25.00%	0.08	OK	
	LC58 at 25.00%	0.08	OK	
	LC59 at 25.00%	0.08	OK	
	LC6 at 72.92%	0.12	OK	
	LC60 at 25.00%	0.07	OK	
	LC61 at 25.00%	0.07	OK	
	LC62 at 25.00%	0.07	OK	
	LC63 at 25.00%	0.07	OK	
	LC64 at 25.00%	0.07	OK	
	LC65 at 25.00%	0.08	OK	
	LC66 at 25.00%	0.08	OK	
	LC67 at 25.00%	0.08	OK	
	LC68 at 25.00%	0.08	OK	
	LC69 at 25.00%	0.08	OK	
	LC7 at 72.92%	0.19	OK	Eq. H1-1b
	LC70 at 25.00%	0.08	OK	
	LC71 at 25.00%	0.08	OK	
	LC72 at 25.00%	0.08	OK	
	LC73 at 25.00%	0.08	OK	
	LC74 at 25.00%	0.08	OK	
	LC75 at 25.00%	0.08	OK	
	LC76 at 25.00%	0.08	OK	
	LC77 at 25.00%	0.23	OK	
	LC78 at 25.00%	0.23	OK	
	LC79 at 25.00%	0.23	OK	
	LC8 at 70.83%	0.15	OK	
	LC80 at 25.00%	0.23	OK	
	LC81 at 25.00%	0.23	OK	
	LC82 at 25.00%	0.23	OK	
	LC83 at 25.00%	**0.23**	**OK**	Eq. H1-1b
	LC84 at 25.00%	0.23	OK	
	LC85 at 25.00%	0.23	OK	
	LC86 at 25.00%	0.23	OK	
	LC87 at 25.00%	0.23	OK	
	LC88 at 25.00%	0.23	OK	
	LC9 at 70.83%	0.11	OK	
	W180 at 72.92%	0.12	OK	
	W210 at 72.92%	0.07	OK	
	W240 at 72.92%	0.06	OK	
	W270 at 72.92%	0.06	OK	
	W300 at 72.92%	0.06	OK	
	W330 at 72.92%	0.07	OK	
	WI180 at 72.92%	0.05	OK	
	WI210 at 72.92%	0.03	OK	
	WI240 at 72.92%	0.02	OK	
	WI270 at 72.92%	0.03	OK	
	WI300 at 72.92%	0.02	OK	
	WI330 at 72.92%	0.03	OK	
	WL180 at 72.92%	0.01	OK	
	WL210 at 72.92%	0.01	OK	
	WL240 at 72.92%	0.01	OK	
	WL270 at 72.92%	0.01	OK	
	WL300 at 72.92%	0.01	OK	
	WL330 at 72.92%	0.01	OK	
55	LC1 at 0.00%	0.10	OK	

LC10 at 0.00%	0.16	OK	
LC11 at 0.00%	0.17	OK	
LC12 at 0.00%	0.16	OK	
LC13 at 0.00%	0.08	OK	
LC14 at 0.00%	0.09	OK	
LC15 at 0.00%	0.13	OK	
LC16 at 0.00%	0.14	OK	
LC17 at 0.00%	0.14	OK	
LC18 at 0.00%	0.12	OK	
LC19 at 0.00%	0.07	OK	
LC2 at 0.00%	0.11	OK	
LC20 at 0.00%	0.09	OK	
LC21 at 0.00%	0.12	OK	
LC22 at 0.00%	0.14	OK	
LC23 at 0.00%	0.15	OK	
LC24 at 0.00%	0.14	OK	
LC25 at 0.00%	0.11	OK	
LC26 at 0.00%	0.12	OK	
LC27 at 0.00%	0.12	OK	
LC28 at 0.00%	0.12	OK	
LC29 at 0.00%	0.12	OK	
LC3 at 0.00%	0.15	OK	
LC30 at 0.00%	0.12	OK	
LC31 at 0.00%	0.11	OK	
LC32 at 0.00%	0.12	OK	
LC33 at 0.00%	0.12	OK	
LC34 at 0.00%	0.12	OK	
LC35 at 0.00%	0.12	OK	
LC36 at 0.00%	0.12	OK	
LC37 at 0.00%	0.06	OK	
LC38 at 0.00%	0.21	OK	
LC39 at 0.00%	0.08	OK	
LC4 at 0.00%	0.16	OK	
LC40 at 100.00%	0.03	OK	
LC41 at 0.00%	0.23	OK	
LC42 at 0.00%	0.23	OK	
LC43 at 0.00%	0.23	OK	
LC44 at 0.00%	0.23	OK	
LC45 at 0.00%	0.23	OK	
LC46 at 0.00%	**0.23**	**OK**	Eq. H1-1b
LC47 at 0.00%	0.23	OK	
LC48 at 0.00%	0.23	OK	
LC49 at 0.00%	0.23	OK	
LC5 at 0.00%	0.16	OK	
LC50 at 0.00%	0.23	OK	
LC51 at 0.00%	0.23	OK	
LC52 at 0.00%	0.23	OK	Eq. H1-1b
LC53 at 0.00%	0.12	OK	
LC54 at 0.00%	0.12	OK	
LC55 at 0.00%	0.12	OK	
LC56 at 0.00%	0.12	OK	
LC57 at 0.00%	0.12	OK	
LC58 at 0.00%	0.12	OK	
LC59 at 0.00%	0.12	OK	
LC6 at 0.00%	0.14	OK	
LC60 at 0.00%	0.12	OK	
LC61 at 0.00%	0.12	OK	
LC62 at 0.00%	0.12	OK	
LC63 at 0.00%	0.12	OK	
LC64 at 0.00%	0.12	OK	
LC65 at 0.00%	0.06	OK	
LC66 at 0.00%	0.06	OK	
LC67 at 0.00%	0.06	OK	
LC68 at 0.00%	0.06	OK	

		LC69 at 0.00%	0.06	OK
		LC7 at 0.00%	0.09	OK
		LC70 at 0.00%	0.06	OK
		LC71 at 0.00%	0.06	OK
		LC72 at 0.00%	0.06	OK
		LC73 at 0.00%	0.06	OK
		LC74 at 0.00%	0.06	OK
		LC75 at 0.00%	0.06	OK
		LC76 at 0.00%	0.06	OK
		LC77 at 100.00%	0.04	OK
		LC78 at 100.00%	0.04	OK
		LC79 at 100.00%	0.04	OK
		LC8 at 0.00%	0.11	OK
		LC80 at 100.00%	0.04	OK
		LC81 at 100.00%	0.04	OK
		LC82 at 100.00%	0.04	OK
		LC83 at 100.00%	0.04	OK
		LC84 at 100.00%	0.04	OK
		LC85 at 100.00%	0.04	OK
		LC86 at 100.00%	0.04	OK
		LC87 at 100.00%	0.04	OK
		LC88 at 100.00%	0.04	OK
		LC9 at 0.00%	0.14	OK
		W180 at 100.00%	0.02	OK
		W210 at 0.00%	0.03	OK
		W240 at 0.00%	0.04	OK
		W270 at 0.00%	0.05	OK
		W300 at 0.00%	0.06	OK
		W330 at 100.00%	0.06	OK
		WI180 at 100.00%	0.01	OK
		WI210 at 100.00%	0.01	OK
		WI240 at 100.00%	0.01	OK
		WI270 at 100.00%	0.02	OK
		WI300 at 100.00%	0.02	OK
		WI330 at 100.00%	0.02	OK
		WL180 at 100.00%	0.00	OK
		WL210 at 100.00%	0.00	OK
		WL240 at 100.00%	0.00	OK
		WL270 at 100.00%	0.00	OK
		WL300 at 100.00%	0.01	OK
		WL330 at 100.00%	0.01	OK
PL 3x3/8	**47**	LC1 at 100.00%	0.16	OK
		LC10 at 100.00%	0.31	OK
		LC11 at 100.00%	0.31	OK
		LC12 at 100.00%	0.31	OK
		LC13 at 100.00%	0.13	OK
		LC14 at 0.00%	0.35	OK
		LC15 at 0.00%	0.38	OK
		LC16 at 0.00%	0.41	OK
		LC17 at 0.00%	0.37	OK
		LC18 at 0.00%	0.30	OK
		LC19 at 100.00%	0.05	OK
		LC2 at 0.00%	0.38	OK
		LC20 at 0.00%	0.22	OK
		LC21 at 0.00%	0.25	OK
		LC22 at 0.00%	0.29	OK
		LC23 at 100.00%	0.29	OK
		LC24 at 100.00%	0.29	OK
		LC25 at 100.00%	0.18	OK
		LC26 at 0.00%	0.21	OK
		LC27 at 0.00%	0.20	OK
		LC28 at 0.00%	0.21	OK
		LC29 at 0.00%	0.19	OK

LC3 at 0.00%	0.41	OK	
LC30 at 0.00%	0.20	OK	
LC31 at 100.00%	0.17	OK	
LC32 at 100.00%	0.20	OK	
LC33 at 100.00%	0.19	OK	
LC34 at 100.00%	0.20	OK	
LC35 at 100.00%	0.20	OK	
LC36 at 100.00%	0.20	OK	
LC37 at 100.00%	0.09	OK	
LC38 at 0.00%	0.39	OK	
LC39 at 100.00%	0.15	OK	
LC4 at 0.00%	0.44	OK	
LC40 at 100.00%	0.31	OK	
LC41 at 0.00%	0.49	OK	
LC42 at 0.00%	0.50	OK	
LC43 at 0.00%	0.50	OK	
LC44 at 0.00%	**0.50**	**OK**	Eq. H1-1b
LC45 at 0.00%	0.50	OK	
LC46 at 0.00%	0.50	OK	
LC47 at 0.00%	0.48	OK	
LC48 at 0.00%	0.47	OK	
LC49 at 0.00%	0.47	OK	
LC5 at 0.00%	0.39	OK	
LC50 at 0.00%	0.47	OK	
LC51 at 0.00%	0.47	OK	
LC52 at 0.00%	0.47	OK	
LC53 at 0.00%	0.26	OK	
LC54 at 0.00%	0.28	OK	
LC55 at 0.00%	0.28	OK	
LC56 at 0.00%	0.28	OK	
LC57 at 0.00%	0.28	OK	
LC58 at 0.00%	0.28	OK	
LC59 at 0.00%	0.26	OK	
LC6 at 0.00%	0.33	OK	
LC60 at 0.00%	0.24	OK	
LC61 at 0.00%	0.25	OK	
LC62 at 0.00%	0.24	OK	
LC63 at 0.00%	0.25	OK	
LC64 at 0.00%	0.25	OK	
LC65 at 100.00%	0.21	OK	
LC66 at 100.00%	0.20	OK	
LC67 at 100.00%	0.20	OK	
LC68 at 100.00%	0.19	OK	
LC69 at 100.00%	0.19	OK	
LC7 at 100.00%	0.08	OK	
LC70 at 100.00%	0.19	OK	
LC71 at 100.00%	0.20	OK	
LC72 at 100.00%	0.21	OK	
LC73 at 100.00%	0.21	OK	
LC74 at 100.00%	0.22	OK	
LC75 at 100.00%	0.22	OK	
LC76 at 100.00%	0.22	OK	
LC77 at 100.00%	0.38	OK	
LC78 at 100.00%	0.37	OK	
LC79 at 100.00%	0.37	OK	
LC8 at 0.00%	0.20	OK	
LC80 at 100.00%	0.37	OK	
LC81 at 100.00%	0.37	OK	
LC82 at 100.00%	0.37	OK	
LC83 at 100.00%	0.38	OK	
LC84 at 100.00%	0.39	OK	
LC85 at 100.00%	0.39	OK	
LC86 at 100.00%	0.39	OK	
LC87 at 100.00%	0.39	OK	

	LC88 at 100.00%	0.39	OK	Eq. H1-1b
	LC9 at 100.00%	0.25	OK	
	W180 at 100.00%	0.05	OK	
	W210 at 0.00%	0.18	OK	
	W240 at 0.00%	0.19	OK	
	W270 at 0.00%	0.21	OK	
	W300 at 0.00%	0.19	OK	
	W330 at 0.00%	0.15	OK	
	WI180 at 100.00%	0.01	OK	
	WI210 at 0.00%	0.07	OK	
	WI240 at 0.00%	0.06	OK	
	WI270 at 0.00%	0.07	OK	
	WI300 at 0.00%	0.06	OK	
	WI330 at 0.00%	0.07	OK	
	WL180 at 100.00%	0.00	OK	
	WL210 at 0.00%	0.02	OK	
	WL240 at 0.00%	0.02	OK	
	WL270 at 0.00%	0.02	OK	
	WL300 at 0.00%	0.01	OK	
	WL330 at 0.00%	0.02	OK	
48	LC1 at 100.00%	0.17	OK	
	LC10 at 0.00%	0.42	OK	
	LC11 at 0.00%	0.41	OK	
	LC12 at 0.00%	0.39	OK	
	LC13 at 100.00%	0.13	OK	
	LC14 at 100.00%	0.25	OK	
	LC15 at 100.00%	0.25	OK	
	LC16 at 0.00%	0.30	OK	
	LC17 at 0.00%	0.28	OK	
	LC18 at 0.00%	0.26	OK	
	LC19 at 100.00%	0.11	OK	
	LC2 at 100.00%	0.27	OK	
	LC20 at 0.00%	0.27	OK	
	LC21 at 0.00%	0.34	OK	
	LC22 at 0.00%	0.40	OK	
	LC23 at 0.00%	0.39	OK	
	LC24 at 0.00%	0.37	OK	
	LC25 at 100.00%	0.25	OK	
	LC26 at 100.00%	0.27	OK	
	LC27 at 100.00%	0.27	OK	
	LC28 at 100.00%	0.27	OK	
	LC29 at 100.00%	0.27	OK	
	LC3 at 100.00%	0.27	OK	
	LC30 at 100.00%	0.27	OK	
	LC31 at 100.00%	0.25	OK	
	LC32 at 100.00%	0.22	OK	
	LC33 at 100.00%	0.22	OK	
	LC34 at 100.00%	0.22	OK	
	LC35 at 100.00%	0.22	OK	
	LC36 at 100.00%	0.22	OK	
	LC37 at 100.00%	0.12	OK	
	LC38 at 100.00%	0.31	OK	
	LC39 at 100.00%	0.22	OK	
	LC4 at 100.00%	0.29	OK	
	LC40 at 0.00%	0.36	OK	
	LC41 at 100.00%	0.38	OK	
	LC42 at 100.00%	0.40	OK	Eq. H1-1b
	LC43 at 100.00%	0.39	OK	
	LC44 at 100.00%	0.39	OK	
	LC45 at 100.00%	0.39	OK	
	LC46 at 100.00%	0.39	OK	
	LC47 at 100.00%	0.38	OK	
	LC48 at 100.00%	0.37	OK	

LC49 at 100.00%	0.37	OK	
LC5 at 100.00%	0.28	OK	
LC50 at 100.00%	0.37	OK	
LC51 at 100.00%	0.37	OK	
LC52 at 100.00%	0.37	OK	
LC53 at 100.00%	0.23	OK	
LC54 at 100.00%	0.24	OK	
LC55 at 100.00%	0.24	OK	
LC56 at 100.00%	0.24	OK	
LC57 at 100.00%	0.24	OK	
LC58 at 100.00%	0.24	OK	
LC59 at 100.00%	0.23	OK	
LC6 at 100.00%	0.25	OK	
LC60 at 100.00%	0.22	OK	
LC61 at 100.00%	0.23	OK	
LC62 at 100.00%	0.22	OK	
LC63 at 100.00%	0.23	OK	
LC64 at 100.00%	0.22	OK	
LC65 at 100.00%	0.24	OK	
LC66 at 100.00%	0.25	OK	
LC67 at 100.00%	0.25	OK	
LC68 at 100.00%	0.25	OK	
LC69 at 100.00%	0.25	OK	
LC7 at 100.00%	0.15	OK	
LC70 at 100.00%	0.25	OK	
LC71 at 100.00%	0.24	OK	
LC72 at 0.00%	0.24	OK	
LC73 at 0.00%	0.24	OK	
LC74 at 0.00%	0.25	OK	
LC75 at 0.00%	0.25	OK	
LC76 at 0.00%	0.25	OK	
LC77 at 0.00%	0.46	OK	
LC78 at 0.00%	0.44	OK	
LC79 at 0.00%	0.44	OK	
LC8 at 0.00%	0.29	OK	
LC80 at 0.00%	0.44	OK	
LC81 at 0.00%	0.44	OK	
LC82 at 0.00%	0.43	OK	
LC83 at 0.00%	0.45	OK	
LC84 at 0.00%	0.47	OK	
LC85 at 0.00%	0.47	OK	
LC86 at 0.00%	0.47	OK	
LC87 at 0.00%	0.47	OK	
LC88 at 0.00%	**0.47**	**OK**	Eq. H1-1b
LC9 at 0.00%	0.36	OK	
W180 at 0.00%	0.03	OK	
W210 at 0.00%	0.13	OK	
W240 at 0.00%	0.18	OK	
W270 at 0.00%	0.22	OK	
W300 at 0.00%	0.21	OK	
W330 at 0.00%	0.19	OK	
WI180 at 0.00%	0.01	OK	
WI210 at 0.00%	0.06	OK	
WI240 at 0.00%	0.05	OK	
WI270 at 0.00%	0.07	OK	
WI300 at 0.00%	0.06	OK	
WI330 at 0.00%	0.07	OK	
WL180 at 0.00%	0.00	OK	
WL210 at 0.00%	0.02	OK	
WL240 at 0.00%	0.01	OK	
WL270 at 0.00%	0.02	OK	
WL300 at 0.00%	0.02	OK	
WL330 at 0.00%	0.02	OK	

T2L 2-1_2X2-1_2X3_16	4	LC1 at 66.67%	0.18	OK	
		LC10 at 66.67%	0.29	OK	
		LC11 at 66.67%	0.28	OK	
		LC12 at 66.67%	0.28	OK	
		LC13 at 66.67%	0.14	OK	
		LC14 at 66.67%	0.18	OK	
		LC15 at 66.67%	0.21	OK	
		LC16 at 66.67%	0.26	OK	
		LC17 at 62.50%	0.27	OK	
		LC18 at 62.50%	0.29	OK	
		LC19 at 62.50%	0.18	OK	
		LC2 at 66.67%	0.20	OK	
		LC20 at 66.67%	0.22	OK	
		LC21 at 66.67%	0.23	OK	
		LC22 at 66.67%	0.25	OK	
		LC23 at 66.67%	0.24	OK	
		LC24 at 66.67%	0.24	OK	
		LC25 at 66.67%	0.26	OK	
		LC26 at 66.67%	0.23	OK	
		LC27 at 66.67%	0.23	OK	
		LC28 at 66.67%	0.22	OK	
		LC29 at 66.67%	0.23	OK	
		LC3 at 66.67%	0.23	OK	
		LC30 at 100.00%	0.22	OK	
		LC31 at 66.67%	0.25	OK	
		LC32 at 66.67%	0.28	OK	
		LC33 at 66.67%	0.28	OK	
		LC34 at 66.67%	0.28	OK	
		LC35 at 66.67%	0.28	OK	
		LC36 at 66.67%	0.28	OK	
		LC37 at 66.67%	0.12	OK	
		LC38 at 0.00%	0.35	OK	
		LC39 at 66.67%	0.16	OK	
		LC4 at 66.67%	0.28	OK	
		LC40 at 66.67%	0.39	OK	
		LC41 at 0.00%	0.43	OK	
		LC42 at 0.00%	0.44	OK	
		LC43 at 0.00%	0.44	OK	
		LC44 at 0.00%	0.44	OK	
		LC45 at 0.00%	0.44	OK	
		LC46 at 0.00%	0.44	OK	Eq. H2-1
		LC47 at 0.00%	0.44	OK	
		LC48 at 0.00%	0.43	OK	
		LC49 at 0.00%	0.43	OK	
		LC5 at 62.50%	0.29	OK	
		LC50 at 0.00%	0.43	OK	
		LC51 at 0.00%	0.43	OK	
		LC52 at 0.00%	0.43	OK	
		LC53 at 66.67%	0.16	OK	
		LC54 at 66.67%	0.15	OK	
		LC55 at 66.67%	0.16	OK	
		LC56 at 66.67%	0.15	OK	
		LC57 at 66.67%	0.15	OK	
		LC58 at 66.67%	0.15	OK	
		LC59 at 66.67%	0.16	OK	
		LC6 at 62.50%	0.31	OK	
		LC60 at 66.67%	0.17	OK	
		LC61 at 66.67%	0.17	OK	
		LC62 at 66.67%	0.17	OK	
		LC63 at 66.67%	0.17	OK	
		LC64 at 66.67%	0.17	OK	
		LC65 at 100.00%	0.17	OK	
		LC66 at 100.00%	0.16	OK	
		LC67 at 100.00%	0.16	OK	

	LC68 at 100.00%	0.16	OK	
	LC69 at 100.00%	0.16	OK	
	LC7 at 62.50%	0.20	OK	
	LC70 at 100.00%	0.16	OK	
	LC71 at 100.00%	0.17	OK	
	LC72 at 100.00%	0.17	OK	
	LC73 at 100.00%	0.17	OK	
	LC74 at 100.00%	0.17	OK	
	LC75 at 100.00%	0.17	OK	
	LC76 at 100.00%	0.17	OK	
	LC77 at 66.67%	0.48	OK	
	LC78 at 100.00%	0.47	OK	
	LC79 at 66.67%	0.47	OK	
	LC8 at 66.67%	0.26	OK	
	LC80 at 100.00%	0.47	OK	
	LC81 at 100.00%	0.47	OK	
	LC82 at 100.00%	0.47	OK	
	LC83 at 66.67%	0.47	OK	
	LC84 at 66.67%	0.48	OK	
	LC85 at 66.67%	0.48	OK	
	LC86 at 66.67%	0.48	OK	
	LC87 at 66.67%	0.48	OK	
	LC88 at 66.67%	**0.48**	**OK**	Eq. H2-1
	LC9 at 66.67%	0.27	OK	
	W180 at 62.50%	0.08	OK	
	W210 at 36.46%	0.08	OK	
	W240 at 36.46%	0.08	OK	
	W270 at 32.29%	0.11	OK	
	W300 at 32.29%	0.12	OK	
	W330 at 32.29%	0.12	OK	
	WI180 at 62.50%	0.03	OK	
	WI210 at 36.46%	0.03	OK	
	WI240 at 36.46%	0.03	OK	
	WI270 at 32.29%	0.04	OK	
	WI300 at 32.29%	0.04	OK	
	WI330 at 32.29%	0.05	OK	
	WL180 at 62.50%	0.01	OK	
	WL210 at 36.46%	0.01	OK	
	WL240 at 36.46%	0.01	OK	
	WL270 at 32.29%	0.01	OK	
	WL300 at 32.29%	0.01	OK	
	WL330 at 32.29%	0.01	OK	
11	LC1 at 32.29%	0.19	OK	
	LC10 at 32.29%	0.33	OK	
	LC11 at 32.29%	0.34	OK	
	LC12 at 32.29%	0.33	OK	
	LC13 at 32.29%	0.16	OK	
	LC14 at 66.67%	0.25	OK	
	LC15 at 66.67%	0.27	OK	
	LC16 at 66.67%	0.32	OK	
	LC17 at 62.50%	0.33	OK	
	LC18 at 62.50%	0.32	OK	
	LC19 at 62.50%	0.16	OK	
	LC2 at 66.67%	0.29	OK	
	LC20 at 36.46%	0.22	OK	
	LC21 at 36.46%	0.24	OK	
	LC22 at 32.29%	0.30	OK	
	LC23 at 32.29%	0.31	OK	
	LC24 at 32.29%	0.30	OK	
	LC25 at 66.67%	0.22	OK	
	LC26 at 66.67%	0.27	OK	
	LC27 at 66.67%	0.26	OK	
	LC28 at 66.67%	0.28	OK	

LC29 at 66.67%	0.27	OK	
LC3 at 66.67%	0.31	OK	
LC30 at 66.67%	0.28	OK	
LC31 at 66.67%	0.23	OK	
LC32 at 32.29%	0.21	OK	
LC33 at 32.29%	0.20	OK	
LC34 at 32.29%	0.22	OK	
LC35 at 32.29%	0.23	OK	
LC36 at 32.29%	0.23	OK	
LC37 at 66.67%	0.11	OK	
LC38 at 32.29%	0.36	OK	
LC39 at 66.67%	0.14	OK	
LC4 at 66.67%	0.35	OK	
LC40 at 66.67%	0.39	OK	
LC41 at 32.29%	0.47	OK	
LC42 at 32.29%	0.46	OK	
LC43 at 32.29%	0.46	OK	
LC44 at 32.29%	0.45	OK	
LC45 at 32.29%	0.45	OK	
LC46 at 32.29%	0.45	OK	
LC47 at 32.29%	0.46	OK	
LC48 at 32.29%	0.47	OK	
LC49 at 32.29%	0.47	OK	
LC5 at 62.50%	0.35	OK	
LC50 at 32.29%	0.48	OK	
LC51 at 32.29%	0.48	OK	
LC52 at 32.29%	0.48	OK	Eq. H2-1
LC53 at 61.46%	0.14	OK	
LC54 at 61.46%	0.15	OK	
LC55 at 61.46%	0.15	OK	
LC56 at 61.46%	0.15	OK	
LC57 at 61.46%	0.15	OK	
LC58 at 61.46%	0.15	OK	
LC59 at 61.46%	0.15	OK	
LC6 at 62.50%	0.35	OK	
LC60 at 61.46%	0.14	OK	
LC61 at 61.46%	0.14	OK	
LC62 at 61.46%	0.14	OK	
LC63 at 61.46%	0.14	OK	
LC64 at 61.46%	0.14	OK	
LC65 at 100.00%	0.14	OK	
LC66 at 100.00%	0.14	OK	
LC67 at 100.00%	0.14	OK	
LC68 at 100.00%	0.14	OK	
LC69 at 100.00%	0.14	OK	
LC7 at 62.50%	0.18	OK	
LC70 at 100.00%	0.14	OK	
LC71 at 100.00%	0.14	OK	
LC72 at 100.00%	0.14	OK	
LC73 at 100.00%	0.14	OK	
LC74 at 100.00%	0.14	OK	
LC75 at 100.00%	0.14	OK	
LC76 at 100.00%	0.14	OK	
LC77 at 66.67%	0.49	OK	
LC78 at 66.67%	0.50	OK	
LC79 at 66.67%	0.50	OK	
LC8 at 36.46%	0.24	OK	
LC80 at 66.67%	0.50	OK	
LC81 at 66.67%	0.50	OK	
LC82 at 66.67%	**0.50**	**OK**	Eq. H2-1
LC83 at 66.67%	0.49	OK	
LC84 at 66.67%	0.48	OK	
LC85 at 66.67%	0.48	OK	
LC86 at 66.67%	0.48	OK	

		LC87 at 66.67%	0.48	OK	
		LC88 at 66.67%	0.48	OK	
		LC9 at 32.29%	0.26	OK	
		W180 at 62.50%	0.06	OK	
		W210 at 36.46%	0.12	OK	
		W240 at 36.46%	0.13	OK	
		W270 at 36.46%	0.15	OK	
		W300 at 33.33%	0.15	OK	
		W330 at 33.33%	0.15	OK	
		WI180 at 62.50%	0.02	OK	
		WI210 at 36.46%	0.05	OK	
		WI240 at 36.46%	0.04	OK	
		WI270 at 36.46%	0.05	OK	
		WI300 at 33.33%	0.05	OK	
		WI330 at 33.33%	0.06	OK	
		WL180 at 62.50%	0.01	OK	
		WL210 at 36.46%	0.01	OK	
		WL240 at 36.46%	0.01	OK	
		WL270 at 36.46%	0.01	OK	
		WL300 at 33.33%	0.01	OK	
		WL330 at 33.33%	0.02	OK	
T2L 2X2X3_16X3_8	**30**	LC1 at 89.06%	0.29	OK	
		LC10 at 100.00%	0.34	OK	
		LC11 at 100.00%	0.34	OK	
		LC12 at 100.00%	0.34	OK	
		LC13 at 89.06%	0.21	OK	
		LC14 at 0.00%	0.31	OK	
		LC15 at 0.00%	0.35	OK	
		LC16 at 0.00%	0.39	OK	
		LC17 at 0.00%	0.38	OK	
		LC18 at 0.00%	0.37	OK	
		LC19 at 89.06%	0.23	OK	
		LC2 at 0.00%	0.37	OK	
		LC20 at 100.00%	0.24	OK	
		LC21 at 100.00%	0.26	OK	
		LC22 at 100.00%	0.28	OK	
		LC23 at 100.00%	0.27	OK	
		LC24 at 100.00%	0.28	OK	
		LC25 at 89.06%	0.45	OK	
		LC26 at 89.06%	0.46	OK	
		LC27 at 89.06%	0.46	OK	
		LC28 at 89.06%	0.46	OK	
		LC29 at 89.06%	0.46	OK	
		LC3 at 0.00%	0.40	OK	
		LC30 at 89.06%	0.46	OK	
		LC31 at 89.06%	0.46	OK	
		LC32 at 89.06%	0.45	OK	
		LC33 at 89.06%	0.45	OK	
		LC34 at 89.06%	0.45	OK	
		LC35 at 89.06%	0.45	OK	
		LC36 at 89.06%	0.45	OK	
		LC37 at 89.06%	0.22	OK	
		LC38 at 0.00%	0.42	OK	
		LC39 at 89.06%	0.41	OK	
		LC4 at 0.00%	0.45	OK	
		LC40 at 89.06%	0.55	OK	
		LC41 at 0.00%	0.48	OK	
		LC42 at 0.00%	0.49	OK	
		LC43 at 0.00%	0.49	OK	
		LC44 at 0.00%	0.49	OK	
		LC45 at 0.00%	0.49	OK	
		LC46 at 0.00%	0.49	OK	Eq. H2-1
		LC47 at 0.00%	0.48	OK	

LC48 at 0.00%	0.47	OK	
LC49 at 0.00%	0.47	OK	
LC5 at 0.00%	0.44	OK	
LC50 at 0.00%	0.46	OK	
LC51 at 0.00%	0.47	OK	
LC52 at 0.00%	0.46	OK	
LC53 at 89.06%	0.36	OK	
LC54 at 0.00%	0.37	OK	
LC55 at 0.00%	0.37	OK	
LC56 at 0.00%	0.37	OK	
LC57 at 0.00%	0.37	OK	
LC58 at 0.00%	0.37	OK	
LC59 at 90.63%	0.36	OK	
LC6 at 0.00%	0.43	OK	
LC60 at 90.63%	0.36	OK	
LC61 at 90.63%	0.36	OK	
LC62 at 90.63%	0.36	OK	
LC63 at 90.63%	0.36	OK	
LC64 at 90.63%	0.36	OK	
LC65 at 89.06%	0.52	OK	
LC66 at 89.06%	0.52	OK	
LC67 at 89.06%	0.52	OK	
LC68 at 89.06%	0.52	OK	
LC69 at 89.06%	0.52	OK	
LC7 at 89.06%	0.30	OK	
LC70 at 89.06%	0.52	OK	
LC71 at 89.06%	0.52	OK	
LC72 at 89.06%	0.52	OK	
LC73 at 89.06%	0.52	OK	
LC74 at 89.06%	0.52	OK	
LC75 at 89.06%	0.51	OK	
LC76 at 89.06%	0.51	OK	
LC77 at 89.06%	0.62	OK	
LC78 at 89.06%	0.62	OK	
LC79 at 89.06%	0.62	OK	
LC8 at 100.00%	0.31	OK	
LC80 at 89.06%	0.62	OK	
LC81 at 89.06%	0.62	OK	
LC82 at 89.06%	**0.62**	**OK**	Eq. H2-1
LC83 at 89.06%	0.62	OK	
LC84 at 89.06%	0.61	OK	
LC85 at 89.06%	0.61	OK	
LC86 at 89.06%	0.61	OK	
LC87 at 89.06%	0.61	OK	
LC88 at 89.06%	0.61	OK	
LC9 at 100.00%	0.33	OK	
W180 at 0.00%	0.02	OK	
W210 at 50.00%	0.08	OK	
W240 at 50.00%	0.11	OK	
W270 at 50.00%	0.13	OK	
W300 at 50.00%	0.12	OK	
W330 at 50.00%	0.12	OK	
WI180 at 0.00%	0.01	OK	
WI210 at 50.00%	0.04	OK	
WI240 at 50.00%	0.03	OK	
WI270 at 50.00%	0.05	OK	
WI300 at 50.00%	0.04	OK	
WI330 at 50.00%	0.05	OK	
WL180 at 0.00%	0.00	OK	
WL210 at 50.00%	0.01	OK	
WL240 at 50.00%	0.01	OK	
WL270 at 50.00%	0.01	OK	
WL300 at 50.00%	0.01	OK	
WL330 at 50.00%	0.01	OK	

31	LC1 at 9.38%	0.36	OK	
	LC10 at 0.00%	0.58	OK	
	LC11 at 0.00%	0.55	OK	
	LC12 at 0.00%	0.52	OK	
	LC13 at 9.38%	0.27	OK	
	LC14 at 50.00%	0.27	OK	
	LC15 at 50.00%	0.27	OK	
	LC16 at 50.00%	0.28	OK	
	LC17 at 50.00%	0.25	OK	
	LC18 at 50.00%	0.21	OK	
	LC19 at 0.00%	0.29	OK	
	LC2 at 50.00%	0.29	OK	
	LC20 at 0.00%	0.46	OK	
	LC21 at 0.00%	0.47	OK	
	LC22 at 0.00%	0.49	OK	
	LC23 at 0.00%	0.46	OK	
	LC24 at 0.00%	0.43	OK	
	LC25 at 0.00%	0.56	OK	
	LC26 at 0.00%	0.52	OK	
	LC27 at 0.00%	0.52	OK	
	LC28 at 0.00%	0.52	OK	
	LC29 at 0.00%	0.53	OK	
	LC3 at 50.00%	0.30	OK	
	LC30 at 0.00%	0.52	OK	
	LC31 at 0.00%	0.56	OK	
	LC32 at 0.00%	0.61	OK	
	LC33 at 0.00%	0.60	OK	
	LC34 at 0.00%	0.61	OK	Eq. H2-1
	LC35 at 0.00%	0.60	OK	
	LC36 at 0.00%	0.60	OK	
	LC37 at 0.00%	0.27	OK	
	LC38 at 10.94%	0.56	OK	
	LC39 at 0.00%	0.51	OK	
	LC4 at 50.00%	0.31	OK	
	LC40 at 0.00%	0.49	OK	
	LC41 at 10.94%	0.61	OK	
	LC42 at 10.94%	0.61	OK	
	LC43 at 10.94%	0.61	OK	
	LC44 at 10.94%	0.61	OK	
	LC45 at 10.94%	0.61	OK	
	LC46 at 10.94%	0.61	OK	
	LC47 at 10.94%	0.61	OK	
	LC48 at 10.94%	0.62	OK	
	LC49 at 10.94%	0.62	OK	
	LC5 at 50.00%	0.27	OK	
	LC50 at 10.94%	0.62	OK	
	LC51 at 10.94%	0.62	OK	
	LC52 at 10.94%	**0.62**	**OK**	Eq. H2-1
	LC53 at 0.00%	0.58	OK	
	LC54 at 0.00%	0.56	OK	
	LC55 at 0.00%	0.57	OK	
	LC56 at 0.00%	0.56	OK	
	LC57 at 0.00%	0.57	OK	
	LC58 at 0.00%	0.56	OK	
	LC59 at 0.00%	0.58	OK	
	LC6 at 10.94%	0.28	OK	
	LC60 at 0.00%	0.59	OK	
	LC61 at 0.00%	0.59	OK	
	LC62 at 0.00%	0.59	OK	
	LC63 at 0.00%	0.59	OK	
	LC64 at 0.00%	0.59	OK	
	LC65 at 0.00%	0.51	OK	
	LC66 at 0.00%	0.49	OK	

LC67 at 0.00%	0.50	OK
LC68 at 0.00%	0.49	OK
LC69 at 0.00%	0.50	OK
LC7 at 0.00%	0.38	OK
LC70 at 0.00%	0.50	OK
LC71 at 0.00%	0.51	OK
LC72 at 0.00%	0.52	OK
LC73 at 0.00%	0.52	OK
LC74 at 0.00%	0.52	OK
LC75 at 0.00%	0.52	OK
LC76 at 0.00%	0.52	OK
LC77 at 0.00%	0.53	OK
LC78 at 0.00%	0.52	OK
LC79 at 0.00%	0.52	OK
LC8 at 0.00%	0.55	OK
LC80 at 0.00%	0.52	OK
LC81 at 0.00%	0.52	OK
LC82 at 0.00%	0.52	OK
LC83 at 0.00%	0.53	OK
LC84 at 0.00%	0.54	OK
LC85 at 0.00%	0.54	OK
LC86 at 0.00%	0.54	OK
LC87 at 0.00%	0.54	OK
LC88 at 0.00%	0.54	OK
LC9 at 0.00%	0.56	OK
W180 at 100.00%	0.03	OK
W210 at 0.00%	0.12	OK
W240 at 0.00%	0.12	OK
W270 at 0.00%	0.14	OK
W300 at 0.00%	0.12	OK
W330 at 0.00%	0.10	OK
WI180 at 100.00%	0.01	OK
WI210 at 0.00%	0.05	OK
WI240 at 0.00%	0.04	OK
WI270 at 0.00%	0.05	OK
WI300 at 0.00%	0.04	OK
WI330 at 0.00%	0.04	OK
WL180 at 100.00%	0.00	OK
WL210 at 0.00%	0.01	OK
WL240 at 0.00%	0.01	OK
WL270 at 0.00%	0.01	OK
WL300 at 0.00%	0.01	OK
WL330 at 0.00%	0.01	OK

Bentley

Current Date: 6/13/2018 1:17 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT0968\CT0968 (Mod.).etz\

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
73	-4.3333	2.66	-1.00	0
79	-4.3333	2.66	-1.625	0
80	-5.9167	2.66	-1.625	0
74	-5.9167	2.66	-1.00	0
93	-4.3333	1.46	-1.00	0
94	-4.3333	1.46	-1.625	0
95	-5.9167	1.46	-1.625	0
96	-5.9167	1.46	-1.00	0
1	0.875	0.00	0.00	0
2	-11.125	0.00	0.00	0
5	-6.625	0.00	0.00	0
6	-3.625	0.00	0.00	0
7	-5.9167	0.00	-1.00	0
8	-4.3333	0.00	-1.00	0
9	-7.125	0.00	0.00	0
10	-3.125	0.00	0.00	0
11	-7.125	0.00	0.20	0
12	0.875	0.00	0.20	0
13	-11.125	0.00	0.20	0
14	0.875	2.96	0.00	0
15	-11.125	2.96	0.00	0
18	-6.625	2.96	0.00	0

19	-3.625	2.96	0.00	0
20	-5.9167	2.96	-1.00	0
21	-4.3333	2.96	-1.00	0
22	-7.125	2.96	0.00	0
23	-3.125	2.96	0.00	0
24	-7.125	2.96	0.20	0
25	0.875	2.96	0.20	0
26	-11.125	2.96	0.20	0
40	-7.125	4.375	0.20	0
41	0.875	4.375	0.20	0
43	-7.125	-1.625	0.20	0
44	0.875	-1.625	0.20	0
65	-11.125	1.375	0.00	0
66	-9.00	1.375	-7.00	0
69	-3.125	0.00	0.20	0
70	-3.125	2.96	0.20	0
75	-4.3333	0.30	-1.00	0
76	-5.9167	0.30	-1.00	0
77	-4.3333	0.30	-1.625	0
78	-5.9167	0.30	-1.625	0
81	-5.125	2.66	-1.625	0
82	-5.125	0.30	-1.625	0
83	-5.125	4.00	-1.625	0
84	-5.125	-0.20	-1.625	0
85	-5.125	2.96	0.00	0
86	-5.125	0.00	0.00	0
87	-3.125	4.00	0.20	0
88	-3.125	-2.00	0.20	0
89	-11.125	-1.625	0.20	0
90	-11.125	4.375	0.20	0
91	0.875	1.375	0.00	0
92	-2.00	1.375	-7.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
66	1	1	1	1	1	1
83	1	1	1	1	1	1
84	1	1	1	1	1	1
92	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
45	79	73		C 3x1.5x0.1875	A36	0.00	0.00	0.00
49	79	80		C 3x1.5x0.1875	A36	0.00	0.00	0.00
46	80	74		C 3x1.5x0.1875	A36	0.00	0.00	0.00
56	94	93		C 3x1.5x0.1875	A36	0.00	0.00	0.00
57	94	95		C 3x1.5x0.1875	A36	0.00	0.00	0.00
58	95	96		C 3x1.5x0.1875	A36	0.00	0.00	0.00

1	8	7	LU 3X2X1_4	A36	0.00	0.00	0.00
2	8	6	LU 3X2X1_4	A36	0.00	0.00	0.00
3	7	5	LU 3X2X1_4	A36	0.00	0.00	0.00
4	1	2	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
8	21	20	LU 3X2X1_4	A36	0.00	0.00	0.00
9	21	19	LU 3X2X1_4	A36	0.00	0.00	0.00
10	20	18	LU 3X2X1_4	A36	0.00	0.00	0.00
11	14	15	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
16	40	43	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
18	22	9	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	15	2	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
20	14	1	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	7	20	T2L 2X2X3_16X3_8	A36	0.00	0.00	0.00
31	8	21	T2L 2X2X3_16X3_8	A36	0.00	0.00	0.00
32	23	10	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	66	65	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
47	77	75	PL 3x3/8	A36	0.00	0.00	0.00
48	78	76	PL 3x3/8	A36	0.00	0.00	0.00
50	77	78	C 3x1.5x0.1875	A36	0.00	0.00	0.00
51	84	83	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
52	86	85	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	87	88	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
17	41	44	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
54	90	89	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
55	92	91	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
45	180.00	0	0.00	0.00	0.00
49	180.00	0	0.00	0.00	0.00
56	180.00	0	0.00	0.00	0.00
57	180.00	0	0.00	0.00	0.00
1	270.00	0	0.00	0.00	0.00
3	270.00	0	0.00	0.00	0.00
4	90.00	0	0.00	0.00	0.00
8	180.00	0	0.00	0.00	0.00
9	90.00	0	0.00	0.00	0.00
10	180.00	0	0.00	0.00	0.00
11	90.00	0	0.00	0.00	0.00
16	45.00	0	-0.7071	0.00	-0.7071
18	45.00	0	0.00	0.00	0.00
19	45.00	0	0.00	0.00	0.00
20	45.00	0	0.00	0.00	0.00
30	0.00	0	0.00	0.00	1.00
31	-180.00	0	0.00	0.00	1.00
32	45.00	0	0.00	0.00	0.00
47	180.00	0	0.00	0.00	0.00
50	180.00	0	0.00	0.00	0.00
51	0.00	2	1.00	0.00	0.00
52	0.00	2	1.00	0.00	0.00
53	45.00	0	-0.7071	0.00	-0.7071
17	45.00	0	-0.7071	0.00	-0.7071
54	45.00	0	-0.7071	0.00	-0.7071

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
30	1.00	0.00	0.00	1.00	0.00	0.00
31	-1.00	0.00	0.00	-1.00	0.00	0.00

LAKE AVE EXT

Location	LAKE AVE EXT	**Mblu**	E12/ / 40/ /
Acct#		**Owner**	STATE OF CONNECTICUT
Assessment	$192,087,200	**Appraisal**	$274,410,200
PID	24558	**Building Count**	11

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$224,010,100	$50,400,100	$274,410,200
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$156,807,100	$35,280,100	$192,087,200

Owner of Record

Owner	STATE OF CONNECTICUT	**Sale Price**	$0
Co-Owner	C/O WCSU - LUIGI MARCONE	**Book & Page**	0552/0585
Address	181 WHITE ST DANBURY, CT 06810	**Sale Date**	05/08/1974

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
STATE OF CONNECTICUT	$0	0552/0585	05/08/1974

Building Information

Building 1 : Section 1

Year Built:	1979
Living Area:	96,100
Replacement Cost:	$23,344,766
Building Percent Good:	75
Replacement Cost Less Depreciation:	$17,508,600

Building Attributes	
Field	**Description**
STYLE	School/College
MODEL	Commercial
Grade	Good+

Building Photo

Stories:	1
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Heat Pump
Bldg Use	Education
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

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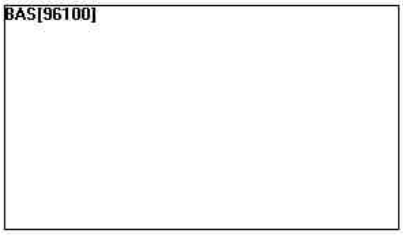
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	96,100	96,100
		96,100	96,100

Building 2 : Section 1

Year Built: 1993
Living Area: 63,989
Replacement Cost: $17,635,248
Building Percent Good: 81
Replacement Cost Less Depreciation: $14,284,600

Building Attributes : Bldg 2 of 11	
Field	**Description**
STYLE	School/College
MODEL	Commercial
Grade	Good+
Stories:	3
Occupancy	1
Exterior Wall 1	Pre-finsh Metl

Building Photo

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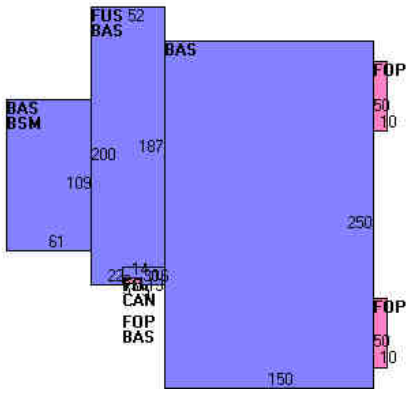
Exterior Wall 2	Stucco/Masonry
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Plastered
Interior Floor 1	Carpet
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	30
% Comn Wall	0

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	54,479	54,479
FUS	Finished Upper Story	10,010	9,510
BSM	Basement	6,649	0
CAN	Canopy	70	0
FOP	Open Porch	1,390	0
		72,598	63,989

Building 3 : Section 1

Year Built: 1982
Living Area: 77,770
Replacement Cost: $9,211,615
Building Percent Good: 80
Replacement Cost Less Depreciation: $7,369,300

Building Attributes : Bldg 3 of 11	
Field	**Description**
STYLE	Dormitory
MODEL	Commercial
Grade	Good+
Stories:	4
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt

Building Photo

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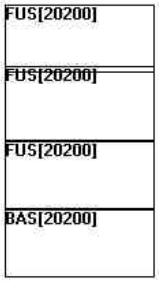
Building Layout

Interior Floor 2	Carpet
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Heat Pump
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0



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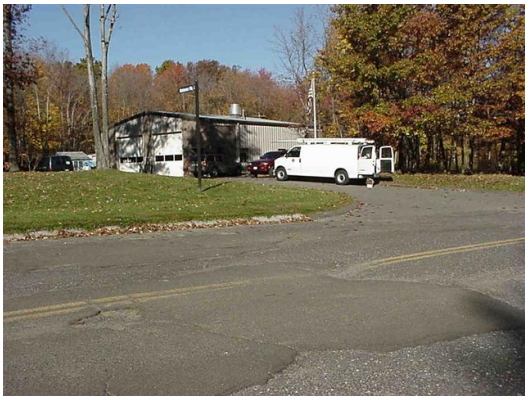
Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	60,600	57,570
BAS	First Floor	20,200	20,200
		80,800	77,770

Building 4 : Section 1

Year Built: 1998
Living Area: 2,468
Replacement Cost: $253,238
Building Percent Good: 85
Replacement Cost Less Depreciation: $215,300

Building Attributes : Bldg 4 of 11	
Field	**Description**
STYLE	Service Shop
MODEL	Ind/Comm
Grade	Good+
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Pre-finsh Metl
Roof Structure	Gable/Hip
Roof Cover	Enam Mtl Shing
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bldg Use	Commercial MDL-96

Building Photo



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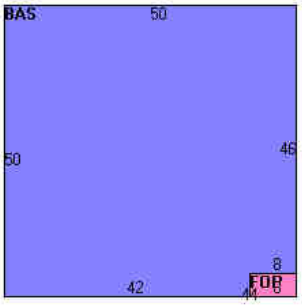
Building Layout



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Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	16
% Comn Wall	0

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,468	2,468
FOP	Open Porch	32	0
		2,500	2,468

Building 5 : Section 1

Year Built: 1999
Living Area: 176,013
Replacement Cost: $34,205,719
Building Percent Good: 188
Replacement Cost Less Depreciation: $64,306,800

Building Attributes : Bldg 5 of 11	
Field	**Description**
STYLE	Dormitory
MODEL	Commercial
Grade	Excellent+++
Stories:	6
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Heat Pump
Bldg Use	Education
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL

Building Photo

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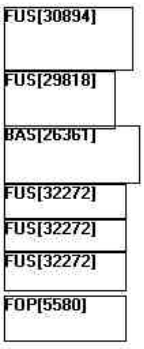
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	157,528	149,652
BAS	First Floor	26,361	26,361

Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

FOP	Open Porch	5,580	0
		189,469	176,013

Building 6 : Section 1

Year Built: 2006
Living Area: 37,045
Replacement Cost: $14,602,395
Building Percent Good: 192
Replacement Cost Less Depreciation: $28,036,600

Building Attributes : Bldg 6 of 11	
Field	**Description**
STYLE	School/College
MODEL	Commercial
Grade	Excellent+++
Stories:	3
Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	Glass/Thermo.
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	ABOVE AVERAGE
Wall Height	15
% Comn Wall	

Building Photo

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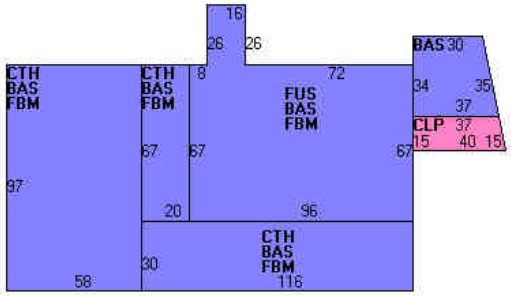
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	18,433	18,433
FBM	Basement Finished	17,294	12,106
FUS	Finished Upper Story	6,848	6,506
CLP	Loading Platform Covered	578	0
CTH	Cathedral Ceiling	10,446	0
		53,599	37,045

Building 7 : Section 1

Year Built: 2004
Living Area: 9,467
Replacement Cost: $1,867,137
Building Percent Good: 91
Replacement Cost Less Depreciation: $1,699,100

Building Attributes : Bldg 7 of 11	
Field	**Description**
STYLE	Other State
MODEL	Commercial
Grade	Average+
Stories:	2
Occupancy	1
Exterior Wall 1	Stucco/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Plastered
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	

Building Photo

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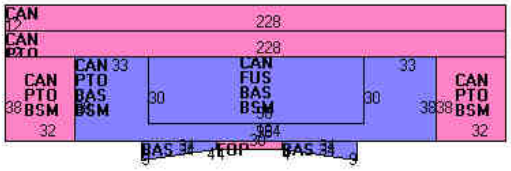
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	6,674	6,674
FUS	Finished Upper Story	2,940	2,793
BSM	Basement	8,664	0
CAN	Canopy	14,136	0
FOP	Open Porch	120	0
PTO	Patio	8,460	0
		40,994	9,467

Building 8 : Section 1

Year Built: 2003
Living Area: 2,602
Replacement Cost: $483,550
Building Percent Good: 91

Building Photo

Replacement Cost
Less Depreciation: $440,000

Building Attributes : Bldg 8 of 11	
Field	**Description**
STYLE	Apt House
MODEL	Commercial
Grade	Good+
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Plastered
Interior Floor 1	Ceram Clay Til
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	

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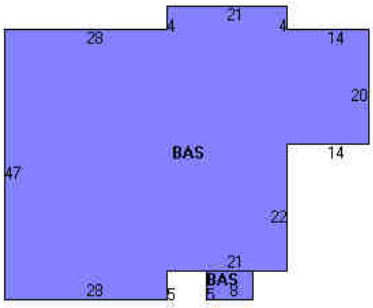
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,602	2,602
		2,602	2,602

Building 9 : Section 1

Year Built: 2004
Living Area: 140,656
Replacement Cost: $4,053,089
Building Percent Good: 91
Replacement Cost Less Depreciation: $3,688,300

Building Photo

Building Attributes : Bldg 9 of 11	
Field	**Description**
STYLE	Parking Garage
MODEL	Commercial

Grade	Average
Stories:	4
Occupancy	1
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Plastered
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	CEILING ONLY
Rooms/Prtns	LIGHT
Wall Height	10
% Comn Wall	

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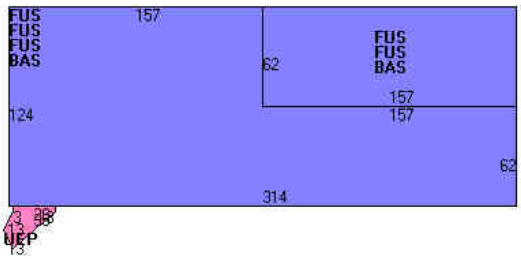
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	107,074	101,720
BAS	First Floor	38,936	38,936
UEP	Unfi. Enclosed Porch	446	0
		146,456	140,656

Building 10 : Section 1

Year Built: 2004
Living Area: 115,385
Replacement Cost: $22,963,501
Building Percent Good: 93
Replacement Cost Less Depreciation: $21,356,100

Building Attributes : Bldg 10 of 11	
Field	**Description**
STYLE	Dormitory
MODEL	Commercial
Grade	Excellent+++
Stories:	5
Occupancy	1

Building Photo

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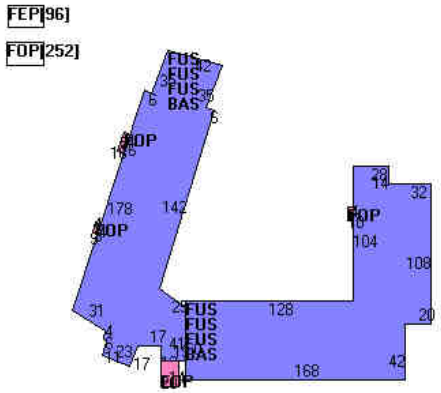
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Enam Mtl Shing
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	ABOVE AVERAGE
Wall Height	10
% Comn Wall	

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	89,910	85,415
BAS	First Floor	29,970	29,970
FEP	Fin. Enclosed Porch	96	0
FOP	Open Porch	681	0
		120,657	115,385

Building 11 : Section 1

Year Built: 2014
Living Area: 130,000
Replacement Cost: $30,253,600
Building Percent Good: 198
Replacement Cost Less Depreciation: $59,902,100

Building Attributes : Bldg 11 of 11	
Field	**Description**
STYLE	Other State
MODEL	Commercial
Grade	Excellent+++
Stories:	3
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Enam Mtl Shing
Interior Wall 1	Drywall/Sheet
Interior Wall 2	

Building Photo

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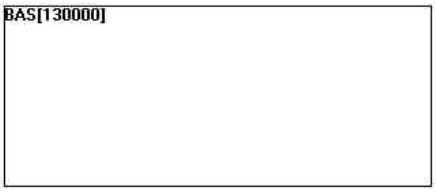
Building Layout

Interior Floor 1	Hardwood
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Education
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	ABOVE AVERAGE
Wall Height	
% Comn Wall	



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	130,000	130,000
		130,000	130,000

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
ELV1	Elevator	3 STOPS	$104,600	2
ELV1	Elevator	4 STOPS	$147,800	9
SPR1	Sprinklers-Wet	115385 S.F.	$155,600	10
SPR1	Sprinklers-Wet	130000 S.F.	$191,400	11
SPR1	Sprinklers-Wet	183889 S.F.	$233,700	5
SPR1	Sprinklers-Wet	80800 S.F.	$98,900	3
SPR1	Sprinklers-Wet	9467 S.F.	$12,900	7
ELV1	Elevator	3 STOPS	$110,900	7
ELV1	Elevator	5 STOPS	$182,700	10
ELV1	Elevator	6 STOPS	$206,600	5
ELV1	Elevator	6 STOPS	$239,400	11
SPR1	Sprinklers-Wet	68700 S.F.	$88,400	2
SPR1	Sprinklers-Wet	96100 S.F.	$104,300	1
ELV1	Elevator	5 STOPS	$147,000	1
ELV1	Elevator	5 STOPS	$182,700	10
ELV1	Elevator	6 STOPS	$206,600	5
MEZ3	Mezz w/Partitions	50000 S.F.	$997,500	11
ELV1	Elevator	6 STOPS	$206,600	5
SPR1	Sprinklers-Wet	49000 S.F.	$68,400	6
ELV1	Elevator	3 STOPS	$113,400	6
ELV1	Elevator	4 STOPS	$126,000	3

ELV1	Elevator	6 STOPS	$206,600	5
ELV1	Elevator	4 STOPS	$126,000	3
ELV1	Elevator	5 STOPS	$147,000	1
LDL1	Load Leveler	1 UNITS	$1,400	6
ELV1	Elevator	2 STOPS	$58,800	1

Land

Land Use

Use Code	943
Description	Education
Zone	RA40
Neighborhood	5000
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	273
Frontage	0
Depth	0
Assessed Value	$35,280,100
Appraised Value	$50,400,100

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving-Asphalt			450000 S.F.	$472,500	1
SHD1	Shed-Avg			120 S.F.	$1,000	4
FN1	Fence 1			1100 L.F.	$2,900	3
LT2	Light 2			2 UNITS	$700	9
FN4	Fence 4			976 L.F.	$4,100	3
LT18	Light 18			4 UNITS	$8,400	7
LT4	Lights 4			2 UNITS	$1,300	9
SPL1	Pool, Inground			3696 S.F.	$72,100	2
TEN	Tennis Court			6 UNITS	$99,000	6
FN6	Fence 6			234 L.F.	$1,200	3
LT4	Lights 4			8 UNITS	$5,200	2
SHD1	Shed-Avg			288 S.F.	$2,400	7
FN5	Fence 5			1300 L.F.	$6,100	7
LT1	Light 1			124 UNITS	$22,300	1
LT5	Light 5			2 UNITS	$1,600	2
LT2	Light 2			23 UNITS	$8,400	1
LT7	Light 7			5 UNITS	$5,300	2
LT8	Light 8			1 UNITS	$1,200	6
SHD1	Shed-Avg			160 S.F.	$1,300	7
LT12	Light 12			6 UNITS	$9,300	7
SHD1	Shed-Avg			224 S.F.	$1,900	7
SHD1	Shed-Avg			224 S.F.	$1,900	7
SHD1	Shed-Avg			266 S.F.	$2,200	7
SHD1	Shed-Avg			266 S.F.	$2,200	7
SHD2	Shed-Gd			192 S.F.	$1,800	7

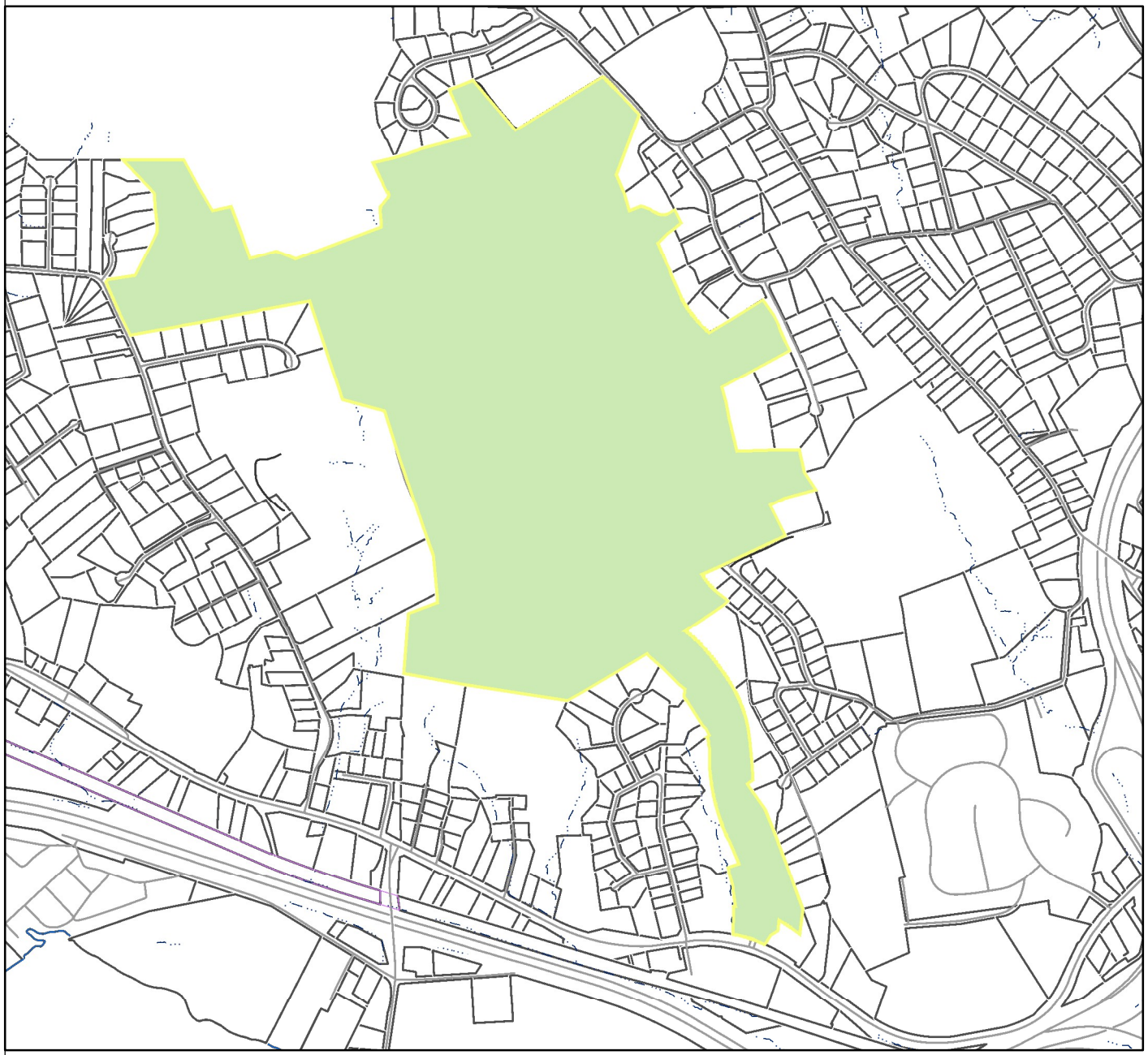
SHD2	Shed-Gd			192 S.F.	$1,800	7

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$216,541,800	$48,582,800	$265,124,600
2015	$216,541,800	$48,582,800	$265,124,600
2014	$216,541,800	$48,582,800	$265,124,600

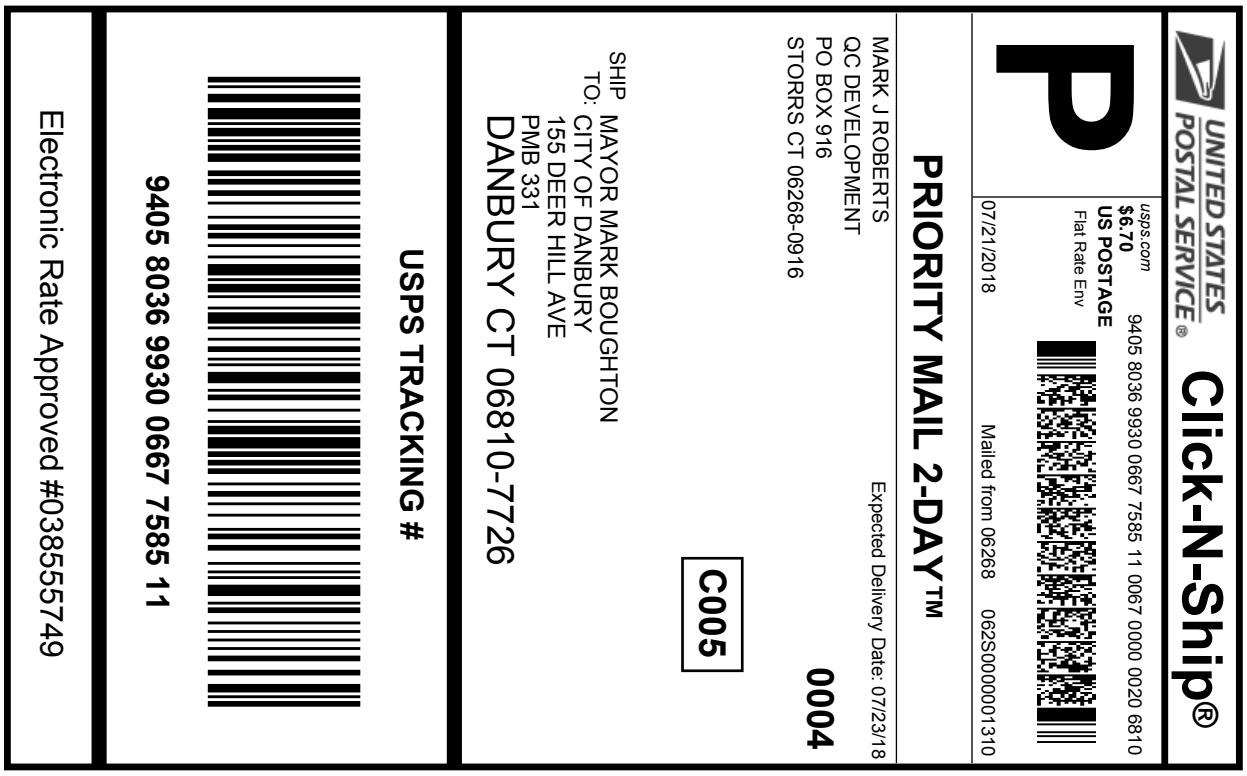
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$151,579,700	$34,008,000	$185,587,700
2015	$151,579,700	$34,008,000	$185,587,700
2014	$151,579,700	$34,008,000	$185,587,700

WCSU - 303 BOXWOOD LANE



Channel
Stream
Paved
Unpaved
Driveway (Paved)
Driveway (Unpaved)
Light Pole
Building
Foundation
House Trailer
Ruins
Deck
Bridges
Curb
Road (Paved)
Road (Unpaved)
Fence
Stone Wall
Parking (Paved)
Parking (Unpaved)
Sidewalk
Other
Parcel
Private Right of Way
Public Right of Way
Rail Right of Way
Traffic Island
Water

Not a legal survey.



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0667 7585 11

Trans. #:	439920997
Print Date:	07/20/2018
Ship Date:	07/21/2018
Expected Delivery Date:	07/23/2018
Insured Value:	$50.00

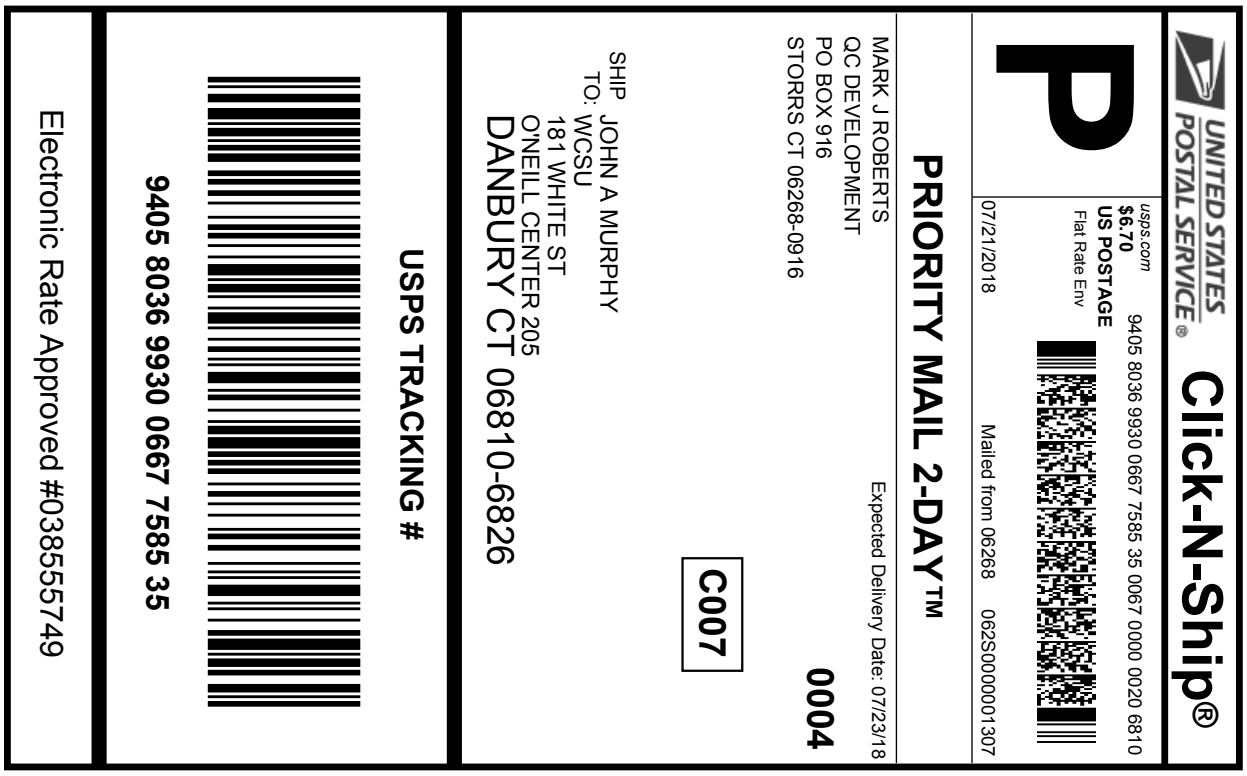
Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

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

To: MAYOR MARK BOUGHTON
CITY OF DANBURY
155 DEER HILL AVE
PMB 331
DANBURY CT 06810-7726

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

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



Cut on dotted line.

Instructions

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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0667 7585 35

Trans. #:	439920997
Print Date:	07/20/2018
Ship Date:	07/21/2018
Expected Delivery Date:	07/23/2018
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: JOHN A MURPHY
WCSU
181 WHITE ST
O'NEILL CENTER 205
DANBURY CT 06810-6826

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

Thank you for shipping with the United States Postal Service!
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