Robinson+Cole

KENNETH C. BALDWIN

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Also admitted in Massachusetts
and New York

October 20, 2021

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification**
104 Prospect Hill Road, East Windsor, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above referenced property (the "Property"). The facility consists of antennas and remote radio heads attached to a water tank and related equipment on the ground near the base of the tank. The Council, most-recently approved modifications to Cellco existing facility in June of 2019 (EM-VER-047-190403). A copy of Cellco's EM-VER-047-190403 approval is included in Attachment 1.

Cellco now intends to modify its facility further by removing six (6) existing antennas and installing three (3) Samsung MT6407-77A antennas, and three (3) CBRS antennas on the existing antenna mounting brackets on the side of the tank. Cellco also intends to install three (3) remote radio heads ("RRHs"), which will clip onto the new CBRS antennas. A set of project plans showing Cellco's proposed facility modifications and specifications for the new antennas and RRH are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to East Windsor's Chief Elected Official and Land Use Officer.

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 water tank.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, 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 installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.

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

6. According to the attached Mount & Structural Analysis Report ("MSA Report"), the existing mounting assemblies and the water tank structure itself can support Cellco's proposed modifications. A copy of the MSA Report is included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:

Jason E. Bowsza, First Selectman for the Town of East Windsor
Ruthanne Calabrese, Zoning and Wetlands Compliance Officer
Connecticut Water Company
Alex Tyurin

ATTACHMENT 1

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

June 3, 2019

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-047-190403** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 104 Prospect Hill Road, East Windsor, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Verizon shall be removed within 60 days of the date the antenna ceased to function;

5. The validity of this action shall expire one year from the date of this letter; and

6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated March 29, 2019, and additional information received May 20, 2019. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require

explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

c: The Honorable Robert L. Maynard, First Selectman, Town of East Windsor
Ruben Flores-Marzan, AICP, Director of Planning & Development, Town of East Windsor
Connecticut Water Company, Tower and Property Owner

ATTACHMENT 2

verizon

WIRELESS COMMUNICATIONS FACILITY

EAST WINDSOR 2 CT
104 PROSPECT HILL ROAD
EAST WINDSOR, CT 06088

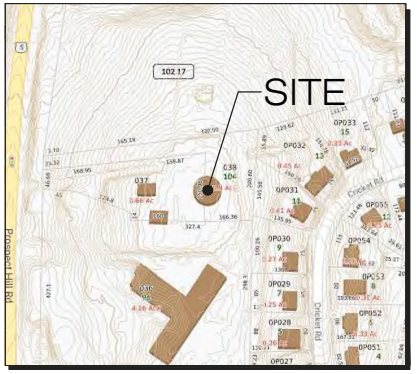
DRAWING INDEX

SITE DIRECTIONS

START: 20 ALEXANDER DRIVE
WALLINGFORD, CONNECTICUT 06492

END: 104 PROSPECT HILL ROAD
EAST WINDSOR, CT 06088

1.	HEAD SOUTH TOWARDS ALEXANDER DRIVE	279 FT
2.	SLIGHT RIGHT TOWARDS ALEXANDER DRIVE	289 FT
3.	TURN RIGHT TOWARDS ALEXANDER DRIVE	167 FT
4.	TURN RIGHT ONTO ALEXANDER DRIVE	0.3 MI
5.	TURN RIGHT ONTO BARNES INDUSTRIAL RD S.	0.1 MI
6.	TURN LEFT ONTO CT-68 E	1.6 MI
7.	CONTINUE STRAIGHT TO STAY ON CT-68 E	0.2 MI
8.	SHARP LEFT TO MERGE ONTO I-91 N TOWARD HARTFORD	0.3 MI
9.	MERGE ONTO I-91 N	21.5 MI
10.	TAKE EXIT 44 FOR US-5 S TOWARD EAST WINDSOR	0.3 MI
11.	USE LEFT 2 LANES TO TURN ONTO US-5 N (END AT 104 PROSPECT HILL RD.)	0.7 MI



LOCATION MAP
SCALE : 1" = 400'-0"

SITE INFORMATION

VZ SITE NAME: EAST WINDSOR 2 CT
VZ PROJ FUZE I.D.: 15887255
VZ LOCATION CODE: 467839
VZ PROJECT CODE: 20212246547
LOCATION: 104 PROSPECT HILL ROAD
EAST WINDSOR, CT 06088

PROJECT SCOPE: REFER TO NOTES ON DRAWING C-1 FOR SCOPE OF WORK.

MAP-BLOCK-LOT: 102-17-038

ZONING DISTRICT: B-1 ((BUSINESS 1))

LATITUDE: 41° 55' 34.2084" N (41.926169° N)

LONGITUDE: 72° 36' 16.29" W (72.604525° W)

SITE COORDINATES AND GROUND ELEVATION OBTAINED FROM GOOGLE EARTH.

GROUND ELEVATION: 204'± AMSL

PROPERTY OWNER: CONNECTICUT WATER COMPANY
93 WEST MAIN STREET
CLINTON, CT 06413

APPLICANT: CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

LEGAL/REGULATORY COUNSEL: ROBINSON & COLE, LLP
KENNETH C. BALDWIN, ESQ.
280 TRUMBULL STREET
HARTFORD, CT 06103

ENGINEER CONTACT: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385
(860) 663-1697

VERIZON SMART TOOL PROJECT #: ---------

Cellco Partnership d/b/a
verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	08/25/21	FOR REVIEW: JRM
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3	10/13/21	FOR FILING: JRM
4		
5		
6		

STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: CONNECTICUT WATER COMPANY
ADDRESS: 93 WEST MAIN STREET CLINTON, CT 06413

EAST WINDSOR 2 CT

SITE ADDRESS: 104 PROSPECT HILL ROAD EAST WINDSOR, CT 06088

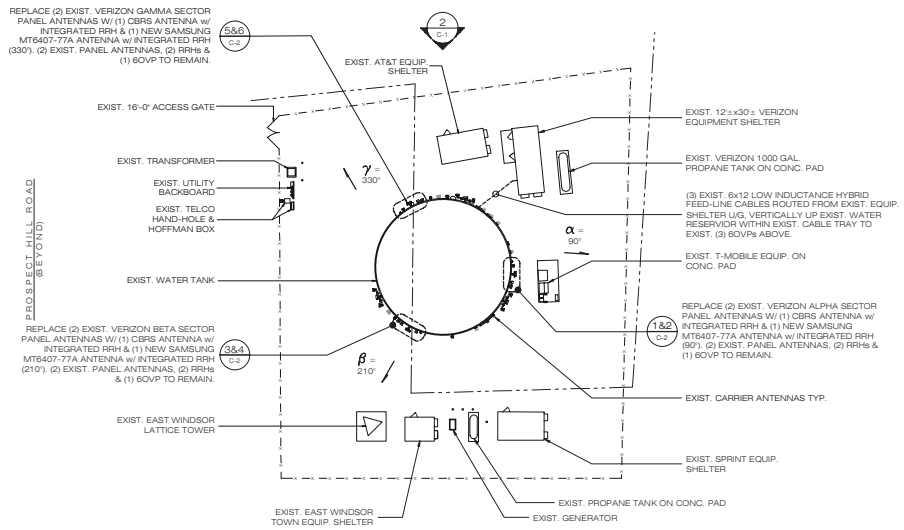
APT FILING NUMBER: CT141_12550

DRAWN BY: DRA
DATE: 08/25/21 **CHECKED BY:** JRM

VZW PROJECT CODE: 20212246547
VZW LOCATION CODE: 467839
VZW FUZE ID: 15887255

SHEET TITLE:
TITLE SHEET

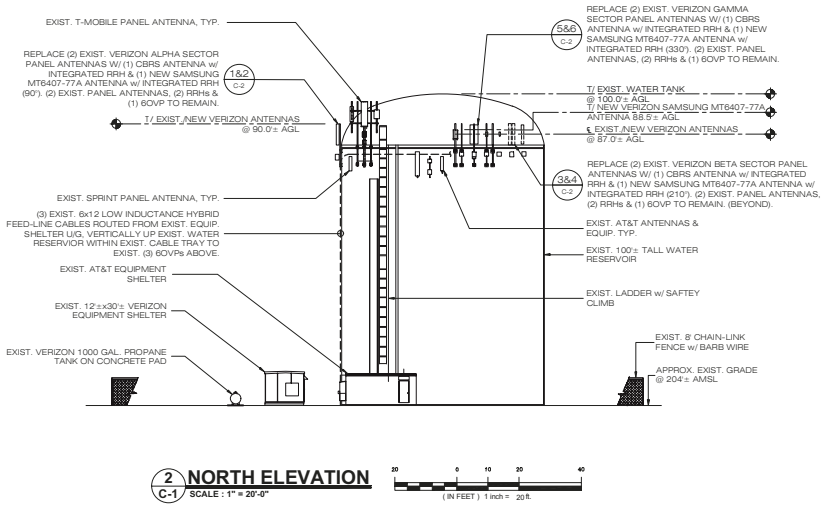
SHEET NUMBER:
T-1



1 C-1 COMPOUND PLAN

SCALE : 1" = 10'-0"

10' SCALE: 1 INCH= 10'-0"



2 C-1 NORTH ELEVATION

SCALE : 1" = 20'-0"

(IN FEET) 1 inch = 20 ft.

NOTES:

1. REFER TO STRUCTURAL & MOUNT ANALYSIS REPORT PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. MARKED REV3 DATED 10/13/21 AVAILABLE UNDER SEPARATE COVER.
2. BASE MAPPING OBTAINED FROM FIELD MEASUREMENTS CONDUCTED BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. ON 01/11/19.
3. PROJECT SCOPE INCLUDES THE FOLLOWING:
   - REPLACEMENT OF (6) EXIST. PANEL ANTENNAS w/ (3) NEW SAMSUNG CBRS ANTENNAS w/ INTEGRATED RRHs & (3) NEW SAMSUNG MT6407-77A ANTENNAS w/ INTEGRATED RRHs.
   - REMOVAL OF (12) UNUSED VERIZON COAX CABLE FEED-LINES.
4. ALL EXPOSED STEEL AND HARDWARE TO BE HOT DIP GALV. (HDG). PAINT TO MATCH EXIST. (WHERE APPLICABLE)
5. CAP & WEATHERPROOF ALL UN-USED CABLE ENTRY PORTS (WHERE APPLICABLE).
6. MOUNT & GROUND ALL NEW EQUIPMENT IN ACCORDANCE WITH NEC (NFPA-70), NESC AND MANUFACTURERS SPECIFICATION.
7. SECURE ALL NEW ANTENNA CABLES PER MANUFACTURER RECOMMENDATIONS.
8. BOND NEW ANTENNA MOUNTING PIPES TO ANTENNA SECTOR GROUND BAR w/ # 2 AWG, BCW, (WHERE APPLICABLE).
9. CONTRACTOR SHALL INSTALL NEW SIDE-BY-SIDE & DUAL-MOUNT BRACKETS PER ANTENNA MOUNT MANUFACTURER RECOMMENDATIONS, INCLUDING VERIFICATION OF MINIMUM PIPE MAST DIAMETER REQUIRED TO INSTALL NEW MOUNT BRACKETS. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD SHOULD EXIST. PIPE MASTS REQUIRE REPLACEMENT TO SUPPORT THE NEW MOUNT BRACKETS.
10. ANTENNA CONFIGURATIONS SHOWN HEREIN ARE FRONT ELEVATIONS (UNLESS NOTED OTHERWISE).
11. ANTENNA SPACING DIMENSIONS ARE TO THE CENTER OF THE EXIST. ANTENNA AND PROP. ANTENNA FACE.
12. REFER TO THE FINAL RFDS PROVIDED BY VERIZON FOR THE LATEST INFORMATION REGARDING EQUIPMENT MODELS, REQUIRED CABLING & DOWN-TILT INFORMATION.
11. PAINT ALL LSUB6 ANTENNAS TO MATCH EXISTING STRUCTURE (WHERE APPLICABLE). COORDINATE W/ LSUB6 MANUFACTURER INSTALLATION MANUAL REQUIREMENTS, VERIZON CONSTRUCTION MANAGER & OWNER.
13. PAINT ALL NEW NON LSUB6 ANTENNAS & APPURTENANCES TO MATCH EXIST. STRUCTURE (WHERE APPLICABLE) COORDINATE W/ VERIZON CONSTRUCTION MANAGER & BUILDING OWNER.

Cellco Partnership d/b/a
verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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6		

STATE OF CONNECTICUT MICHAEL TRODDEN 33313 LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: CONNECTICUT WATER COMPANY
ADDRESS: 93 WEST MAIN STREET CLINTON, CT 06413

EAST WINDSOR 2 CT

SITE ADDRESS: 104 PROSPECT HILL ROAD EAST WINDSOR, CT 06088

APT FILING NUMBER: CT141_12550

DRAWN BY: DRA
DATE: 08/25/21 CHECKED BY: JRM

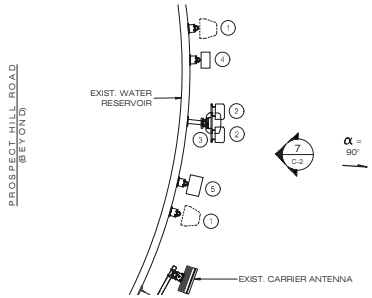
VZW PROJECT CODE: 20212246547
VZW LOCATION CODE: 467839
VZW FUZE ID: 15887255

SHEET TITLE:

COMPOUND PLAN, NORTH ELEVATION & NOTES

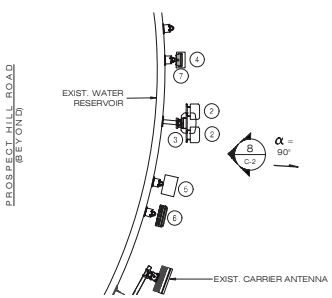
SHEET NUMBER:

C-1



1 C-2 EXIST. EQUIPMENT CONFIGURATION PLAN (ALPHA)

SCALE : ¼" = 1'-0"



2 C-2 NEW EQUIPMENT CONFIGURATION PLAN (ALPHA)

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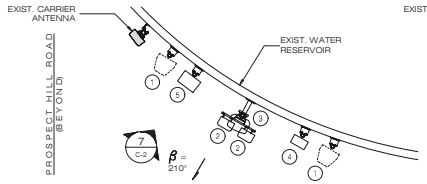
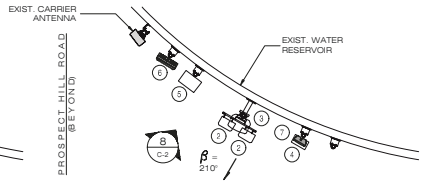


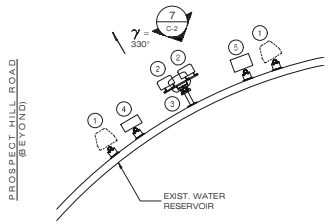
3 C-2 EXIST. EQUIPMENT CONFIGURATION PLAN (BETA)

SCALE : ½" = 1'-0"

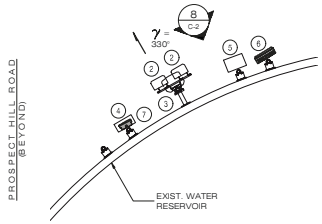


4 C-2 NEW EQUIPMENT CONFIGURATION PLAN (BETA)

SCALE : ¼" = 1'-0"

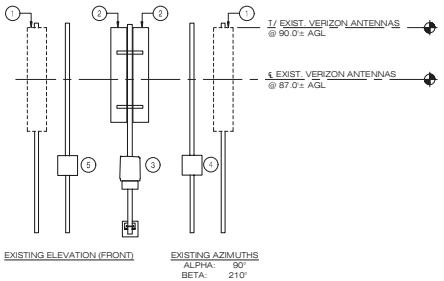


5 C-2 EXIST. EQUIPMENT CONFIGURATION PLAN (GAMMA)



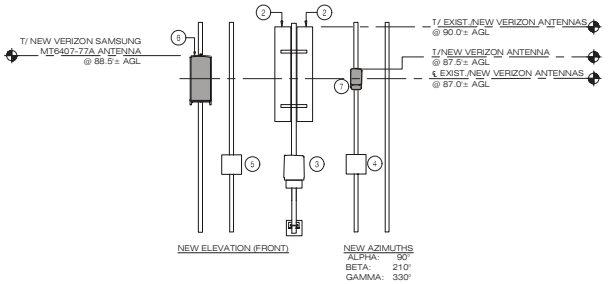
6 C-2 NEW EQUIPMENT CONFIGURATION PLAN (GAMMA)

SCALE : ¼" = 1'-0"



7 C-2 EQUIP. MOUNTING CONFIG. - TYPICAL (EXIST.)

SCALE : ¼" = 1'-0"



8 C-2 EQUIP. MOUNTING CONFIG. - TYPICAL (NEW)

SCALE : ¼" = 1'-0"

GENERAL ABBREVIATION LIST:

ABP	ABOVE BASE PLATE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
AWS	ADVANCED WIRELESS SERVICE
HDG	HOT DIP GALVANIZED
OVP	OVER VOLTAGE PROTECTION
RRH	REMOTE RADIO HEAD
V.I.F.	VERIFY IN FIELD
W.P.	WORK POINT
A.F.R.	ABOVE FINISH ROOF

SCOPE OF WORK (ALL) SECTORS

1. EXIST. ANTENNA (TO BE REPLACED) MODEL: AMPHENOL LPA-80063-6CF
2. EXIST. ANTENNA (TO REMAIN) MODEL: ANDREW SBNHH-1D65B
3. EXIST. 6 OVP (TO BE REMAIN) MODEL: RAYCAP RHSDC-3315-PF-48 (V.I.F.)
4. EXIST. DUAL BAND RRH (TO REMAIN) MODEL: SAMSUNG B13/B5 RRH-BR04C (RFV01U-D2A)
5. EXIST. DUAL BAND RRH (TO REMAIN) MODEL: SAMSUNG B66/B2A RRH-BR049 (RFV01U-D1A)
6. NEW ANTENNA MODEL: SAMSUNG MT6407-77A w/ INTEGRATED RRH
7. NEW CBRS ANTENNA w/ INTEGRATED RRH MODEL: SAMSUNG XXDWMM-12.5-65-8T-CBRS MODEL: SAMSUNG RT4401-48A

Cellco Partnership d/b/a
verizon
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DESIGN PROFESSIONALS OF RECORD

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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
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VZW PROJECT CODE: 20212246547
VZW LOCATION CODE: 467839
VZW FUZE ID: 15887255

SHEET TITLE:
EXIST. & NEW EQUIPMENT MOUNTING PLANS & ELEVATIONS

SHEET NUMBER:
C-2

EQUIPMENT DATA

EQUIPMENT SPECIFICATIONS

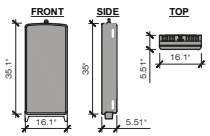
SECTOR	ANTENNA MAKE/MODEL	QTY	AZIMUTH	EQUIPMENT STATUS	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)
ALPHA	SAMSUNG XXDWMM-12.5-65-8T-CBRS	1	90°	NEW	12.3	8.7	1.4	4.4 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	90°	ETR	72.9	11.9	7.1	40.6 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	90°	ETR	72.9	11.9	7.1	40.6 (2)
	SAMSUNG MT6407-77A w INTEGRATED RRH	1	90°	NEW	35.1 (5)	16.1 (5)	5.51 (5)	87.1 (2)(5)
BETA	SAMSUNG XXDWMM-12.5-65-8T-CBRS	1	210°	NEW	12.3	8.7	1.4	4.4 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	210°	ETR	72.9	11.9	7.1	40.6 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	210°	ETR	72.9	11.9	7.1	40.6 (2)
	SAMSUNG MT6407-77A w INTEGRATED RRH	1	210°	NEW	35.1 (5)	16.1 (5)	5.51 (5)	87.1 (2)(5)
GAMMA	SAMSUNG XXDWMM-12.5-65-8T-CBRS	1	330°	NEW	12.3	8.7	1.4	4.4 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	330°	ETR	72.9	11.9	7.1	40.6 (2)
	700/850/1900/2100: ANDREW SBNHH-1D65B	1	330°	ETR	72.9	11.9	7.1	40.6 (2)
	SAMSUNG MT6407-77A w INTEGRATED RRH	1	330°	NEW	35.1 (5)	16.1 (5)	5.51 (5)	87.1 (2)(5)
	APPURTENANCE MAKE/MODEL							
	SAMSUNG B2/B66A RRH-BR049 (RFVO1U-D1A)	3	-	ETR	14.9	14.9	10.04	97.5
	SAMSUNG B5/B13 RRH-BR04C (RFV01U-D2A)	3	-	ETR	14.9	14.9	8.14	82.0
	RAYCAP RHSDC-3315-PF-48	3	-	ETR	19.8	15.73	10.25	32.0

(1) 'ETR' DENOTES EXIST. TO REMAIN, 'ERL' DENOTES EXIST. TO BE RELOCATED
(2) WEIGHT WITHOUT MOUNTING BRACKET.
(3) REFER TO FINAL RFDS PROVIDED BY VERIZON.
(4) EQUIPMENT CONFIGURATION INDICATED ABOVE VIEWED FROM BEHIND.
(5) NOT TO EXCEED

BILL OF MATERIALS

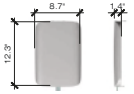
	EQUIPMENT DESCRIPTION	QUANTITY	LENGTH	COMMENTS
1	LSUB6 ANTENNA w/ INTEGRATED RRH	3		SAMSUNG MT6407-77A
2	ANTENNA w/ INTEGRATED RRH	3		SAMSUNG XXDWMM-12.5-65-8T-CBRS w/ RT4401-48A RRH
3	ANTENNA LINK CABLES	6	15 M	ROUTE FROM UPPER OVP TO ANTENNAS
4	ANTENNA POWER CABLES	3	15 M	PROPRIETARY POWER CABLE FROM UPPER OVP TO ANTENNAS
5	10 AWG x2 DC POWER CABLE	6	25 FT	PROPRIETARY POWER CABLE FROM UPPER OVP TO ANTENNA/RRH
6	CPRI CABLE	3	25 FT	ROUTE FROM UPPER OVP TO RRH

NOTES:
1. INFORMATION SHOWN HEREON IS FOR USE BY VERIZON EQUIPMENT OPERATIONS.
2. REFER TO FINAL RFDS PROVIDED BY VERIZON.
3. * DENOTES EQUIPMENT DESIGNATED "FOR LEASING ONLY" (WHERE APPLICABLE)
4. INSTALL ALARM BOARDS AT ALL OVPs WHERE REQUIRED. COORDINATE w/ VERIZON EQUIPMENT ENGINEERING.
5. INSTALL UP-CONVERTER(S) LOCATED AT BASE OVPs WHERE REQUIRED. COORDINATE w/ VERIZON EQUIPMENT ENGINEERING AS NECESSARY.
6. COORDINATE ANTENNA CABLING REQUIREMENTS WITH VERIZON ENGINEERING.
7. CONTRACTOR SHALL INSTALL NEW SIDE-BY-SIDE & DUAL-MOUNT BRACKETS PER ANTENNA MOUNT MANUFACTURER RECOMMENDATIONS, INCLUDING VERIFICATION OF MINIMUM PIPE MAST DIAMETER REQUIRED TO INSTALL NEW MOUNT BRACKETS. UNLESS NOTED OTHER WISE, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD SHOULD EXIST. PIPE MASTS REQUIRE REPLACEMENT TO SUPPORT THE NEW MOUNT BRACKETS.



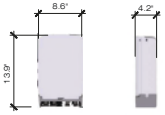
SAMSUNG MT6407-77A ANTENNA
HxWxD=35.1"x16.1"x5.51"
WT=87.1 Lbs
(NOT TO EXCEED)

2 B-1 NEW ANTENNA DETAIL
SCALE : ½" = 1'-0"



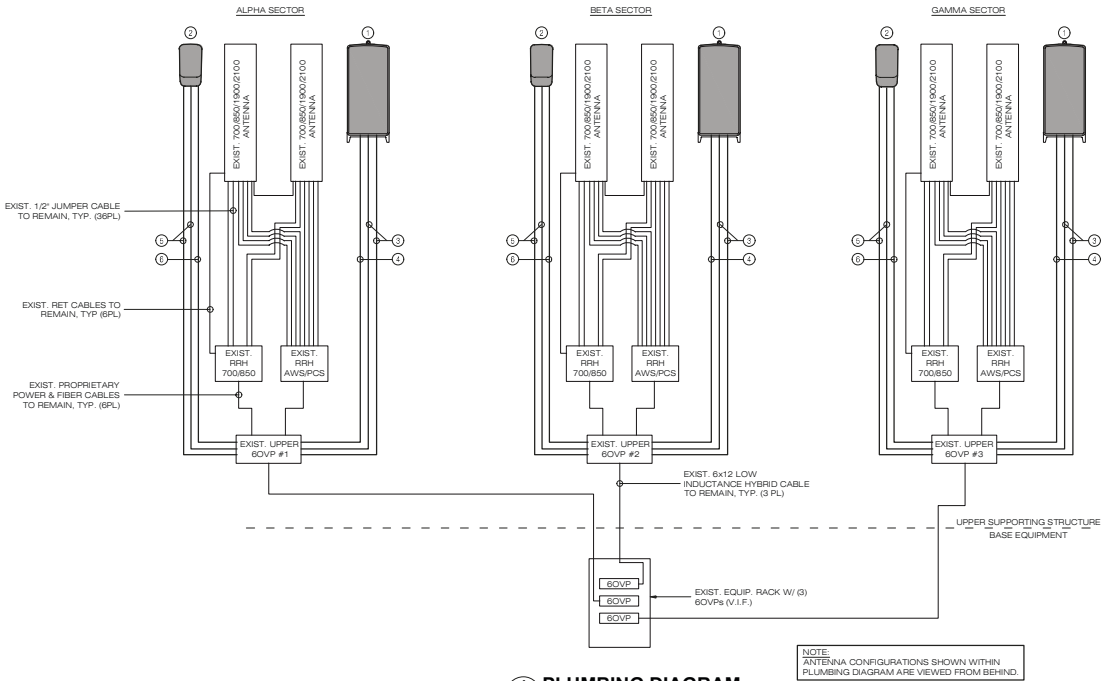
SAMSUNG XXDWMM-12.5-65-8T-CBRS
HxWxD=12.3"x8.7"x1.4" (4.5 Lbs)

3 B-1 CBRS ANTENNA
SCALE: 1" = 1'-0"



SAMSUNG CBRS RT4401-48A RRH
HxWxD=13.91"x8.55"x4.15" (18.64 lbs)

4 B-1 CBRS RRH
SCALE: 1" = 1'-0"



1 B-1 PLUMBING DIAGRAM
SCALE : ½" = 1'-0"

Cellco Partnership d/b/a
verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	08/25/21	FOR REVIEW: JRM
1	09/09/21	FOR FILING: JRM
2	09/24/21	FOR FILING: JRM
3	10/13/21	FOR FILING: JRM
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: CONNECTICUT WATER COMPANY
ADDRESS: 93 WEST MAIN STREET CLINTON, CT 06413

EAST WINDSOR 2 CT

SITE ADDRESS: 104 PROSPECT HILL ROAD EAST WINDSOR, CT 06088

APT FILING NUMBER: CT141_12550

DRAWN BY: DRA
DATE: 08/25/21 CHECKED BY: JRM

VZW PROJECT CODE: 20212246547
VZW LOCATION CODE: 467839
VZW FUZE ID: 15887255

SHEET TITLE:
RF BILL OF MATERIALS

SHEET NUMBER:
B-1

DESIGN BASIS:

GOVERNING CODES/DESIGN STANDARDS:

2015 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE 2018 CONNECTICUT STATE BUILDING CODE
ASCE 7-10
ANSI/AWWA - WELDED CARBON STEEL TANKS FOR WATER STORAGE

DESIGN CRITERIA:

STRUCTURE CLASS :	III	(AWWA D100)
RISK CATEGORY:	III	(IBC 2015 TABLE 1604.5)

WIND LOADS:

ULTIMATE BASIC WIND SPEED, V_{ULT}: (3-SECOND GUST)	135 MPH	(2018 CSBC APPENDIX N)
NOMINAL BASIC WIND SPEED, V_{3S}: (3-SECOND GUST)	105 MPH	(2018 CSBC APPENDIX N)
EXPOSURE CATEGORY	C	(2015 IBC SEC. 1609.4.3)

LIVE LOAD

ROOF LIVE LOAD, (LLr)	15 PSF	(AWWA D100 SEC. 3.13.2)

SNOW LOAD

GROUND SNOW LOAD (P_g) =	30 PSF	(2018 CSBC APPENDIX N)
ROOF SNOW LOAD (P_f) =	25 PSF	(MIN. PER AWWA D100 SEC. 3.13.1

SEISMIC LOAD:

REFER TO SECTION 1613 OF THE 2015 IBC/2018 CONNECTICUT STATE BUILDING CODE FOR SEISMIC CLASSIFICATION AND LOADING DETERMINATION.

01 GENERAL:

ABBREVIATIONS USED IN THESE SPECIFICATIONS INCLUDE THE FOLLOWING:

ACI	AMERICAN CONCRETE INSTITUTE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AWS	AMERICAN WELDING SOCIETY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN STANDARDS AND TESTING METHODS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
ICC-ES	INTERNATIONAL CODE COUNCIL EVALUATION SERVICE
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
UL	UNDERWIRTERS LABORATORIES
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

EVERY INDIVIDUAL TRADE, DISCIPLINE, AND CONTRACTOR SHALL INCLUDE THESE GENERAL SPECIFICATIONS.

THE ENGINEER IS NOT RESPONSIBLE FOR NOR A GUARANTOR OF THE INSTALLING CONTRACTORS WORK, ADEQUACY OF ANY SITE COMPONENT, SUPERVISION OF ANY WORK, AND SAFETY IN, ON, OR ABOUT THE WORK SITE.

ANY REFERENCE HEREIN TO AN OR EQUAL ITEM, THAT EQUAL ITEM SHALL BE PRE-APPROVED BY THE CONSTRUCTION MANAGER BEFORE INSTALLATION

ALL TRADES SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES AND OTHER WORK AND CONDITIONS AS APPROPRIATE OR REQUIRED TO AVOID CONFLICTS. RESOLVE AND COORDINATE ALL CONFLICTS WITH ALL AFFECTED WORK AND SITE OPERATIONS. COORDINATION WITH THE SITE SHALL BE WITH THE OWNER, OR OWNER'S SPECIFIED REPRESENTATIVE, FOR EVERYTHING RELATED TO THE INSTALLATION OF THIS PROJECT.

ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE EDITIONS OF ALL APPLICABLE CODES AND SHALL BE ACCEPTABLE TO ALL AUTHORITIES HAVING JURISDICTION (AHJ). WHERE A CONFLICT EXISTS BETWEEN CODES, PLANS, SPECIFICATIONS, AND/OR AHJ, THE MORE STRINGENT AUTHORITY SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLANS AND SPECIFICATIONS, PLAN SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLAN SHEETS, CONSTRUCTION MANAGER SHALL BE CONSULTED PRIOR TO COMMENCING ANY WORK.

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE AND USABLE SYSTEM THROUGHOUT AND AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN AND/OR OTHERWISE REQUIRED.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, INSTALLATIONS, AND EQUIPMENT IN THE FIELD PRIOR TO BID, FABRICATION, AND INSTALLATION OF ANY WORK.

CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. THE ENGINEER SHALL BE NOTIFIED FOR INSPECTIONS PRIOR TO CLOSING PENETRATIONS AND OF ANY CONDITIONS WHICH PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

CONTRACTOR SHALL VISIT THE SITE TO MANAGE AND GAIN APPROVAL FOR ALL TENANT DISRUPTIONS, POWER OUTAGES, WORK SCHEDULES, DEFINITION OF WORK AREA AND WORK STORAGE, PROPER BUILDING/SITE ACCESS, NOISE AND CLEANLINESS REQUIREMENTS WITH THE BUILDING/SITE MANAGEMENT PRIOR TO ALL WORK. ANY DISRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE IMPLEMENTED ONLY UPON WRITTEN APPROVAL OF THE OWNER.

THE CONTRACTOR SHALL SAFEGUARD AGAINST CREATING ANY HAZARD AFFECTING TENANT EGRESS OR COMPROMISING SITE SECURITY MEASURES.

PRIOR TO ALL BELOW-GRADE WORK AND ANY SURFACE WORK IN A NEW AREA FOR STRUCTURES OR VEHICLES, CONTRACTOR SHALL ENGAGE A MARKOUT SERVICE TO IDENTIFY ANY UNDERGROUND STRUCTURES, CONDUITS, AND PIPELINES IN THE AREA. ALL EXISTING SEWER, WATER, GAS, ELECTRIC, FIBER OPTIC, AND OTHER UNDERGROUND UTILITIES IDENTIFIED OR ENCOUNTERED, SHALL BE PROTECTED AT ALL TIMES. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN DIGGING OR EXCAVATING IN ANY MANNER AROUND OR NEAR SUCH UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIRS, REPLACEMENT, AND ALL DAMAGES DUE TO DAMAGE OF UTILITIES BY HIS OPERATIONS.

ALL EXISTING AND NEW EQUIPMENT AND MATERIAL LOCATIONS, ROUTING, ORIENTATION, MOUNTING, SPECIFICATIONS AND GENERAL INSTALLED CHARACTERISTICS SHALL BE CONSIDERED DIAGRAMMATIC ON THE PLANS. EXACT CONDITIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO ANY INSTALLATION. ANY DIFFERENCES THAT MAY CAUSE SCHEDULE, COST, OR QUALITY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER OR ENGINEER PRIOR TO ANY WORK.

ALL REFERENCES HEREIN TO VERIFICATION OF ANY CONDITION OF SITE, FIELD, PLANS, OR SPECIFICATIONS PRIOR TO ANY WORK SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. ANY AND ALL ADDITIONS, MODIFICATIONS, CHANGES, REPAIR, OR DEMOLITION AS A RESULT OF FAILURE TO BRING ANY EXISTING CONDITION PROPERLY TO THE ATTENTION OF THE OWNER OR ENGINEER SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR WITHOUT DELAY, COST, OR CHANGES IN QUALITY.

ALL NOTES THIS SHEET SHALL APPLY UNLESS SPECIFICALLY NOTED OTHERWISE ON THE INCLUDED DRAWINGS OR IN SEPARATE PROJECT SPECIFICATIONS AS APPLICABLE. ALL SPECIFICATIONS SHALL BE CONSIDERED REQUIRED UNLESS APPROVED EQUAL BY THE OWNER, CONSTRUCTION MANAGER, OR ENGINEER AS APPLICABLE.

THE WORDS "PROVIDE" OR "INSTALL" SHALL MEAN FURNISH AND INSTALL.

CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF HIS WORK. ANY PATCHING SHALL MATCH EXISTING SURROUNDING AREA IN ALL RESPECTS. ALL REMOVED MATERIAL SHALL BE REMOVED FROM THE PREMISES DAILY IN AN APPROVED SAFE MANNER.

ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE SITE PROMPTLY WHEN DEEMED TO BE SURPLUS.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF HIS WORK AND NEWLY INSTALLED OR EXISTING WORK, INCLUDING PROTECTION OF THE SITE, ALL STRUCTURES, AND ALL OCCUPANTS. FURNISH, INSTALL, MAINTAIN, AND REMOVE AS APPROPRIATE, ALL APPROPRIATE BARRIERS, SAFETY GUARDS, SIGNAGE, AND SECURITY AS REQUIRED.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR RESPECTIVE FEES, PERMITS, INSPECTIONS, TESTING, CERTIFICATES, AND ALL MANAGEMENT OF SAME REQUIRED FOR COMPLETION OF AND LEGAL OCCUPANCY OF THE FINISHED PROJECT.

ALL CONTRACTORS SHALL PROVIDE ALL NECESSARY TOOLS, FIXTURES, SERVICES, MATERIALS, JOB AIDS, AND PERSONNEL REQUIRED FOR THE EXECUTION OF THEIR WORK.

EACH CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP BY THEM TO BE FREE OF DEFECTS AND MAINTAINED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE INSTALLATION BY THE OWNER AND ENGINEER.

ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS IN THE TRADE HAVING JURISDICTION.

ANY DEVIATION, MODIFICATION, ADDITION, OR CHANGE IN DESIGN SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE OWNER OR ENGINEER.

ALL CONTRACTORS SHALL SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION, AND SHALL NOT PROCEED UNTIL ENGINEER APPROVAL IN WRITING IS RETURNED. EACH CONTRACTOR SHALL MAINTAIN ON JOB SITE A COMPLETE SET OF SHOP DRAWINGS WITH ANY DEVIATIONS FROM THE ORIGINAL DESIGN SHALL BE NOTED.

ALL MATERIALS AND EQUIPMENT SHALL BE NEW, WITHOUT BLEMISH OR DEFECT, AND SUITABLE AND LISTED FOR THE INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS OR SPECIFICATIONS. ALL ITEMS OF EQUIPMENT OR MATERIAL THAT ARE OF ONE GENERIC TYPE SHALL BE ONE MANUFACTURER THROUGHOUT.

ALL MATERIALS, EQUIPMENT, TOOLS, AND ITEMS UNDER THE CONTRACTOR'S RESPONSIBILITY ON THE JOBSITE SHALL BE ADEQUATELY SECURED, MAINTAINED, AND PROTECTED, SO AS NOT TO BECOME DAMAGED OR CREATE ANY HAZARD TO PERSONNEL OR PROPERTY.

THE CONTRACTORS HOURS OF WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES AND BE APPROVED BY THE OWNER.

CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR ALL OF HIS CREW AND INSURE THAT EVERY CREW MEMBER FOLLOWS SAVE WORK PRACTICES. SAFETY TRAINING SHALL INCLUDE, BUT NOT BE LIMITED TO, FALL PROTECTION, CONFINED SPACE ENTRY, ELECTRICAL SAFETY, AND TRENCHING/EXCAVATION SAFETY WHERE SUCH WORK IS EXECUTED OR ENCOUNTERED.

ALL TEMPORARY WORK REQUIRED OR SPECIFIED AS A PART OF THIS WORK, SHALL MEET ALL OF THE SAME REQUIREMENTS AS PERMANENT INSTALLATIONS, SHALL MEET ALL APPLICABLE CODE REQUIREMENTS, AND SHALL BE COMPLETELY REMOVED AFTER ITS PURPOSES HAVE BEEN SERVED.

ANY EXISTING UTILITY, SERVICE, STRUCTURE, EQUIPMENT, OR FIXTURE OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER.

IF ASBESTOS IS ENCOUNTERED DURING WORK EXECUTION, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER AND CEASE ALL ACTIVITIES IN AFFECTED AREAS UNTIL NOTIFIED BY THE CONSTRUCTION TO RESUME OPERATIONS.

EXIST. ELECTRICAL AND MECHANICAL FIXTURES, PIPING, WIRING AND EQUIPMENT OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER. TEMPORARY SERVICE INTERRUPTIONS MUST BE COORDINATED WITH OWNER.

05 STEEL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

MATERIALS:

WIDE FLANGE	ASTM A992, GR 50
TUBING	ASTM A500, GR B
PIPE	ASTM A53, GR B
BOLTS	ASTM A325
GRATING	TYPE GW-2 (1-1/4"x3/16" BARS)
EXISTING METALS	ASTM A36

PROVIDE CERTIFICATION THAT WELDERS TO BE USED IN WORK ARE LICENSED AND HAVE SATISFACTORILY PASSED AWS QUALIFICATION TEST UNDER THE PROVISIONS OF APPENDIX D, PARTS II AND III OF THE AWS CODE FOR WELDING IN BUILDING CONSTRUCTION.

ALL BUILDING CONNECTION POINTS TO BE CENTERED ON EXISTING STRUCTURAL BEARING POINTS AND THE LOCATIONS ARE TO BE VERIFIED IN FIELD PRIOR TO THE FABRICATION OF STEEL.

DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF AISC SPECIFICATION FOR *"THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS"*.

NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIAMETER GALVANIZED ASTM A 307 BOLTS UNLESS OTHERWISE NOTED.

ALL STEEL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIPPED GALVANIZED) COATINGS" ON IRON AND STEEL PRODUCTS WITH A COATING WEIGHT OF 2 OZ/SF.

ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE EXPOSED TO WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE."

DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY TOUCHING UP ALL DAMAGED GALVANIZED STEEL WITH COLD ZINC, "GALVANOX", "DRY GALV", OR "ZINC IT", IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCH UP DAMAGED NON-GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.

THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW. FIELD CUTTING OF STRUCTURAL STEEL IS NOT PERMITTED EXCEPT WITH THE PRIOR APPROVAL OF THE ENGINEER.

CONTRACTOR TO REMOVE AND RE-INSTALL ALL FIRE PROOFING AS REQUIRED DURING CONSTRUCTION.

THE STEEL STRUCTURE SHALL BE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER COMPLETION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION.

ALL STEEL ELEMENTS SHALL BE INSTALLED PLUMB AND LEVEL.

TOWER MANUFACTURER'S DESIGNS SHALL PREVAIL FOR TOWER.

CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC *"MANUAL OF STEEL CONSTRUCTION"*. CONNECTIONS SHALL BE PROVIDED TO CONFORM TO THE REQUIREMENTS OF TYPE 2 CONSTRUCTION.

STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE MINIMUM 3/4" DIAMETER AND EACH CONNECTION SHALL HAVE MINIMUM TWO BOLTS. LOCK WASHERS ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES. IF TENSION CONTROL BOLTS ARE USED, CONNECTIONS SHALL BE DESIGNED FOR SLIP CRITICAL BOLT ALLOWABLE LOAD VALUES.

DESIGN CONNECTIONS AT BEAM ENDS FOR 10 KIPS (MIN).

ALL U-BOLTED CONNECTIONS SHALL BE COMPLETED WITH DOUBLE NUTS OR A LOCK WASHER.

CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS *"STANDARD QUALIFICATION PROCEDURES"*. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE LARGER OF 1/4" FILLET OR MINIMUM SIZE PER TABLE J2.4 IN THE AISC *"MANUAL OF STEEL CONSTRUCTION"*. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED. SEE NOTE REGARDING DAMAGED GALVANIZED SURFACES.

ALL ARC AND GAS WELDING SHALL BE DONE BY A LICENSED AND CERTIFIED WELDER IN ACCORDANCE WITH AWS.

SEAL ALL PENETRATIONS AND SEAMS BETWEEN MASONRY AND STEEL WITH DOW CORNING 790 SILICONE BUILDING SEALANT OR EQUAL.

09 PAINT NOTES:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

PAINTING SCHEDULE:

1. FERROUS METAL
   a. CLEAN SURFACE IN CONFORMANCE TO SSPC-SP-3 STANDARDS, POWER TOOL CLEANING.
   b. PRIME BY APPLYING ONE SPOT COAT OF TENEMEC SERIES 1 PRIMER @ 2.5-3.0 MILS DRY.
   c. FINISH BY APPLYING TWO SPOT COATS OF TENEMEC SERIES 1029 (COLOR) AT 2.5 MILS PER COAT.
   d. COLOR TO MATCH EXISTING BUILDING COLOR. OWNER TO APPROVE COLOR MATCH.
2. ZINC COATED METAL
   a. PRIME BY APPLYING GALVANIZED METAL PRIMER AT SPREADING RATE RECOMMENDED BY THE MANUFACTURER TO ACHIEVE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 1.2 MILS. BENJAMIN MOORE IRON CLAD GALVANIZED METAL LATEX PRIMER #155 OR EQUAL.
   b. FINISH WITH 2 COATS OF SEMIGLOSS ACRYLIC ENAMEL APPLIED AT SPREADING RATE RECOMMENDED BY THE MANUFACTURER TO ACHIEVE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 2.6 MILS. BENJAMIN MOORE REGAL AQUAGLO VINYL-ACRYLIC LATEX ENAMEL #333 OR EQUAL.
3. ANTENNA PANELS
   a. APPLY SHERWIN WILLIAMS POLANE-B OR EQUAL. COLOR TO MATCH EXISTING STRUCTURE.
4. COAXIAL CABLES
   a. FIRST APPLY ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH).
   b. FINISH WITH TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH).
   c. COLOR TO MATCH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24"x24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

26 ELECTRICAL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

ALL ELECTRICAL CONDUCTORS:

- INSULATION SHALL BE MINIMUM 600V TYPE THHN, THWN-2, OR XHHW.
- BRANCH CIRCUIT CONDUCTORS SHALL BE SOFT DRAWN 98% MINIMUM CONDUCTIVITY PROPERLY REFINED COPPER.
- FEEDER CIRCUIT CONDUCTORS SHALL BE EITHER COPPER OR ALUMINUM OF THE APPROPRIATE SIZE FOR THE APPLICATION, OR AS SPECIFICALLY NOTED.
- PERMANENTLY LABEL OR TAG ALL CONDUCTORS WITH THEIR CIRCUIT DESIGNATION AT ALL TERMINATION ENDS, SPLICES, AND VISIBLE AS PASS-THROUGH IN ALL ENCLOSURES.

ALL CONDUIT, RACEWAY, WIREWAYS, DUCTS, ETC. SHALL BE LISTED AND SUITABLE FOR THE APPLICATION. ONLY THE FOLLOWING CONDUITS AS APPROVED AND LISTED FOR THE APPLICATION SHALL BE ACCEPTABLE:

- ELECTRICAL METALLIC TUBING (EMT).
- COMPRESSION COUPLINGS AND CONNECTORS ONLY MADE UP WRENCH TIGHT.
- FLEXIBLE METAL CONDUIT (FMC) AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC).
- FINAL CONNECTIONS TO VIBRATING OR ADJUSTABLE EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, HVAC UNITS, TRANSFORMERS, MOTORS, ETC. OR WHERE EQUIPMENT IS PLACED UPON SLAB ON-GRADE.
- RIGID GALVANIZED STEEL (RGS).
- ALL FITTINGS, CONNECTORS, AND COUPLINGS SHALL BE THREADED MADE UP WRENCH TIGHT.
- RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40 OR SCHEDULE 80.
- MAY BE USED FOR SERVICES, EXTERIOR, BELOW GRADE, AND WET LOCATIONS.
- SHALL NOT BE USED IN CONCRETE SLABS NOR EXPOSED WITHIN A BUILDING OR STRUCTURE.
- METAL-CLAD CABLE (MC)
- CONCEALED INSTALLATIONS ONLY.
- WITHIN A DUCT WITH SMOOTH OR CORRUGATED METAL JACKET AND NO OUTER COVERING OVER THE METAL JACKET.

IN FINISHED SPACES, ALL CONDUITS SHALL BE CONCEALED EXCEPT TO MAKE A FINAL CONNECTION TO EQUIPMENT NOT MOUNTED IN OR AGAINST FINISH MATERIAL.

ALL FEEDER AND BRANCH CIRCUITS SHALL HAVE A SEPARATE PROPERLY SIZED AND MARKED GROUNDING CONDUCTOR, PER APPLICABLE CODES, THAT BONDS ALL ENCLOSURES, BOXES, ETC. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING CONDUCTOR.

IF EXISTING ELECTRIC SERVICE IS TO REMAIN, CONTRACTOR SHALL BE VERIFY THAT IT MEETS PROJECT REQUIREMENTS WITHOUT MODIFICATION. IF IT IS TO BE ADDED OR REPLACED AS A PART OF THIS WORK, CONTRACTOR SHALL ORDER FROM, COORDINATE WITH, AND GAIN APPROVAL FROM THE ELECTRICAL UTILITY. ALL ELECTRICAL EQUIPMENT SHALL BE AS SPECIFIED AND AS APPROVED BY THE LOCAL UTILITY WHERE APPLICABLE.

ALL EQUIPMENT, ENCLOSURES, ETC. SHALL BE SUITABLE FOR THE INSTALLED ENVIRONMENT, MINIMUM NEMA 3R FOR ALL EXTERIOR INSTALLATIONS.

WIRING DEVICES SHALL BE SPECIFICATION GRADE AND WIRING DEVICE COVER PLATES SHALL BE PLASTIC WITH ENGRAVING AS SPECIFIED. COLOR SHALL BE IVORY. ALL DEVICES AND COVER PLATES SHALL BE OF THE SAME MANUFACTURER.

ALL FIRE-RATED PENETRATIONS SHALL BE SEALED USING A SUITABLE AND LISTED FIRE SEALING DEVICE OR GROUT THAT WILL MAINTAIN THE FIRE RATING OF THE STRUCTURE PENETRATED.

PROVIDE PERMANENTLY AFFIXED ENGRAVED NAMEPLATES FOR ALL CODE REQUIRED LABELING AND ON ALL PANELS, METERING, DISCONNECTS, AND ELECTRICAL EQUIPMENT THAT IDENTIFIES EQUIPMENT SERVED, ELECTRICAL SOURCE WITH CIRCUIT IDENTIFICATION, AND VOLTAGES WITHIN.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL TERMINATIONS TO ALL EQUIPMENT.

ALL ELECTRICAL APPURTENANCES THAT ARE DISCONNECTED SHALL BE COMPLETELY REMOVED WITH EXISTING STRUCTURES TO REMAIN, REPAIRED, FINISHED, FILLED, PAINTED, ETC. ALL PANEL SCHEDULES, EQUIPMENT LABELING, AND CODE-REQUIRED LABELING, SHALL BE VERIFIED AND PROPERLY COMPLETED TO MATCH THE INSTALLATION.

26 GROUNDING:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

GROUND ALL SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH BEST INDUSTRY PRACTICE, THE REQUIREMENTS OF THE NFPA 70 NATIONAL ELECTRICAL CODE (NEC), AND ALL OTHER APPLICABLE CODES AND REGULATIONS.

ALL GROUNDING ELECTRODES PRESENT AT EACH SERVICE LOCATION SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM.

ALL EQUIPMENT ENCLOSURES, DEVICES, AND CONDUITS SHALL BE GROUNDED BY THE INSTALLATION OF A SEPARATE GROUNDING CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS THAT IS SIZED PER CODE OR IS OF THE SIZE INDICATED ON THE DRAWINGS, SHALL BE CONTINUOUS IN LENGTH, AND SHALL BE BONDED TO EACH ENCLOSURE PASSED THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING WIRE OR CIRCUIT.

BOND ALL METALLIC CONDUITS TOGETHER THAT ARE CONNECTED TO NON-METALLIC ENCLOSURES, IN-GROUND BOXES, AND TO AN ENCLOSURE WHERE A GROUND BUS IS SPECIFIED OR SUPPLIED. ACCOMPLISH THIS BOND WITH GROUNDING CONDUCTORS MINIMUM SIZED TO THE LARGEST GROUNDING CONDUCTOR PRESENT IN THE ENCLOSURE CONNECTED TO A GROUNDING TYPE BUSHING EQUALLY SIZED OR MAXIMUM GROUND WIRE ACCOMMODATION AVAILABLE IN STANDARD MANUFACTURE FOR THE CONDUIT SIZE, WHICHEVER IS LESS.

EQUIPMENT GROUNDING AND LOAD SIDE BONDING CONDUCTORS SHALL BE SIZED PER THE CIRCUIT'S OVER-CURRENT PROTECTIVE DEVICE (OCPD) SIZE. WHERE THE UNGROUNDED CONDUCTORS ARE INCREASED IN SIZE ABOVE THE STANDARD FOR THE CIRCUIT'S OCPD, INCREASE THE GROUNDING CONDUCTOR PROPORTIONATELY TO THE CROSS-SECTIONAL AREA OF THE UNGROUNDED CONDUCTORS.

SERVICE MAIN BONDING JUMPERS AND GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AND INSTALLED PER THE MINIMUM OF ALL APPLICABLE CODES AND REGULATIONS.

26 LIGHTNING PROTECTION:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS AND THE GROUNDING SPECIFICATIONS HEREIN.

THE LIGHTNING PROTECTION GROUNDING SYSTEM (LPGS) SHALL CONSIST OF BONDING ALL EQUIPMENT AND CONDUCTIVE STRUCTURES TO LOCALIZED SINGLE-POINT GROUNDING CONNECTIONS (TYPICALLY GROUND BARS) WHICH ARE BONDED TOGETHER AND TO AN IN-GROUND SYSTEM. IF THE LPGS IS ON A BUILDING, IT SHALL BE EFFECTIVELY BONDED TO THE ELECTRICAL SERVICE MAIN BONDING JUMPER AND TO ADDITIONAL IN-GROUND ELECTRODES AS MAY BE REQUIRED OR INDICATED. IF THE LPGS IS ON A DEDICATED COMMUNICATION SITE, ALL EQUIPMENT AREAS AND TOWERS SHALL EACH HAVE THEIR OWN IN-GROUND RING WITH EVERY RING BONDED TOGETHER, AND ALL CONDUCTIVE STRUCTURES IN CLOSE PROXIMITY (FENCES, ICE BRIDGES, ISOLATED EQUIPMENT, ETC.) ALSO BONDED TO PROVIDE A COMMON ELECTRICAL EQUIPOTENTIAL SYSTEM FOR ALL CONDUCTIVE ELEMENTS AND STRUCTURES.

CONDUCTORS:

- MIN #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL IN-GROUND CONDUCTORS.
- MIN #2 AWG COPPER GREEN STRANDED FOR BONDING STRUCTURES, AND FOR INTER-SYSTEM BONDING OF INDIVIDUAL ELEMENTS SUCH AS GROUND BAR TO GROUND BAR.
- MIN #6 AWG COPPER GREEN STRANDED OR ALL EQUIPMENT BONDING.
- INSTALL ALL IN-GROUND CONDUCTORS IN THE SAME HORIZONTAL PLANE OR IN A DOWNWARD DIRECTION AWAY FROM THE TOWER AND EQUIPMENT AREAS.
- AVOID LONG RUNS. MAKE DIRECT RUNS AS MUCH AS POSSIBLE.
- PLACE THROUGH NON-METALLIC SLEEVES WHEN PASSING THROUGH FLOORS, WALLS, CEILINGS, AND SIMILAR STRUCTURES.
- MAKE ALL CONNECTIONS IN CONTACT WITH EARTH WITH EXOTHERMIC WELDING. MAKE ALL OTHER CONNECTIONS WITH EXOTHERMIC WELDING, IRREVERSIBLE COMPRESSION CONNECTORS, OR LISTED COMPRESSION TWO-HOLE LUGS.
- INSTALL ALL CONDUCTORS WITH A MINIMUM 18 INCH BEND RADIUS AND NO BEND LONGER THAN A 90 DEGREE ARC. ALL BENDS SHALL BE HORIZONTAL, OR DOWNWARD TOWARDS EARTH.
- ALL CONDUCTORS PASSING FROM ABOVE-GROUND TO IN-GROUND CONNECTIONS, WHERE EXPOSED, SHALL BE COVERED AND PROTECTED WITH A NON-METALLIC CONDUIT SEALED AT BOTH ENDS.
- IF 2 OR MORE IN-GROUND CONDUCTOS ARE IN THE SAME PATH (2 RINGS OVERLAPPING, BONDING FOLLOWING ANOTHER RING OR RADIAL, OR SIMILAR), COMBINE WITH A SHARED SINGLE CONDUCTOR.

EQUIPMENT AND TOWER GROUND RINGS SHALL BE:

- BONDED TO ANY CONDUCTIVE OBJECT OR STRUCTURE WITHIN 5 FEET OF EQUIPMENT GROUND RINGS AND WITHIN 20 FEET OF TOWER GROUND RINGS.
- INSTALLED MINIMUM 18 INCHES FROM FOUNDATIONS, FOOTINGS, AND SIMILAR.

INSTALL ALL IN-GROUND RINGS, RADIALS, BONDS CONNECTING THEM, AND ALL SIMILAR GROUNDING:

- MIN 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE, WHICHEVER IS GREATER DEPTH.
- MIN 2 FEET FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS, AND SIMILAR STRUCTURES, EXCEPT WHEN MAKING A BOND TO ANY OF THESE STRUCTURES. DO NOT BOND TO FOUNDATION INTERNAL REINFORCEMENT.

ALL EQUIPMENT GROUPED IN A COMMON AREA, COMPOUND, STRUCTURE, OR SIMILAR SHALL BE BONDED TO A SINGLE-POINT GROUND, PREFERABLY AN ISOLATED GROUND BAR. BOND THE GROUND BAR TO THE SYSTEM WITH MINIMUM SINGLE BONDING CONDUCTOR. IF BONDING TO AN IN-GROUND RING, INSTALL 2 BONDING CONDUCTORS MINIMUM WITH EACH CONDUCTOR INSTALLED DIRECTIONALLY AWAY FROM EACH OTHER AND PARALLEL TO THE IN-GROUND CONDUCTOR, WITH NO TEE CONNECTIONS.

TOWER GROUNDING:

- EACH TOWER LEG SHALL BE BONDED TO ITS RING. SINGLE-LEGGED TOWERS, OR MONOPOLES, SHALL HAVE 2 BONDS ON OPPOSITE SIDES.
- BOND TO TOWER BASE, NOT TO VERTICAL TOWER STRUCTURE, AWAY FROM TOWER MOUNTING HARDWARE.
- EACH BOND SHALL HAVE A CORRESPONDING GROUND ROD ON THE RING.
- EACH BOND SHALL CONSIST OF 2 CONDUCTORS FROM THE TOWER TO ITS RING WITH EACH CONDUCTOR DIRECTED IN OPPOSITE DIRECTIONS WITH A PARALLEL CONNECTION ON THE RING ON OPPOSITE SIDES OF THE GROUND ROD.

EQUIPMENT AREA GROUNDING:

- COMMUNICATION AREAS ON EARTH SHALL HAVE A GROUND RING.
- BOND ALL EQUIPMENT TO A SINGLE-POINT GROUND (GROUND BAR).
- BOND THE EQIPMENT SINGLE-POINT GROUND TO THE EQUIPMENT GROUND RING WITH MINIMUM 2 CONDUCTORS DIRECTED IN OPPOSITE DIRECTIONS WITH PARALLEL CONNECTIONS ON THE RING.
- IF EQUIPMENT IS ENCLOSED IN A SHELTER:
- IF THE SHELTER IS CONSIDERED TO BE EXPOSED TO A DIRECT LIGHTNING STRIKE, INSTALL A BUILDING LIGHTNING PROTECTION SYSTEM PER APPLICABLE VERSION OF NFPA 780.
- BOND ALL FIXED CONDUCTIVE BUILDING COMPONENTS TOGETHER AND TO THE BUILDING RING GROUND AT THE CORNERS. THIS IS TYPICALLY CALLED THE HALO GROUND. DO NOT BOND EQUIPMENT TO THE HALO GROUND.
- BOND ALL EQUIPMENT TOGETHER TO A SINGLE-POINT OR INTERIOR EQUIPMENT RING GROUND (IEGR). BOND THE SINGLE-POINT OR IEGR TO THE EXTERNAL EQUIPMENT RING GROUND.
- PLACE GROUND RODS AT THE EQUIPMENT GROUND RING CORNERS.

GROUND RODS:

- SEPARATION SPACE BETWEEN ANY 2 GROUND RODS SHALL BE NO CLOSER THAN THEIR DEPTH. THIS APPLIES TO ALL RODS IN THE COMPLETE SYSTEM.
- DRIVE VERTICALLY IN UNDISTURBED SOIL WITH THE TOP AT SAME DEPTH AS THE IN-GROUND CONDUCTOR. IF NOT POSSIBLE TO INSTALL VERTICALLY, PLACE AS CLOSE TO VERTICAL AS POSSIBLE AND IN A DIRECTION AWAY FROM THE NEAREST ABOVE-GROUND CONDUCTIVE ELEMENT (TOWER, EQUIPMENT, ETC.).

RADIALS (TYP. NEW DEDICATED COMMUNICATION SITES):

- WHERE FEASIBLE WITH ENOUGH SPACE AVAILABLE, INSTALL A MINIMUM OF 4, MAXIMUM 10 RING RADIALS.
- EACH RADIAL'S LENGTH SHALL BE MIN 20 FT, MAX 80 FT.
- EXTEND RADIALS PERPENDICULAR FROM RINGS IN AS STRAIGHT LINE AS POSSIBLE, AWAY FROM OTHER RING GROUNDS, RADIALS, BONDS, AND SIMILAR.
- A COMMON PRACTICE IS TO PLACE 4 RADIALS FROM THE TOWER RING TO THE 4 CORNERS OF THE AVAILABLE AREA.

AT A MINIMUM, BOND ALL COMPOUND CONDUCTIVE FENCE CORNER POSTS AND GATE POSTS TO THE LPGS. PREFERABLY, INSTALL A GROUND RING THAT FOLLOWS THE FENCE LINE, BONDING ALL POSTS TO THE RING.

27 ANTENNAS & CABLES:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRANSMISSION CABLES, JUMPERS, CONNECTORS, GROUNDING STRAPS, ANTENNAS, MOUNT AND HARDWARE. ALL MATERIALS SHALL BE INSPECTED BY THE CONTRACTOR FOR DAMAGE UPON DELIVERY. JUMPERS SHALL BE SUPPLIED AT ANTENNAS AND EQUIPMENT INSIDE SHELTER. COORDINATE LENGTH OF JUMPER CABLES WITH OWNER. COORDINATE AND VERIFY ALL OF THE MATERIALS TO BE PROVIDED WITH OWNER PRIOR TO SUBMITTING BID AND ORDERING MATERIALS.

AFTER INSTALLATION, THE TRANSMISSION LINE SYSTEM SHALL BE PIM / SWEEP TESTED FOR PROPER INSTALLATION AND DAMAGE WITH ANTENNAS CONNECTED. CONTRACTOR SHALL OBTAIN AND USE LATEST TESTING PROCEDURES FROM OWNER OR MANUFACTURER PRIOR TO BIDDING.

ANTENNA CABLES SHALL BE UNIQUELY COLOR-CODED AT THE ANTENNAS, BOTH SIDES OF EQUIPMENT SHELTER WALL, AND JUMPER CABLES AT THE EQUIPMENT.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONNECTORS, ASSOCIATED CABLE MOUNTING AND GROUNDING HARDWARE, WALL MOUNTS, STANDOFFS, AND ALL ASSOCIATED HARDWARE TO INSTALL ALL CABLES AND ANTENNAS TO THE MANUFACTURER'S AND OWNER'S SPECIFICATIONS.

ANTENNA CABLES SHALL BE FOAM DIELECTRIC COAXIAL CABLES AS FOLLOWS:

- BASE STATION ANTENNAS:
  - 7/8" DIAMETER FOR CABLE LENGTHS UP TO 100 FT.
  - 1-5/8" DIAMETER FOR CABLE LENGTHS GREATER THAN 100 FT.
  - GPS ANTENNAS:
  - 7/8" DIAMETER FOR CABLE LENGTHS UP TO 200 FT.
  - 1-5/8" DIAMETER FOR CABLE LENGTHS GREATER THAN 200 FT.

MINIMUM BENDING RADIUS FOR COAXIAL CABLES SHALL BE:

- 15 FT FOR 7/8" COAXIAL CABLES.
- 25 FT FOR 1-5/8" COAXIAL CABLES.

CABLE SHALL BE INSTALLED WITH A MINIMUM NUMBER OF BENDS WHERE POSSIBLE. CABLE SHALL NOT BE LEFT UNTERMINATED AND SHALL BE SEALED IMMEDIATELY AFTER BEING INSTALLED.

ALL EXTERIOR CABLE CONNECTIONS SHALL BE COVERED WITH A WATERPROOF SPLICING KIT.

CONTRACTOR SHALL VERIFY EXACT LENGTH AND DIRECTION OF TRAVEL IN FIELD PRIOR TO CONSTRUCTION.

CABLE SHALL BE FURNISHED AND INSTALLED WITHOUT SPLICES AND WITH CONNECTORS AT EACH END.

27 CABLE TRAY:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

CABLE TRAY SHALL BE MADE OF EITHER CORROSION RESISTANT METAL OR WITH A CORROSION RESISTANT FINISH.

CABLE TRAY SHALL BE OF LADDER TRAY TYPE WITH FLAT COVER CLAMPED TO SIDE RAILS.

CABLE LADDER SHALL BE SIZED TO FIT ALL CABLES IN ACCORDANCE WITH NEC AND NEMA 11-15-84.

CABLE LADDER TRAYS SHALL BE NEMA CLASS 12A BY PW INDUSTRIES, INC. OR EQUAL.

CABLE LADDER TRAY SHALL BE SUPPORTED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

ALL WORKMANSHIP SHALL CONFORM TO THESE REQUIREMENTS AND ALL LOCAL CODES AND STANDARDS TO ENSURE SAFE AND ADEQUATE GROUNDING SYSTEM.

Cellco Partnership d/b/a

verizon

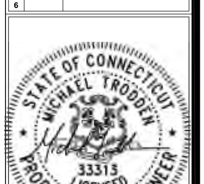
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION

567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	08/25/21	FOR REVIEW: JRM
1	09/09/21	FOR FILING: JRM
2	09/24/21	FOR FILING: JRM
3	10/13/21	FOR FILING: JRM
4		
5		
6		



DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: CONNECTICUT WATER COMPANY
ADDRESS: 93 WEST MAIN STREET CLINTON, CT 06413

EAST WINDSOR 2 CT

SITE ADDRESS: 104 PROSPECT HILL ROAD EAST WINDSOR, CT 06088

APT FILING NUMBER: CT141_12550

DRAWN BY: DRA

DATE: 08/25/21

CHECKED BY: JRM

VZW PROJECT CODE: 20212246547

VZW LOCATION CODE: 467839

VZW FUZE ID: 15887255

SHEET TITLE:

NOTES& SPECIFICATIONS

SHEET NUMBER:

N-1

[CBRS] Clip-on Antenna Specifications

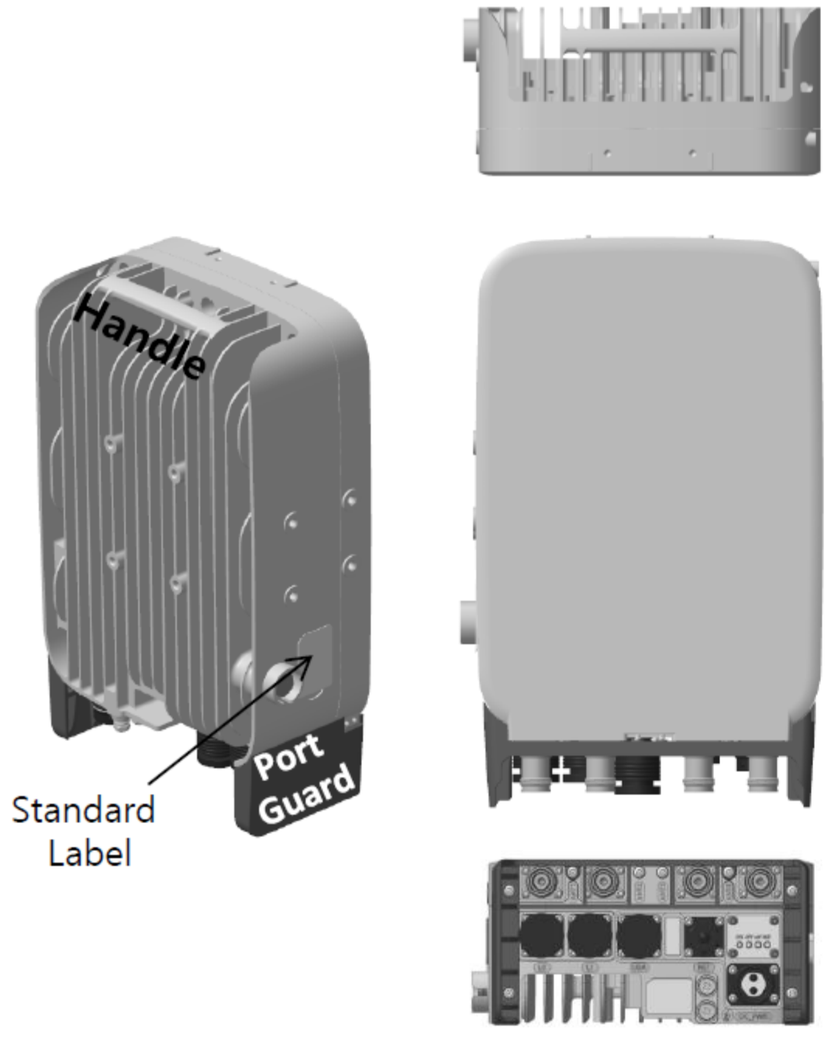
VzW accepted IP45 in FLD, but IP55 is Samsung Spec.

Items	Clip-on Antenna, BASTA**
Antenna Gain	12.5 ± 0.5 dBi (Max 13 dBi)
Horizontal BW (-3dB)	65° ± 5°
Vertical BW (-3dB)	17° ±3°
Electrical Tilt	8° (fixed) ±2°
Front-to-Back Ratio	> 25 dB
Port-to-Port Tracking	< 3 dB
VSWR	< 1.5
Isolation	> 25 dB
Ingress Protection	**IP55**
Size	220(W)×313(H)×34.3(D) mm (*) (8.7 x 12.3 x 1.4 inch.)
Weight	< **2.0** kg [Typ. 1.3 kg]
It is required that the radio should be weatherproofed properly with JMA WPS Boot with external antenna or with Weatherproof Boot for clip-on antennas.	

Antenna includes integrated cable with connector
* Design is subject to minor change

** Ant. spec. follows NGMN recommendations on Base Station Antenna Standards (BASTA). For example, 'mean ± tolerance of 86.6%' is applied to double-sided specification of statistical RF parameters.

[CBRS RRH] Spec.



Current Size: 216 x 307 x 105.5 mm (6.99L)
(8.5 x 12.1 x 4.1 inch., excluding Port Guard)
Design is subject to minor change

Item	Specification
Band	Band 48 (3.5 GHz)
Frequency	3550~3700 MHz
IBW	150 MHz
OBW	80 MHz
# of Carriers	5/10/15/20 MHz x 4 carriers
RF Chain	4TX / 4RX
RF Output Power & EIRP	4 path x 5 W (Total: 20 W = 43 dBm) (EIRP: 47 dBm / 10 MHz)
RX Sensitivity	Typical : -101.5 dBm @ 1 Rx (3GPP 36.104, Wide Area)
Modulation	256-QAM support (1024-QAM with 1~2dB power back-off)
Input Power	-48 VDC (-38 to -57 VDC, 1 SKU), with clip-on AC-DC converter (Option)
Power Consumption	About 160 Watt @ 100% RF load, typical conditions
Volume	**Under 7L** (w/o Antenna), Under 9.6L (with antenna)
Weight	**Under 8.0 kg** (**18.64** lb) (w/o Antenna), Under 10.5 Kg (with ant.)
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (W/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A
	[B48] : FCC 47 CFR 96.41 e)
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, duplex or Bi-Di
CPRI Cascade	Not supported
# of Antenna Port	4
External Alarm (UDA)	4
RET	AISG 2.2
TMA & built-in Bias-T I//F and PIM cancellation	Not supported
Mounting Options	Pole, wall, tower, back to back, side by side (for external ant), 3 RRH with Clip-on Antenna on the pole
Antenna Type	Integrated (Clip-on) antenna (Option), External antenna (Option)
NB-IoT	Not Supported (HW Resource reserved for 1 Guard Band NB-IoT per LTE carrier)
Spectrum Analyzer	TX/RX Support
External Alarm (UDA)	4
5G NR	Support with S/W upgrade
XRAN	Support with S/W upgrade

SAMSUNG

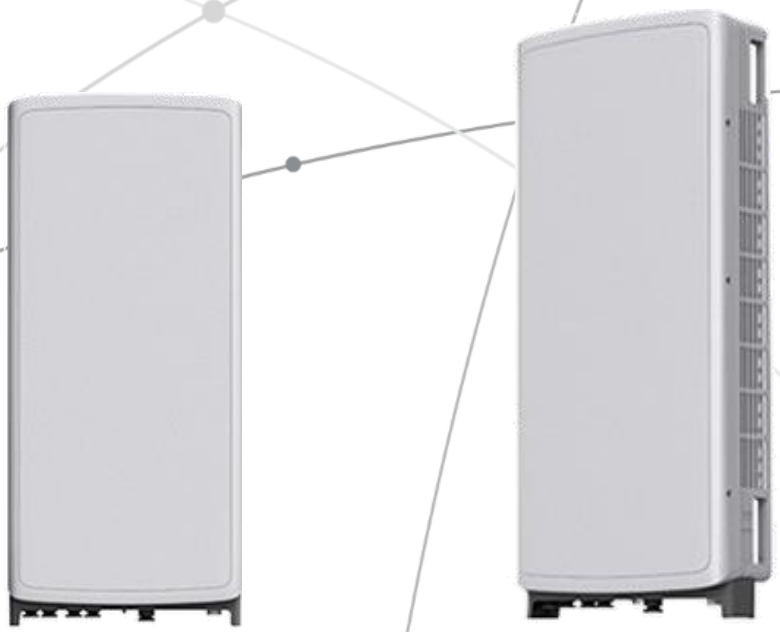
SAMSUNG

C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

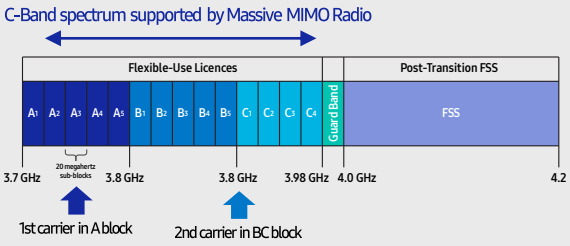


Points of Differentiation

Wide Bandwidth

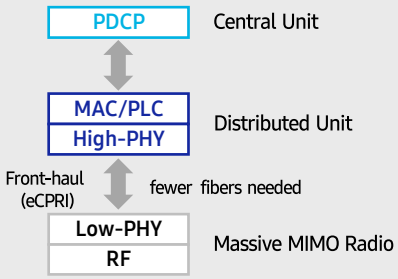
With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.
It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

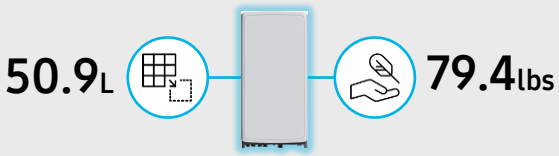
This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment..



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs

SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

ATTACHMENT 3

	General	Power	Density					
Site Name: East Windsor 2								
Tower Height: Verizon @ 87ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**FREQ.**	**CALC. POWER DENS**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T	1	546	88	850	0.0292	0.5667	0.52%	
*AT&T	1	1082	88	1900	0.0579	1.0000	0.58%	
*AT&T	1	1816	88	850	0.0971	0.5667	1.71%	
*AT&T	1	1816	88	850	0.0971	0.5667	1.71%	
*AT&T	1	2729	88	2300	0.1460	1.0000	1.46%	
*AT&T	1	3591	88	1900	0.1921	1.0000	1.92%	
*AT&T	1	1271	88	737	0.0680	0.4913	1.38%	
VZW 700	**4**	**697**	**87**	**751**	**0.0132**	**0.5007**	**2.65%**	
VZW CDMA	**2**	**402**	**87**	**869**	**0.0038**	**0.5793**	**0.66%**	
VZW Cellular	**4**	**823**	**87**	**869**	**0.0156**	**0.5793**	**2.70%**	
VZW PCS	**4**	**1451**	**87**	**1980**	**0.0276**	**1.0000**	**2.76%**	
VZW AWS	**4**	**1656**	**87**	**2125**	**0.0315**	**1.0000**	**3.15%**	
VZW CBAND	**4**	**6531**	**87**	**3730**	**0.1241**	**1.0000**	**12.41%**	
VZW CBRS	**4**	**12**	**87**	**3625**	**0.0002**	**1.0000**	**0.02%**	
								33.63%
* Source: Siting Council								

ATTACHMENT 4

ALL-POINTS TECHNOLOGY CORPORATION

October 13, 2021 (Rev3)

Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

Attn: Mr. Andrew Leone

Re: Mount & Structural Analysis Report
Verizon Wireless Site I.D.: East Windsor 2 CT
104 Prospect Hill Road
East Windsor, CT 06088

Project/Location Code:	20212246547/467839
VZW FUZE I.D.:	15887255
APT Filing No.	CT141_12550

Dear Mr. Leone,

All-Points Technology Corp. (APT), a professional engineering corporation licensed in the State of Connecticut, has been retained by Verizon to assess the structural adequacy of the existing Verizon mounting assemblies and host structure to support the proposed equipment modification.

Details of the proposed antenna and appurtenance modification are included within the table on the following page. Reference is made to the Construction Drawings prepared by this office, marked Rev 3, dated 10/13/21.

The following information was utilized in the preparation of this assessment:

- Tower Schematic Drawing prepared by APT, dated 08/02/2007.
- Mount Analysis Report prepared by APT, dated 03/12/2020.
- Design Exhibits, DE-1 to DE-4, prepared by APT, marked Rev1, dated 02/04/2020.
- Water Tank Drawings (Partial), prepared by Chicago Bridge & Iron Company, dated 05/08/1963.

The structural review has been prepared in accordance with the following design standards:

- ASCE/SEI 7-10 – Minimum Design Loads for Buildings and Other Structures.
- AISC - American Institute of Steel Construction Manual of Steel Construction, 14th Ed.
- IBC 2015 - as amended by the 2018 Connecticut State Building Code.
- ANSI/TIA-222-H – Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures.
- ANSI/AWWA D100-05 – Welded Carbon Steel Tanks for Water Storage.

The structural review has been prepared utilizing the following design criteria:

- 135 mph (3-second gust), Ultimate Wind Speed (equivalent to 105mph Nominal)
- 50 mph (3-second gust) Wind Speed with 1.0" design ice thickness.
- Risk Category III
- Exposure Category C
- Roof Live Load = 15 psf
- Ground Snow Load, Pg = 30 psf

The existing and proposed Verizon antenna/appurtenance and mount assembly loading consists of the following equipment (proposed equipment/equipment to be relocated indicated in **bold** text):

Antenna and Appurtenance Make/Model	Quantity	Status	Mount Type	Centerline
Samsung MT6407-77A panel antennas	**3**	**P**	Fifteen (15) existing single pipe mast antenna mounts.	87.0'± AGL
Samsung CBRS RRH w/ Clip on Antenna	**3**	**P**		
Commscope SBNHH-1D65B panel antennas	6	ETR		
Samsung B2/B66a RRH-BR049 (RFV01U-D1A) Remote Radio Heads (RRHs)	3	ETR		
Samsung B5/B13 RRH-BR04C (RFV01U-D2A) Remote Radio Heads (RRHs)	3	ETR		
Raycap RHSDC-3315-PF-48 (6 OVP)	3	ETR		
6x12 L.I. Hybrid Cables	3	ETR	n/a	n/a

Notes:
1. ETR = Existing to Remain; ERL = Exist to be Relocated; P = Proposed.
2. Contractor to remove all coaxial cables.

The findings of this review are based upon comparative review of the proposed equipment loading, referenced design documentation, rigorous mount analysis and a global stability analysis. Under the proposed loading as referenced above, the maximum usage of the existing mounting assembly is 88.2% (pipe mast). Further, our global stability analysis has determined a usage of 28.9% (overturning). In conclusion, we find that the proposed modification will not adversely affect the structural integrity of the existing mounting assemblies and host water tank structure.

Sincerely,
All-Points Technology Corp. P.C.

Michael S. Trodden, P.E.
Sr. Structural Engineer

Appendix A

Design Criteria

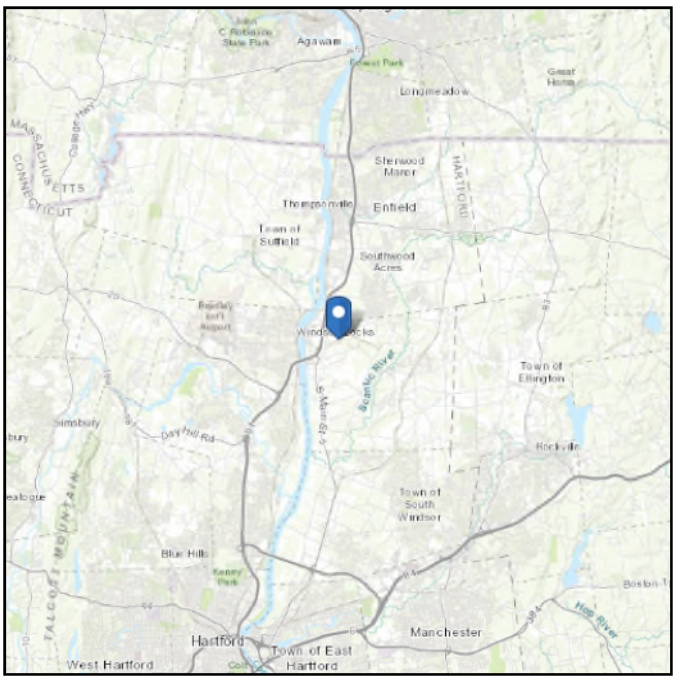
(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS												
				Wind Design Parameters								
Municipality	**Ground Snow Load** (psf)	**MCE Spectral Accelerations** (%g)		**Ultimate Design Wind Speeds,** V_{ult} (mph)			**Nominal Design Wind Speeds,** V_{asd} (mph)			**Wind-Borne Debris Regions**[1]		**Hurricane-Prone Regions**
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
East Hampton	30	0.177	0.062	120	130	140	93	101	108			Yes
East Hartford	30	0.180	0.064	115	125	135	89	97	105			Yes
East Haven	30	0.182	0.062	120	130	140	93	101	108		Type B	Yes
East Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
~~Easton~~	~~30~~	~~0.215~~	~~0.066~~	~~110~~	~~120~~	~~130~~	~~85~~	~~93~~	~~101~~			~~Yes~~
East Windsor	35	0.177	0.064	115	125	135	89	97	105			Yes
~~Ellington~~	~~35~~	~~0.176~~	~~0.064~~	~~115~~	~~125~~	~~135~~	~~89~~	~~97~~	~~105~~			~~Yes~~
Enfield	35	0.176	0.065	110	125	130	85	97	101			Yes
Essex	30	0.168	0.059	120	135	145	93	105	112		Type A	Yes
Fairfield	30	0.215	0.065	115	125	135	89	97	105		Type B	Yes
Farmington	35	0.183	0.064	115	125	135	89	97	105			Yes
Franklin	30	0.171	0.061	120	130	140	93	101	108		Type A	Yes
Glastonbury	30	0.180	0.063	115	125	135	89	97	105			Yes
Goshen	40	0.181	0.065	105	115	125	81	89	97			
Granby	35	0.176	0.065	110	120	130	85	93	101			Yes
Greenwich	30	0.259	0.070	110	120	130	85	93	101			Yes
Griswold	30	0.168	0.060	125	135	145	97	105	112		Type A	Yes
Groton	30	0.160	0.058	125	135	145	97	105	112	Type B	Type A	Yes
Guilford	30	0.176	0.061	120	130	140	93	101	108		Type B	Yes
Haddam	30	0.175	0.061	120	130	140	93	101	108			Yes
Hamden	30	0.185	0.063	115	125	135	89	97	105			Yes
Hampton	35	0.172	0.062	120	130	140	93	101	108			Yes
Hartford	30	0.181	0.064	115	125	135	89	97	105			Yes
Hartland	40	0.175	0.065	110	120	125	85	93	97			Yes
Harwinton	35	0.183	0.065	110	120	130	85	93	101			Yes
Hebron	30	0.177	0.063	120	130	140	93	101	108			Yes
Kent	40	0.188	0.065	105	115	120	81	89	93			
Killingly	40	0.171	0.062	120	130	140	93	101	108			Yes
Killingworth	30	0.173	0.061	120	130	140	93	101	108			Yes
Lebanon	30	0.173	0.062	120	130	140	93	101	108			Yes
Ledyard	30	0.163	0.059	125	135	145	97	105	112		Type A	Yes
Lisbon	30	0.169	0.061	125	135	145	97	105	112		Type A	Yes
Litchfield	40	0.184	0.065	110	120	125	85	93	97			Yes
Lyme	30	0.164	0.059	125	135	145	97	105	112		Type A	Yes
Madison	30	0.173	0.060	120	130	140	93	101	108		Type B	Yes
Manchester	30	0.178	0.064	115	125	135	89	97	105			Yes
Mansfield	35	0.173	0.062	120	130	140	93	101	108			Yes
Marlborough	30	0.177	0.062	120	130	140	93	101	108			Yes
Meriden	30	0.183	0.063	115	125	135	89	97	105			Yes
Middlebury	35	0.191	0.064	110	120	130	85	93	101			Yes
Middlefield	30	0.181	0.063	115	125	135	89	97	105			Yes
Middletown	30	0.180	0.063	115	130	135	89	101	105			Yes
Milford	30	0.194	0.063	115	125	135	89	97	105		Type B	Yes
Monroe	30	0.205	0.065	110	120	130	85	93	101			Yes

ASCE 7 Hazards Report

Address:
104 Prospect Hill Dr
East Windsor, Connecticut
06088

Standard: ASCE/SEI 7-16
Risk Category: III
Soil Class: D - Default (see Section 11.4.3)

Elevation: 152.08 ft (NAVD 88)
Latitude: 41.927552
Longitude: -72.597599



Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Mon Aug 23 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Appendix B

Existing Mount Analysis

Project ID:	CT141_12550
Site Name:	East Windsor 2CT
Date:	8/25/2021

(Based on ANSI/TIA-222-H-2018)

Site Name:	East Windsor 2 CT
Site Address:	104 Prospect Hill Road East Windsor, CT 06088
Site County:	Hartford

Design Criteria:

Risk Category =	III		*Table 1.5-1*
Exposure Category =	C		*Section 26.7.3*
Ultimate Design Wind Speed, V =	135	mph	*2018 CTSBC, Appendix N*
Design Wind Speed with Ice, V_i =	50	mph	*Fig. B-9*
Design Ice Thickness, t_i =	1.50	in	*Fig. B-9*
Importance Factor, I =	1.15		*Table 2-3*

Wind Pressure Analysis:

$q_z = 0.00256 K_z K_{zt} K_s K_e K_d V^2$ *Section 2.6.11.6*

K_z :	**See Next Sheet**		
z_g =	900		*Table 26.9-1*
α =	9.5		*Table 26.9-1*
K_{zmin} =	0.85		*Table 26.9-1*
K_{zt} : **K_{zt} =**	**1.00**		*Section 2.6.6*
K_s : **K_s =**	**1.00**		*Section 2.6.7*
K_e : **K_e =**	**1.00**		*Section 2.6.8*
K_d : **K_d =**	**0.95**		*Section 16.6*
q_z' =	**44.32**	**psf**	
q_{zi}' =	**6.08**	**psf**	

$F = q_z G_h (EPA)_A = q_z G_h K_a [(EPA)_N \cos^2(\Theta) + (EPA)_T \sin^2(\Theta)]$ *Section 2.6.11.2*

G_h =	1.00	*Section 16.6*
K_a =	0.90	*Section 16.6*

ALL-POINTS TECHNOLOGY CORPORATION

(Based on ANSI/TIA-222-H-2018)

Project ID: CT141_12550
Site Name: East Windsor 2
Date: 9/24/2021

Design Criteria: *(From Previous Sheet)*

$q_z' =$ **44.32 psf**
$q_{zi}' =$ **6.08 psf**
$t_i =$ **1.50 in**

$G_h =$ 1.00 *Section 16.6*
$K_a =$ 0.90 *Section 16.6*

Description	#/Sector	Elev. z, ft	K_z	q_z, psf	Dimensions Height, in	Width, in	Depth, in	Wght.,[1] lbs	Flat Panel Front Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Flat Panel Side Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs
MT6407-77A	1.0	87.0	1.229	54.48	35.1	16.1	5.5	87.1	3.92	2.180	1.20	4.71	1.341	6.382	1.37	1.840	231.0	91.0	87.1
CBRS RRH w/ CLIP ON ANTENNA	1.0	87.0	1.229	54.48	16.8	9.6	6.9	32.0	1.12	1.757	1.20	1.34	0.804	2.440	1.20	0.965	66.0	48.0	32.0
SBNHH-1D65B	2.0	87.0	1.229	54.48	72.9	11.9	7.1	53.3	6.02	6.126	1.36	8.20	3.594	10.268	1.51	5.424	403.0	266.0	53.3
B2/B66A RRH-BR049 (RFV01U-D1A)	1.0	87.0	1.229	54.48	14.9	14.9	10.0	97.5	1.54	1.000	1.20	1.85	1.039	1.484	1.20	1.247	91.0	62.0	97.5
B5/B13 RRH-BR04C (RFV01U-D2A)	1.0	87.0	1.229	54.48	14.9	14.9	8.1	82.0	1.54	1.000	1.20	1.85	0.842	1.830	1.20	1.011	91.0	50.0	82.0
RHSDC-3315-PF-48	1.0	87.0	1.229	54.48	19.2	15.7	10.3	32.0	2.10	1.221	1.20	2.52	1.367	1.873	1.20	1.640	124.0	81.0	32.0

Description	#/Sector	z, ft	K_z	q_{zi}, psf	Dimensions with Ice Ice Thick., t_{iz}, in	Height, in	Dc, in	Ice Wght., lbs	Flat Panel Front Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Flat Panel Side Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs
MT6407-77A	1.0	87.0	1.229	7.473	1.90	38.90	17.01	142.4	5.38	2.29	0.70	3.763	2.513	2.29	0.70	1.759	26.0	12.0	229.5
CBRS RRH w/ CLIP ON ANTENNA	1.0	87.0	1.229	7.473	1.90	20.61	11.79	54.6	1.91	1.75	0.70	1.339	1.530	1.75	0.70	1.071	10.0	8.0	86.6
SBNHH-1D65B	2.0	87.0	1.229	7.473	1.90	76.70	13.86	233.9	8.36	5.54	0.77	6.418	5.806	5.54	0.77	4.456	44.0	30.0	287.2
B2/B66A RRH-BR049 (RFV01U-D1A)	1.0	87.0	1.229	7.473	1.90	18.70	17.97	71.9	2.43	1.04	0.70	1.700	1.798	1.04	0.70	1.258	12.0	9.0	169.4
B5/B13 RRH-BR04C (RFV01U-D2A)	1.0	87.0	1.229	7.473	1.90	18.70	16.98	68.3	2.43	1.10	0.70	1.700	1.551	1.10	0.70	1.086	12.0	8.0	150.3
RHSDC-3315-PF-48	1.0	87.0	1.229	7.473	1.90	23.00	18.77	92.0	3.12	1.23	0.70	2.184	2.244	1.23	0.70	1.571	15.0	11.0	124.0

Notes:

1- Includes mounting bracket weights.

ALL-POINTS TECHNOLOGY CORPORATION

Project ID: CT141_12550
Site Name: East Windsor 2 CT
Date: 8/25/2021

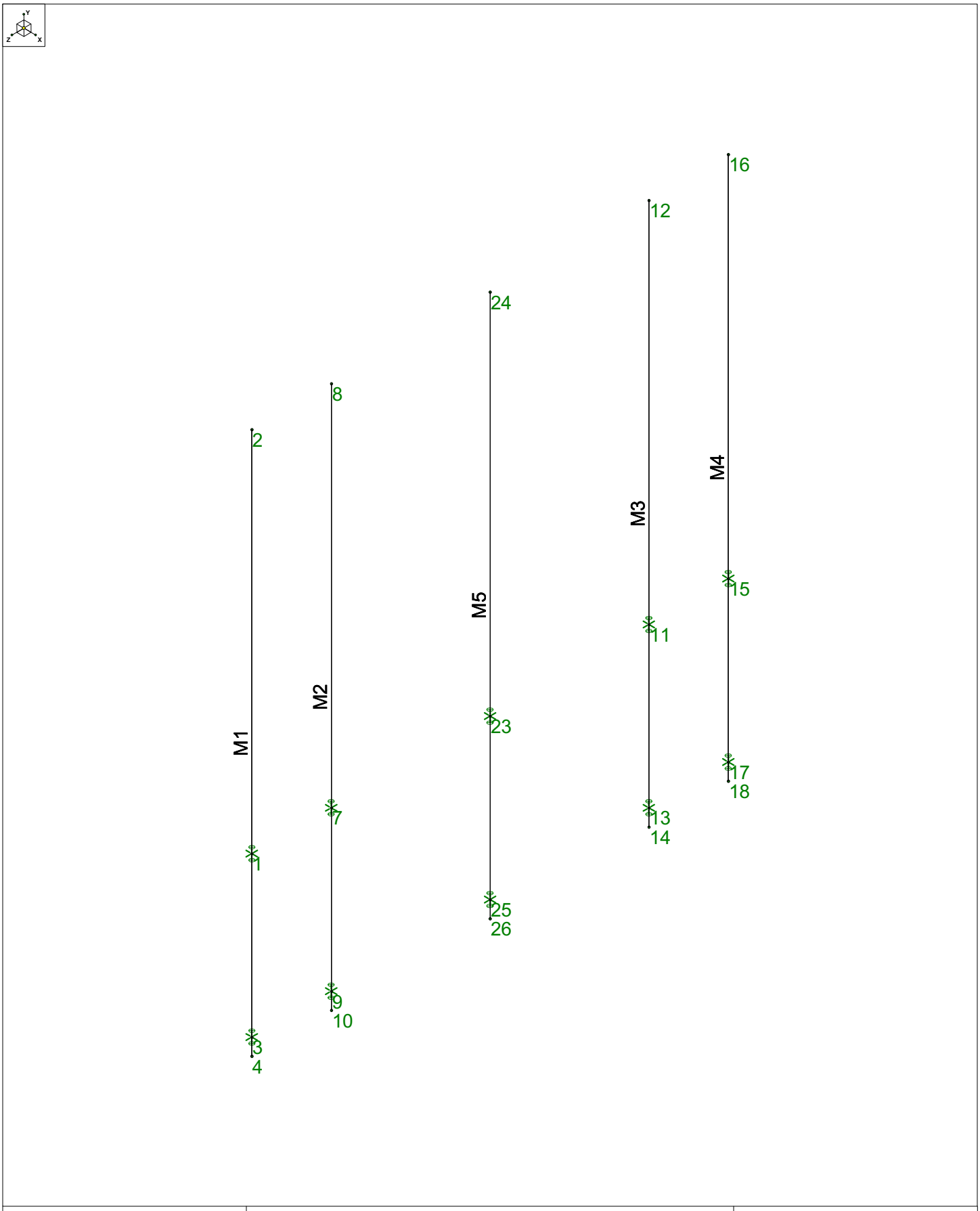
(Based on ANSI/TIA-222-H-2018)

Design Criteria: *(From Previous Sheet)*

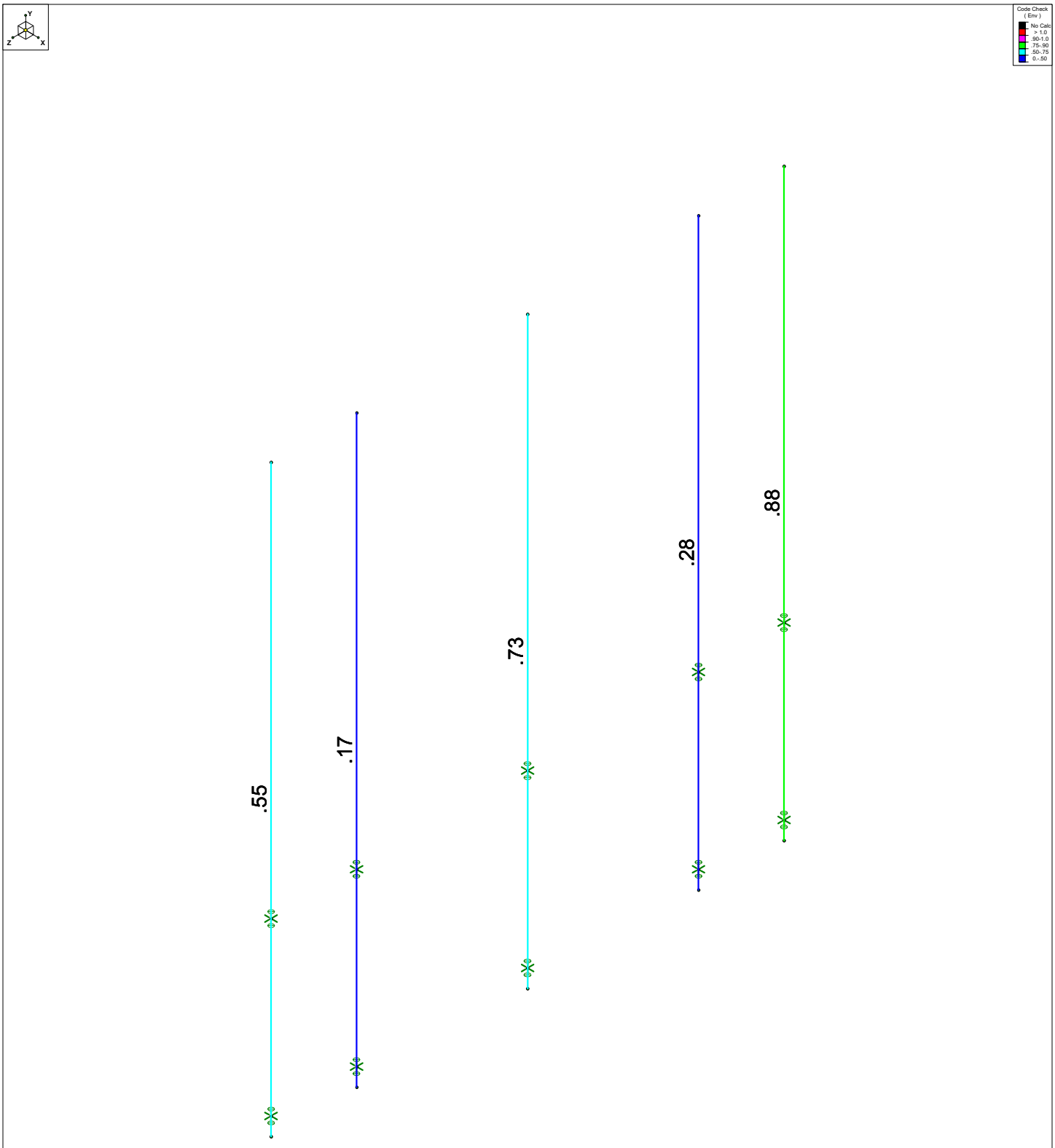
q_z' = **44.32** **psf**
q_{zi}' = **6.08** **psf**
t_i = **1.50** **in**

G_h = 1.00 *Section 16.6*
K_a = 0.90 *Section 16.6*

Description	Elev. z, ft	K_z	q_z, psf	Ice Thick., t_{iz}, in	q_{zi}, psf	Dimensions: Width or Dia, in	Dimensions: Depth, in	Dimensions: Weight, lbs/ft	Loading, No Ice: Flat or Round	Loading, No Ice: Ca	Loading, No Ice: Wind, lbs/ft	With Ice: Width or Dia, in	With Ice: Dc, in	With Ice: Weight, lbs/ft	With Ice: Ca	With Ice: Wind, lbs/ft
2.5" STD Pipe	87	1.229	54.48	1.90	7.47	2.875	2.875	5.79	ROUND	1.20	14.1	6.68	2.88	11.09	1.20	4.49
3.0" XS Pipe	87	1.229	54.48	1.90	7.47	3.500	3.500	10.30	ROUND	1.20	17.2	7.30	3.50	12.54	1.20	4.91



APT		
MT	Typ Mount	
East Windsor 2 CT	NODE & MEMBER LABELS	East Windsor 2 CT - Typ Sector.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

APT		
MT	Typ Mount	
East Windsor 2 CT	BENDING STRESSES	East Windsor 2 CT - Typ Sector.r3d

(Global) Model Settings

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

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-12: ASD
Wood Code	AWC NDS-15: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: ASD
Aluminum Code	AA ADM1-15: ASD - Building
	AISC 14th(360-10): ASD

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

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2.5" STD	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	3.0" STD	PIPE_3.0X	Column	Pipe	A53 Gr.B	Typical	2.83	3.7	3.7	7.4

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	2.5" STD	164									Lateral
2	M2	2.5" STD	164									Lateral
3	M3	2.5" STD	164									Lateral
4	M4	2.5" STD	164									Lateral
5	M5	3.0" STD	164									Lateral

Load Combinations

	Description	S...	PDelta	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		DL	1.4																		
2																								
3	1.2DL + WLX	Yes	Y		DL	1.2	WLX	1																

Load Combinations (Continued)

	Description	S...	PDelta	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
4	1.2DL + 0.75WLX + 0.25..	Yes	Y		DL	1.2	WLX	.75	WLZ	.25														
5	1.2DL + 0.25WLX + 0.75..	Yes	Y		DL	1.2	WLX	.25	WLZ	.75														
6	1.2DL + WLZ	Yes	Y		DL	1.2	WLZ	1																
7	1.2DL + 0.25WL-X + 0.7...	Yes	Y		DL	1.2	WLX	-.25	WLZ	.75														
8	1.2DL + 0.75WL-X + 0.2...	Yes	Y		DL	1.2	WLX	-.75	WLZ	.25														
9	1.2DL + WL-X	Yes	Y		DL	1.2	WLX	-1																
10	1.2DL + 0.75WL-X + 0.2...	Yes	Y		DL	1.2	WLX	-.75	WLZ	-.25														
11	1.2DL + 0.25WL-X + 0.7...	Yes	Y		DL	1.2	WLX	-.25	WLZ	-.75														
12	1.2DL + WL-Z	Yes	Y		DL	1.2	WLZ	-1																
13	1.2DL + 0.25WLX + 0.75..	Yes	Y		DL	1.2	WLX	.25	WLZ	-.75														
14	1.2DL + 0.75WLX + 0.25..	Yes	Y		DL	1.2	WLX	.75	WLZ	-.25														
15																								
16	1.2DL + DLi + WLXi	Yes	Y		DL	1.2	OL1	1	WL...	1														
17	1.2DL + DLi + 0.75WLXi ..	Yes	Y		DL	1.2	OL1	1	WL...	.75	W...	.25												
18	1.2DL + DLi + 0.25WLXi ..	Yes	Y		DL	1.2	OL1	1	WL...	.25	W...	.75												
19	1.2DL + DLi + WLZi	Yes	Y		DL	1.2	OL1	1	WL...	1														
20	1.2DL + DLi + 0.25WL-Xi..	Yes	Y		DL	1.2	OL1	1	WL...	-.25	W...	.75												
21	1.2DL + DLi + 0.75WL-Xi..	Yes	Y		DL	1.2	OL1	1	WL...	-.75	W...	.25												
22	1.2DL + DLi + WL-Xi	Yes	Y		DL	1.2	OL1	1	WL...	-1														
23	1.2DL + DLi + 0.75WL-Xi..	Yes	Y		DL	1.2	OL1	1	WL...	-.75	W...	-.25												
24	1.2DL + DLi + 0.25WL-Xi..	Yes	Y		DL	1.2	OL1	1	WL...	-.25	W...	-.75												
25	1.2DL + DLi + WL-Zi	Yes	Y		DL	1.2	OL1	1	WL...	-1														
26	1.2DL + DLi + 0.25WLXi ..	Yes	Y		DL	1.2	OL1	1	WL...	.25	W...	-.75												
27	1.2DL + DLi + 0.75WLXi ..	Yes	Y		DL	1.2	OL1	1	WL...	.75	W...	-.25												
28																								
29	DL		Y		DL	1																		
30																								
31	DL + 0.6WLX		Y		DL	1	WLX	.6																
32	DL + 0.6(.75WLX + 0.25...		Y		DL	1	WLX	.45	WLZ	.15														
33	DL + 0.6(0.25WLX + 0.7...		Y		DL	1	WLX	.15	WLZ	.45														
34	DL + 0.6WLZ		Y		DL	1	WLZ	.6																
35	DL + 0.6(0.25WL-X + 0.7...		Y		DL	1	WLX	-.15	WLZ	.45														
36	DL + 0.6(0.75WL-X + 0.2...		Y		DL	1	WLX	-.45	WLZ	.15														
37	DL + 0.6WL-X		Y		DL	1	WLX	-.6																
38	DL + 0.6(0.75WL-X + 0.2...		Y		DL	1	WLX	-.45	WLZ	-.15														
39	DL + 0.6(0.25WL-X + 0.7...		Y		DL	1	WLX	-.15	WLZ	-.45														
40	DL + 0.6WL-Z		Y		DL	1	WLZ	.6																
41	DL + 0.6(0.25WLX + 0.7...		Y		DL	1	WLX	.15	WLZ	-.45														
42	DL + 0.6(0.75WLX + 0.2...		Y		DL	1	WLX	.45	WLZ	-.15														
43																								
44	DL + 0.7DLi + 0.7WLXi		Y		DL	1	OL1	.7	WL...	.7														
45	DL + 0.7DLi + 0.7(0.75W...		Y		DL	1	OL1	.7	WL...	.525	W...	.175												
46	DL + 0.7DLi + 0.7(0.25W...		Y		DL	1	OL1	.7	WL...	.175	W...	.525												
47	DL + 0.7DLi + 0.7WLZi		Y		DL	1	OL1	.7	WL...	.7														
48	DL + 0.7DLi + 0.7(0.25W...		Y		DL	1	OL1	.7	WL...	-.1...	W...	.525												
49	DL + 0.7DLi + 0.7(0.75W...		Y		DL	1	OL1	.7	WL...	-.5...	W...	.175												
50	DL + 0.7DLi + 0.7WL-Xi		Y		DL	1	OL1	.7	WL...	-.7														
51	DL + 0.7DLi + 0.7(0.75W...		Y		DL	1	OL1	.7	WL...	-.5...	W...	-.1...												
52	DL + 0.7DLi + 0.7(0.25W...		Y		DL	1	OL1	.7	WL...	-.1...	W...	-.5...												
53	DL + 0.7DLi + 0.7WL-Zi		Y		DL	1	OL1	.7	WL...	-.7														
54	DL + 0.7DLi + 0.7(0.25W...		Y		DL	1	OL1	.7	WL...	.175	W...	-.5...												
55	DL + 0.7DLi + 0.7(0.75W...		Y		DL	1	OL1	.7	WL...	.525	W...	-.1...												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	1	max	887.89	3	449.34	16	538.23	6	0	1	0	1	0	1
2		min	-887.89	9	182.18	3	-538.23	12	0	1	0	1	0	1
3	3	max	464.19	9	43.48	16	254.53	12	0	1	0	1	0	1
4		min	-464.19	3	16.68	3	-254.53	6	0	1	0	1	0	1
5	7	max	393.22	3	375.58	16	366.64	6	0	1	0	1	0	1
6		min	-393.22	9	184.91	3	-366.64	12	0	1	0	1	0	1
7	9	max	109.52	9	59.22	16	111.94	12	0	1	0	1	0	1
8		min	-109.52	3	26.43	3	-111.94	6	0	1	0	1	0	1
9	11	max	557.99	3	468.58	16	486.58	6	0	1	0	1	0	1
10		min	-557.99	9	223.31	3	-486.58	12	0	1	0	1	0	1
11	13	max	208.29	9	59.22	16	183.88	12	0	1	0	1	0	1
12		min	-208.29	3	26.43	3	-183.88	6	0	1	0	1	0	1
13	15	max	1381.98	3	503.12	16	1055.52	6	0	1	0	1	0	1
14		min	-1381.98	9	132.26	3	-1055.52	12	0	1	0	1	0	1
15	17	max	759.28	9	43.48	16	563.82	12	0	1	0	1	0	1
16		min	-759.28	3	16.68	3	-563.82	6	0	1	0	1	0	1
17	23	max	2498.41	3	992.83	16	1114.74	6	0	1	0	1	0	1
18		min	-2498.41	9	299.62	3	-1114.74	12	0	1	0	1	0	1
19	25	max	1333.35	9	70.49	16	532.67	12	0	1	0	1	0	1
20		min	-1333.35	3	32.52	3	-532.67	6	0	1	0	1	0	1
21	Totals:	max	2844.87	3	3065.36	16	1914.87	6						
22		min	-2844.87	9	1141.02	3	-1914.87	12						

Joint Reactions

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
1	1	1	0	212.54	0	0	0	0
2	1	3	0	19.46	0	0	0	0
3	1	7	0	215.73	0	0	0	0
4	1	9	0	30.84	0	0	0	0
5	1	11	0	260.53	0	0	0	0
6	1	13	0	30.84	0	0	0	0
7	1	15	0	154.3	0	0	0	0
8	1	17	0	19.46	0	0	0	0
9	1	23	0	349.56	0	0	0	0
10	1	25	0	37.94	0	0	0	0
11	1	Totals:	0	1331.19	0			
12	1	COG (in):	X: 0	Y: 27.1	Z: -70.47			
13	3	1	887.89	182.18	0	0	0	0
14	3	3	-464.19	16.68	0	0	0	0
15	3	7	393.22	184.91	0	0	0	0
16	3	9	-109.52	26.43	0	0	0	0
17	3	11	557.99	223.31	0	0	0	0
18	3	13	-208.29	26.43	0	0	0	0
19	3	15	1381.98	132.26	0	0	0	0
20	3	17	-759.28	16.68	0	0	0	0
21	3	23	2498.41	299.62	0	0	0	0
22	3	25	-1333.35	32.52	0	0	0	0
23	3	Totals:	2844.87	1141.02	0			
24	3	COG (in):	X: 0	Y: 27.1	Z: -70.47			
25	4	1	665.91	182.18	134.56	0	0	0
26	4	3	-348.14	16.68	-63.63	0	0	0
27	4	7	294.91	184.91	91.66	0	0	0
28	4	9	-82.14	26.43	-27.98	0	0	0
29	4	11	418.49	223.31	121.65	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
30	4	13	-156.21	26.43	-45.97	0	0	0
31	4	15	1036.49	132.26	263.88	0	0	0
32	4	17	-569.46	16.68	-140.96	0	0	0
33	4	23	1873.81	299.62	278.68	0	0	0
34	4	25	-1000.01	32.52	-133.17	0	0	0
35	4	Totals:	2133.65	1141.02	478.72			
36	4	COG (in):	X: 0	Y: 27.1	Z: -70.47			
37	5	1	221.97	182.18	403.67	0	0	0
38	5	3	-116.05	16.68	-190.9	0	0	0
39	5	7	98.3	184.91	274.98	0	0	0
40	5	9	-27.38	26.43	-83.95	0	0	0
41	5	11	139.5	223.31	364.94	0	0	0
42	5	13	-52.07	26.43	-137.91	0	0	0
43	5	15	345.5	132.26	791.64	0	0	0
44	5	17	-189.82	16.68	-422.87	0	0	0
45	5	23	624.6	299.62	836.05	0	0	0
46	5	25	-333.34	32.52	-399.5	0	0	0
47	5	Totals:	711.22	1141.02	1436.15			
48	5	COG (in):	X: 0	Y: 27.1	Z: -70.47			
49	6	1	0	182.18	538.23	0	0	0
50	6	3	0	16.68	-254.53	0	0	0
51	6	7	0	184.91	366.64	0	0	0
52	6	9	0	26.43	-111.94	0	0	0
53	6	11	0	223.31	486.58	0	0	0
54	6	13	0	26.43	-183.88	0	0	0
55	6	15	0	132.26	1055.52	0	0	0
56	6	17	0	16.68	-563.82	0	0	0
57	6	23	0	299.62	1114.74	0	0	0
58	6	25	0	32.52	-532.67	0	0	0
59	6	Totals:	0	1141.02	1914.87			
60	6	COG (in):	X: 0	Y: 27.1	Z: -70.47			
61	7	1	-221.97	182.18	403.67	0	0	0
62	7	3	116.05	16.68	-190.9	0	0	0
63	7	7	-98.3	184.91	274.98	0	0	0
64	7	9	27.38	26.43	-83.95	0	0	0
65	7	11	-139.5	223.31	364.94	0	0	0
66	7	13	52.07	26.43	-137.91	0	0	0
67	7	15	-345.5	132.26	791.64	0	0	0
68	7	17	189.82	16.68	-422.87	0	0	0
69	7	23	-624.6	299.62	836.05	0	0	0
70	7	25	333.34	32.52	-399.5	0	0	0
71	7	Totals:	-711.22	1141.02	1436.15			
72	7	COG (in):	X: 0	Y: 27.1	Z: -70.47			
73	8	1	-665.91	182.18	134.56	0	0	0
74	8	3	348.14	16.68	-63.63	0	0	0
75	8	7	-294.91	184.91	91.66	0	0	0
76	8	9	82.14	26.43	-27.98	0	0	0
77	8	11	-418.49	223.31	121.65	0	0	0
78	8	13	156.21	26.43	-45.97	0	0	0
79	8	15	-1036.49	132.26	263.88	0	0	0
80	8	17	569.46	16.68	-140.96	0	0	0
81	8	23	-1873.81	299.62	278.68	0	0	0
82	8	25	1000.01	32.52	-133.17	0	0	0
83	8	Totals:	-2133.65	1141.02	478.72			
84	8	COG (in):	X: 0	Y: 27.1	Z: -70.47			
85	9	1	-887.89	182.18	0	0	0	0
86	9	3	464.19	16.68	0	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
87	9	7	-393.22	184.91	0	0	0	0
88	9	9	109.52	26.43	0	0	0	0
89	9	11	-557.99	223.31	0	0	0	0
90	9	13	208.29	26.43	0	0	0	0
91	9	15	-1381.98	132.26	0	0	0	0
92	9	17	759.28	16.68	0	0	0	0
93	9	23	-2498.41	299.62	0	0	0	0
94	9	25	1333.35	32.52	0	0	0	0
95	9	Totals:	-2844.87	1141.02	0			
96	9	COG (in):	X: 0	Y: 27.1	Z: -70.47			
97	10	1	-665.91	182.18	-134.56	0	0	0
98	10	3	348.14	16.68	63.63	0	0	0
99	10	7	-294.91	184.91	-91.66	0	0	0
100	10	9	82.14	26.43	27.98	0	0	0
101	10	11	-418.49	223.31	-121.65	0	0	0
102	10	13	156.21	26.43	45.97	0	0	0
103	10	15	-1036.49	132.26	-263.88	0	0	0
104	10	17	569.46	16.68	140.96	0	0	0
105	10	23	-1873.81	299.62	-278.68	0	0	0
106	10	25	1000.01	32.52	133.17	0	0	0
107	10	Totals:	-2133.65	1141.02	-478.72			
108	10	COG (in):	X: 0	Y: 27.1	Z: -70.47			
109	11	1	-221.97	182.18	-403.67	0	0	0
110	11	3	116.05	16.68	190.9	0	0	0
111	11	7	-98.3	184.91	-274.98	0	0	0
112	11	9	27.38	26.43	83.95	0	0	0
113	11	11	-139.5	223.31	-364.94	0	0	0
114	11	13	52.07	26.43	137.91	0	0	0
115	11	15	-345.5	132.26	-791.64	0	0	0
116	11	17	189.82	16.68	422.87	0	0	0
117	11	23	-624.6	299.62	-836.05	0	0	0
118	11	25	333.34	32.52	399.5	0	0	0
119	11	Totals:	-711.22	1141.02	-1436.15			
120	11	COG (in):	X: 0	Y: 27.1	Z: -70.47			
121	12	1	0	182.18	-538.23	0	0	0
122	12	3	0	16.68	254.53	0	0	0
123	12	7	0	184.91	-366.64	0	0	0
124	12	9	0	26.43	111.94	0	0	0
125	12	11	0	223.31	-486.58	0	0	0
126	12	13	0	26.43	183.88	0	0	0
127	12	15	0	132.26	-1055.52	0	0	0
128	12	17	0	16.68	563.82	0	0	0
129	12	23	0	299.62	-1114.74	0	0	0
130	12	25	0	32.52	532.67	0	0	0
131	12	Totals:	0	1141.02	-1914.87			
132	12	COG (in):	X: 0	Y: 27.1	Z: -70.47			
133	13	1	221.97	182.18	-403.67	0	0	0
134	13	3	-116.05	16.68	190.9	0	0	0
135	13	7	98.3	184.91	-274.98	0	0	0
136	13	9	-27.38	26.43	83.95	0	0	0
137	13	11	139.5	223.31	-364.94	0	0	0
138	13	13	-52.07	26.43	137.91	0	0	0
139	13	15	345.5	132.26	-791.64	0	0	0
140	13	17	-189.82	16.68	422.87	0	0	0
141	13	23	624.6	299.62	-836.05	0	0	0
142	13	25	-333.34	32.52	399.5	0	0	0
143	13	Totals:	711.22	1141.02	-1436.15			

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
144	13	COG (in):	X: 0	Y: 27.1	Z: -70.47			
145	14	1	665.91	182.18	-134.56	0	0	0
146	14	3	-348.14	16.68	63.63	0	0	0
147	14	7	294.91	184.91	-91.66	0	0	0
148	14	9	-82.14	26.43	27.98	0	0	0
149	14	11	418.49	223.31	-121.65	0	0	0
150	14	13	-156.21	26.43	45.97	0	0	0
151	14	15	1036.49	132.26	-263.88	0	0	0
152	14	17	-569.46	16.68	140.96	0	0	0
153	14	23	1873.81	299.62	-278.68	0	0	0
154	14	25	-1000.01	32.52	133.17	0	0	0
155	14	Totals:	2133.65	1141.02	-478.72			
156	14	COG (in):	X: 0	Y: 27.1	Z: -70.47			
157	16	1	165.56	449.34	0	0	0	0
158	16	3	-78.19	43.48	0	0	0	0
159	16	7	110.01	375.58	0	0	0	0
160	16	9	-36.65	59.22	0	0	0	0
161	16	11	135.41	468.58	0	0	0	0
162	16	13	-52.05	59.22	0	0	0	0
163	16	15	219.08	503.12	0	0	0	0
164	16	17	-110.71	43.48	0	0	0	0
165	16	23	343.94	992.83	0	0	0	0
166	16	25	-173.83	70.49	0	0	0	0
167	16	Totals:	522.56	3065.36	0			
168	16	COG (in):	X: 0	Y: 34.47	Z: -74.72			
169	17	1	124.17	449.34	32.55	0	0	0
170	17	3	-58.64	43.48	-14.21	0	0	0
171	17	7	82.51	375.58	26.82	0	0	0
172	17	9	-27.49	59.22	-9.22	0	0	0
173	17	11	101.56	468.58	31.91	0	0	0
174	17	13	-39.04	59.22	-12.32	0	0	0
175	17	15	164.31	503.12	46.54	0	0	0
176	17	17	-83.03	43.48	-22.7	0	0	0
177	17	23	257.95	992.83	46.27	0	0	0
178	17	25	-130.38	70.49	-20.68	0	0	0
179	17	Totals:	391.92	3065.36	104.95			
180	17	COG (in):	X: 0	Y: 34.47	Z: -74.72			
181	18	1	41.39	449.34	97.65	0	0	0
182	18	3	-19.55	43.48	-42.63	0	0	0
183	18	7	27.5	375.58	80.45	0	0	0
184	18	9	-9.16	59.22	-27.67	0	0	0
185	18	11	33.85	468.58	95.74	0	0	0
186	18	13	-13.01	59.22	-36.97	0	0	0
187	18	15	54.77	503.12	139.63	0	0	0
188	18	17	-27.68	43.48	-68.1	0	0	0
189	18	23	85.98	992.83	138.82	0	0	0
190	18	25	-43.46	70.49	-62.05	0	0	0
191	18	Totals:	130.64	3065.36	314.86			
192	18	COG (in):	X: 0	Y: 34.47	Z: -74.72			
193	19	1	0	449.34	130.2	0	0	0
194	19	3	0	43.48	-56.84	0	0	0
195	19	7	0	375.58	107.26	0	0	0
196	19	9	0	59.22	-36.9	0	0	0
197	19	11	0	468.58	127.65	0	0	0
198	19	13	0	59.22	-49.29	0	0	0
199	19	15	0	503.12	186.17	0	0	0
200	19	17	0	43.48	-90.8	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
201	19	23	0	992.83	185.1	0	0	0
202	19	25	0	70.49	-82.73	0	0	0
203	19	Totals:	0	3065.36	419.82			
204	19	COG (in):	X: 0	Y: 34.47	Z: -74.72			
205	20	1	-41.39	449.34	97.65	0	0	0
206	20	3	19.55	43.48	-42.63	0	0	0
207	20	7	-27.5	375.58	80.45	0	0	0
208	20	9	9.16	59.22	-27.67	0	0	0
209	20	11	-33.85	468.58	95.74	0	0	0
210	20	13	13.01	59.22	-36.97	0	0	0
211	20	15	-54.77	503.12	139.63	0	0	0
212	20	17	27.68	43.48	-68.1	0	0	0
213	20	23	-85.98	992.83	138.82	0	0	0
214	20	25	43.46	70.49	-62.05	0	0	0
215	20	Totals:	-130.64	3065.36	314.86			
216	20	COG (in):	X: 0	Y: 34.47	Z: -74.72			
217	21	1	-124.17	449.34	32.55	0	0	0
218	21	3	58.64	43.48	-14.21	0	0	0
219	21	7	-82.51	375.58	26.82	0	0	0
220	21	9	27.49	59.22	-9.22	0	0	0
221	21	11	-101.56	468.58	31.91	0	0	0
222	21	13	39.04	59.22	-12.32	0	0	0
223	21	15	-164.31	503.12	46.54	0	0	0
224	21	17	83.03	43.48	-22.7	0	0	0
225	21	23	-257.95	992.83	46.27	0	0	0
226	21	25	130.38	70.49	-20.68	0	0	0
227	21	Totals:	-391.92	3065.36	104.95			
228	21	COG (in):	X: 0	Y: 34.47	Z: -74.72			
229	22	1	-165.56	449.34	0	0	0	0
230	22	3	78.19	43.48	0	0	0	0
231	22	7	-110.01	375.58	0	0	0	0
232	22	9	36.65	59.22	0	0	0	0
233	22	11	-135.41	468.58	0	0	0	0
234	22	13	52.05	59.22	0	0	0	0
235	22	15	-219.08	503.12	0	0	0	0
236	22	17	110.71	43.48	0	0	0	0
237	22	23	-343.94	992.83	0	0	0	0
238	22	25	173.83	70.49	0	0	0	0
239	22	Totals:	-522.56	3065.36	0			
240	22	COG (in):	X: 0	Y: 34.47	Z: -74.72			
241	23	1	-124.17	449.34	-32.55	0	0	0
242	23	3	58.64	43.48	14.21	0	0	0
243	23	7	-82.51	375.58	-26.82	0	0	0
244	23	9	27.49	59.22	9.22	0	0	0
245	23	11	-101.56	468.58	-31.91	0	0	0
246	23	13	39.04	59.22	12.32	0	0	0
247	23	15	-164.31	503.12	-46.54	0	0	0
248	23	17	83.03	43.48	22.7	0	0	0
249	23	23	-257.95	992.83	-46.27	0	0	0
250	23	25	130.38	70.49	20.68	0	0	0
251	23	Totals:	-391.92	3065.36	-104.95			
252	23	COG (in):	X: 0	Y: 34.47	Z: -74.72			
253	24	1	-41.39	449.34	-97.65	0	0	0
254	24	3	19.55	43.48	42.63	0	0	0
255	24	7	-27.5	375.58	-80.45	0	0	0
256	24	9	9.16	59.22	27.67	0	0	0
257	24	11	-33.85	468.58	-95.74	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
258	24	13	13.01	59.22	36.97	0	0	0
259	24	15	-54.77	503.12	-139.63	0	0	0
260	24	17	27.68	43.48	68.1	0	0	0
261	24	23	-85.98	992.83	-138.82	0	0	0
262	24	25	43.46	70.49	62.05	0	0	0
263	24	Totals:	-130.64	3065.36	-314.86			
264	24	COG (in):	X: 0	Y: 34.47	Z: -74.72			
265	25	1	0	449.34	-130.2	0	0	0
266	25	3	0	43.48	56.84	0	0	0
267	25	7	0	375.58	-107.26	0	0	0
268	25	9	0	59.22	36.9	0	0	0
269	25	11	0	468.58	-127.65	0	0	0
270	25	13	0	59.22	49.29	0	0	0
271	25	15	0	503.12	-186.17	0	0	0
272	25	17	0	43.48	90.8	0	0	0
273	25	23	0	992.83	-185.1	0	0	0
274	25	25	0	70.49	82.73	0	0	0
275	25	Totals:	0	3065.36	-419.82			
276	25	COG (in):	X: 0	Y: 34.47	Z: -74.72			
277	26	1	41.39	449.34	-97.65	0	0	0
278	26	3	-19.55	43.48	42.63	0	0	0
279	26	7	27.5	375.58	-80.45	0	0	0
280	26	9	-9.16	59.22	27.67	0	0	0
281	26	11	33.85	468.58	-95.74	0	0	0
282	26	13	-13.01	59.22	36.97	0	0	0
283	26	15	54.77	503.12	-139.63	0	0	0
284	26	17	-27.68	43.48	68.1	0	0	0
285	26	23	85.98	992.83	-138.82	0	0	0
286	26	25	-43.46	70.49	62.05	0	0	0
287	26	Totals:	130.64	3065.36	-314.86			
288	26	COG (in):	X: 0	Y: 34.47	Z: -74.72			
289	27	1	124.17	449.34	-32.55	0	0	0
290	27	3	-58.64	43.48	14.21	0	0	0
291	27	7	82.51	375.58	-26.82	0	0	0
292	27	9	-27.49	59.22	9.22	0	0	0
293	27	11	101.56	468.58	-31.91	0	0	0
294	27	13	-39.04	59.22	12.32	0	0	0
295	27	15	164.31	503.12	-46.54	0	0	0
296	27	17	-83.03	43.48	22.7	0	0	0
297	27	23	257.95	992.83	-46.27	0	0	0
298	27	25	-130.38	70.49	20.68	0	0	0
299	27	Totals:	391.92	3065.36	-104.95			
300	27	COG (in):	X: 0	Y: 34.47	Z: -74.72			

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Che...	Loc[in]	LC	Shear Check	Loc[i...	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1	M1	PIPE_2.5	.554	111.04	3	.035	111....		3	12179.24	50715	3596.25	3596.25	1.73	H1-1b
2	M2	PIPE_2.5	.169	111.04	6	.017	111....		3	12179.24	50715	3596.25	3596.25	1	H1-1b
3	M3	PIPE_2.5	.279	111.04	3	.024	111....		3	12179.24	50715	3596.25	3596.25	1.75	H1-1b
4	M4	PIPE_2.5	.882	111.04	3	.054	111....		3	12179.24	50715	3596.25	3596.25	1.74	H1-1b
5	M5	PIPE_3.0X	.725	111.04	3	.057	111....		3	31078.06	89145	7638.75	7638.75	1.74	H1-1b

Load Combinations

	Description	S...	PDelta	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL		Y		DL	1.4																		
2																								
3	1.2DL + WLX		Y		DL	1.2	WLX	1																
4	1.2DL + 0.75WLX + 0.25...		Y		DL	1.2	WLX	.75	WLZ	.25														
5	1.2DL + 0.25WLX + 0.75...		Y		DL	1.2	WLX	.25	WLZ	.75														
6	1.2DL + WLZ		Y		DL	1.2	WLZ	1																
7	1.2DL + 0.25WL-X + 0.7...		Y		DL	1.2	WLX	-.25	WLZ	.75														
8	1.2DL + 0.75WL-X + 0.2...		Y		DL	1.2	WLX	-.75	WLZ	.25														
9	1.2DL + WL-X		Y		DL	1.2	WLX	-1																
10	1.2DL + 0.75WL-X + 0.2...		Y		DL	1.2	WLX	-.75	WLZ	-.25														
11	1.2DL + 0.25WL-X + 0.7...		Y		DL	1.2	WLX	-.25	WLZ	-.75														
12	1.2DL + WL-Z		Y		DL	1.2	WLZ	-1																
13	1.2DL + 0.25WLX + 0.75...		Y		DL	1.2	WLX	.25	WLZ	-.75														
14	1.2DL + 0.75WLX + 0.25...		Y		DL	1.2	WLX	.75	WLZ	-.25														
15																								
16	1.2DL + DLi + WLXi		Y		DL	1.2	OL1	1	WL...	1														
17	1.2DL + DLi + 0.75WLXi ...		Y		DL	1.2	OL1	1	WL...	.75	W...	.25												
18	1.2DL + DLi + 0.25WLXi ...		Y		DL	1.2	OL1	1	WL...	.25	W...	.75												
19	1.2DL + DLi + WLZi		Y		DL	1.2	OL1	1	WL...	1														
20	1.2DL + DLi + 0.25WL-Xi...		Y		DL	1.2	OL1	1	WL...	-.25	W...	.75												
21	1.2DL + DLi + 0.75WL-Xi...		Y		DL	1.2	OL1	1	WL...	-.75	W...	.25												
22	1.2DL + DLi + WL-Xi		Y		DL	1.2	OL1	1	WL...	-1														
23	1.2DL + DLi + 0.75WL-Xi...		Y		DL	1.2	OL1	1	WL...	-.75	W...	-.25												
24	1.2DL + DLi + 0.25WL-Xi...		Y		DL	1.2	OL1	1	WL...	-.25	W...	-.75												
25	1.2DL + DLi + WL-Zi		Y		DL	1.2	OL1	1	WL...	-1														
26	1.2DL + DLi + 0.25WLXi ...		Y		DL	1.2	OL1	1	WL...	.25	W...	-.75												
27	1.2DL + DLi + 0.75WLXi ...		Y		DL	1.2	OL1	1	WL...	.75	W...	-.25												
28																								
29	DL	Yes	Y		DL	1																		
30																								
31	DL + 0.6WLX	Yes	Y		DL	1	WLX	.6																
32	DL + 0.6(.75WLX + 0.25...	Yes	Y		DL	1	WLX	.45	WLZ	.15														
33	DL + 0.6(0.25WLX + 0.7...	Yes	Y		DL	1	WLX	.15	WLZ	.45														
34	DL + 0.6WLZ	Yes	Y		DL	1	WLZ	.6																
35	DL + 0.6(0.25WL-X + 0.7...	Yes	Y		DL	1	WLX	-.15	WLZ	.45														
36	DL + 0.6(0.75WL-X + 0.2...	Yes	Y		DL	1	WLX	-.45	WLZ	.15														
37	DL + 0.6WL-X	Yes	Y		DL	1	WLX	-.6																
38	DL + 0.6(0.75WL-X + 0.2...	Yes	Y		DL	1	WLX	-.45	WLZ	-.15														
39	DL + 0.6(0.25WL-X + 0.7...	Yes	Y		DL	1	WLX	-.15	WLZ	-.45														
40	DL + 0.6WL-Z	Yes	Y		DL	1	WLZ	.6																
41	DL + 0.6(0.25WLX + 0.7...	Yes	Y		DL	1	WLX	.15	WLZ	-.45														
42	DL + 0.6(0.75WLX + 0.2...	Yes	Y		DL	1	WLX	.45	WLZ	-.15														
43																								
44	DL + 0.7DLi + 0.7WLXi	Yes	Y		DL	1	OL1	.7	WL...	.7														
45	DL + 0.7DLi + 0.7(0.75W...	Yes	Y		DL	1	OL1	.7	WL...	.525	W...	.175												
46	DL + 0.7DLi + 0.7(0.25W...	Yes	Y		DL	1	OL1	.7	WL...	.175	W...	.525												
47	DL + 0.7DLi + 0.7WLZi	Yes	Y		DL	1	OL1	.7	WL...	.7														
48	DL + 0.7DLi + 0.7(0.25W...	Yes	Y		DL	1	OL1	.7	WL...	-.1...	W...	.525												
49	DL + 0.7DLi + 0.7(0.75W...	Yes	Y		DL	1	OL1	.7	WL...	-.5...	W...	.175												
50	DL + 0.7DLi + 0.7WL-Xi	Yes	Y		DL	1	OL1	.7	WL...	-.7														
51	DL + 0.7DLi + 0.7(0.75W...	Yes	Y		DL	1	OL1	.7	WL...	-.5...	W...	-.1...												
52	DL + 0.7DLi + 0.7(0.25W...	Yes	Y		DL	1	OL1	.7	WL...	-.1...	W...	-.5...												
53	DL + 0.7DLi + 0.7WL-Zi	Yes	Y		DL	1	OL1	.7	WL...	-.7														
54	DL + 0.7DLi + 0.7(0.25W...	Yes	Y		DL	1	OL1	.7	WL...	.175	W...	-.5...												
55	DL + 0.7DLi + 0.7(0.75W...	Yes	Y		DL	1	OL1	.7	WL...	.525	W...	-.1...												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	1	max	532.12	31	338.83	44	322.58	34	0	29	0	29	0	29
2		min	-532.12	37	151.81	29	-241.94	39	0	29	0	29	0	29
3	3	max	277.9	37	32.66	44	114.27	39	0	29	0	29	0	29
4		min	-277.9	31	13.9	29	-152.36	34	0	29	0	29	0	29
5	7	max	235.86	31	287.56	44	219.91	34	0	29	0	29	0	29
6		min	-235.86	37	154.09	29	-164.94	39	0	29	0	29	0	29
7	9	max	65.64	37	44.98	44	50.32	39	0	29	0	29	0	29
8		min	-65.64	31	22.03	29	-67.09	34	0	29	0	29	0	29
9	11	max	334.61	31	357.78	44	291.79	34	0	29	0	29	0	29
10		min	-334.61	37	186.09	29	-218.84	39	0	29	0	29	0	29
11	13	max	124.79	37	44.98	44	82.62	39	0	29	0	29	0	29
12		min	-124.79	31	22.03	29	-110.17	34	0	29	0	29	0	29
13	15	max	828.5	31	369.82	44	632.8	34	0	29	0	29	0	29
14		min	-828.5	37	110.21	29	-474.6	39	0	29	0	29	0	29
15	17	max	454.88	37	32.66	44	253.33	39	0	29	0	29	0	29
16		min	-454.88	31	13.9	29	-337.78	34	0	29	0	29	0	29
17	23	max	1498.1	31	734.93	44	668.45	34	0	29	0	29	0	29
18		min	-1498.1	37	249.69	29	-501.33	39	0	29	0	29	0	29
19	25	max	799.06	37	53.68	44	239.4	39	0	29	0	29	0	29
20		min	-799.06	31	27.1	29	-319.21	34	0	29	0	29	0	29
21	Totals:	max	1706.92	31	2297.89	44	1148.92	34						
22		min	-1706.92	37	950.85	29	-861.69	39						

Joint Reactions

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
1	29	1	0	151.81	0	0	0	0
2	29	3	0	13.9	0	0	0	0
3	29	7	0	154.09	0	0	0	0
4	29	9	0	22.03	0	0	0	0
5	29	11	0	186.09	0	0	0	0
6	29	13	0	22.03	0	0	0	0
7	29	15	0	110.21	0	0	0	0
8	29	17	0	13.9	0	0	0	0
9	29	23	0	249.69	0	0	0	0
10	29	25	0	27.1	0	0	0	0
11	29	Totals:	0	950.85	0			
12	29	COG (in):	X: 0	Y: 27.1	Z: -70.47			
13	31	1	532.12	151.81	0	0	0	0
14	31	3	-277.9	13.9	0	0	0	0
15	31	7	235.86	154.09	0	0	0	0
16	31	9	-65.64	22.03	0	0	0	0
17	31	11	334.61	186.09	0	0	0	0
18	31	13	-124.79	22.03	0	0	0	0
19	31	15	828.5	110.21	0	0	0	0
20	31	17	-454.88	13.9	0	0	0	0
21	31	23	1498.1	249.69	0	0	0	0
22	31	25	-799.06	27.1	0	0	0	0
23	31	Totals:	1706.92	950.85	0			
24	31	COG (in):	X: 0	Y: 27.1	Z: -70.47			
25	32	1	399.09	151.81	80.65	0	0	0
26	32	3	-208.42	13.9	-38.09	0	0	0
27	32	7	176.9	154.09	54.98	0	0	0
28	32	9	-49.23	22.03	-16.77	0	0	0
29	32	11	250.96	186.09	72.95	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
30	32	13	-93.59	22.03	-27.54	0	0	0
31	32	15	621.38	110.21	158.2	0	0	0
32	32	17	-341.16	13.9	-84.44	0	0	0
33	32	23	1123.57	249.69	167.11	0	0	0
34	32	25	-599.29	27.1	-79.8	0	0	0
35	32	Totals:	1280.19	950.85	287.23			
36	32	COG (in):	X: 0	Y: 27.1	Z: -70.47			
37	33	1	133.03	151.81	241.94	0	0	0
38	33	3	-69.47	13.9	-114.27	0	0	0
39	33	7	58.97	154.09	164.94	0	0	0
40	33	9	-16.41	22.03	-50.32	0	0	0
41	33	11	83.65	186.09	218.84	0	0	0
42	33	13	-31.2	22.03	-82.62	0	0	0
43	33	15	207.13	110.21	474.6	0	0	0
44	33	17	-113.72	13.9	-253.33	0	0	0
45	33	23	374.52	249.69	501.33	0	0	0
46	33	25	-199.76	27.1	-239.4	0	0	0
47	33	Totals:	426.73	950.85	861.69			
48	33	COG (in):	X: 0	Y: 27.1	Z: -70.47			
49	34	1	0	151.81	322.58	0	0	0
50	34	3	0	13.9	-152.36	0	0	0
51	34	7	0	154.09	219.91	0	0	0
52	34	9	0	22.03	-67.09	0	0	0
53	34	11	0	186.09	291.79	0	0	0
54	34	13	0	22.03	-110.17	0	0	0
55	34	15	0	110.21	632.8	0	0	0
56	34	17	0	13.9	-337.78	0	0	0
57	34	23	0	249.69	668.45	0	0	0
58	34	25	0	27.1	-319.21	0	0	0
59	34	Totals:	0	950.85	1148.92			
60	34	COG (in):	X: 0	Y: 27.1	Z: -70.47			
61	35	1	-133.03	151.81	241.94	0	0	0
62	35	3	69.47	13.9	-114.27	0	0	0
63	35	7	-58.97	154.09	164.94	0	0	0
64	35	9	16.41	22.03	-50.32	0	0	0
65	35	11	-83.65	186.09	218.84	0	0	0
66	35	13	31.2	22.03	-82.62	0	0	0
67	35	15	-207.13	110.21	474.6	0	0	0
68	35	17	113.72	13.9	-253.33	0	0	0
69	35	23	-374.52	249.69	501.33	0	0	0
70	35	25	199.76	27.1	-239.4	0	0	0
71	35	Totals:	-426.73	950.85	861.69			
72	35	COG (in):	X: 0	Y: 27.1	Z: -70.47			
73	36	1	-399.09	151.81	80.65	0	0	0
74	36	3	208.42	13.9	-38.09	0	0	0
75	36	7	-176.9	154.09	54.98	0	0	0
76	36	9	49.23	22.03	-16.77	0	0	0
77	36	11	-250.96	186.09	72.95	0	0	0
78	36	13	93.59	22.03	-27.54	0	0	0
79	36	15	-621.38	110.21	158.2	0	0	0
80	36	17	341.16	13.9	-84.44	0	0	0
81	36	23	-1123.57	249.69	167.11	0	0	0
82	36	25	599.29	27.1	-79.8	0	0	0
83	36	Totals:	-1280.19	950.85	287.23			
84	36	COG (in):	X: 0	Y: 27.1	Z: -70.47			
85	37	1	-532.12	151.81	0	0	0	0
86	37	3	277.9	13.9	0	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
87	37	7	-235.86	154.09	0	0	0	0
88	37	9	65.64	22.03	0	0	0	0
89	37	11	-334.61	186.09	0	0	0	0
90	37	13	124.79	22.03	0	0	0	0
91	37	15	-828.5	110.21	0	0	0	0
92	37	17	454.88	13.9	0	0	0	0
93	37	23	-1498.1	249.69	0	0	0	0
94	37	25	799.06	27.1	0	0	0	0
95	37	Totals:	-1706.92	950.85	0			
96	37	COG (in):	X: 0	Y: 27.1	Z: -70.47			
97	38	1	-399.09	151.81	-80.65	0	0	0
98	38	3	208.42	13.9	38.09	0	0	0
99	38	7	-176.9	154.09	-54.98	0	0	0
100	38	9	49.23	22.03	16.77	0	0	0
101	38	11	-250.96	186.09	-72.95	0	0	0
102	38	13	93.59	22.03	27.54	0	0	0
103	38	15	-621.38	110.21	-158.2	0	0	0
104	38	17	341.16	13.9	84.44	0	0	0
105	38	23	-1123.57	249.69	-167.11	0	0	0
106	38	25	599.29	27.1	79.8	0	0	0
107	38	Totals:	-1280.19	950.85	-287.23			
108	38	COG (in):	X: 0	Y: 27.1	Z: -70.47			
109	39	1	-133.03	151.81	-241.94	0	0	0
110	39	3	69.47	13.9	114.27	0	0	0
111	39	7	-58.97	154.09	-164.94	0	0	0
112	39	9	16.41	22.03	50.32	0	0	0
113	39	11	-83.65	186.09	-218.84	0	0	0
114	39	13	31.2	22.03	82.62	0	0	0
115	39	15	-207.13	110.21	-474.6	0	0	0
116	39	17	113.72	13.9	253.33	0	0	0
117	39	23	-374.52	249.69	-501.33	0	0	0
118	39	25	199.76	27.1	239.4	0	0	0
119	39	Totals:	-426.73	950.85	-861.69			
120	39	COG (in):	X: 0	Y: 27.1	Z: -70.47			
121	40	1	0	151.81	322.58	0	0	0
122	40	3	0	13.9	-152.36	0	0	0
123	40	7	0	154.09	219.91	0	0	0
124	40	9	0	22.03	-67.09	0	0	0
125	40	11	0	186.09	291.79	0	0	0
126	40	13	0	22.03	-110.17	0	0	0
127	40	15	0	110.21	632.8	0	0	0
128	40	17	0	13.9	-337.78	0	0	0
129	40	23	0	249.69	668.45	0	0	0
130	40	25	0	27.1	-319.21	0	0	0
131	40	Totals:	0	950.85	1148.92			
132	40	COG (in):	X: 0	Y: 27.1	Z: -70.47			
133	41	1	133.03	151.81	-241.94	0	0	0
134	41	3	-69.47	13.9	114.27	0	0	0
135	41	7	58.97	154.09	-164.94	0	0	0
136	41	9	-16.41	22.03	50.32	0	0	0
137	41	11	83.65	186.09	-218.84	0	0	0
138	41	13	-31.2	22.03	82.62	0	0	0
139	41	15	207.13	110.21	-474.6	0	0	0
140	41	17	-113.72	13.9	253.33	0	0	0
141	41	23	374.52	249.69	-501.33	0	0	0
142	41	25	-199.76	27.1	239.4	0	0	0
143	41	Totals:	426.73	950.85	-861.69			

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
144	41	COG (in):	X: 0	Y: 27.1	Z: -70.47			
145	42	1	399.09	151.81	-80.65	0	0	0
146	42	3	-208.42	13.9	38.09	0	0	0
147	42	7	176.9	154.09	-54.98	0	0	0
148	42	9	-49.23	22.03	16.77	0	0	0
149	42	11	250.96	186.09	-72.95	0	0	0
150	42	13	-93.59	22.03	27.54	0	0	0
151	42	15	621.38	110.21	-158.2	0	0	0
152	42	17	-341.16	13.9	84.44	0	0	0
153	42	23	1123.57	249.69	-167.11	0	0	0
154	42	25	-599.29	27.1	79.8	0	0	0
155	42	Totals:	1280.19	950.85	-287.23			
156	42	COG (in):	X: 0	Y: 27.1	Z: -70.47			
157	44	1	115.42	338.83	0	0	0	0
158	44	3	-54.27	32.66	0	0	0	0
159	44	7	76.91	287.56	0	0	0	0
160	44	9	-25.55	44.98	0	0	0	0
161	44	11	94.58	357.78	0	0	0	0
162	44	13	-36.23	44.98	0	0	0	0
163	44	15	152.56	369.82	0	0	0	0
164	44	17	-76.71	32.66	0	0	0	0
165	44	23	239.94	734.93	0	0	0	0
166	44	25	-120.87	53.68	0	0	0	0
167	44	Totals:	365.79	2297.89	0			
168	44	COG (in):	X: 0	Y: 33.98	Z: -74.44			
169	45	1	86.56	338.83	22.7	0	0	0
170	45	3	-40.7	32.66	-9.86	0	0	0
171	45	7	57.68	287.56	18.75	0	0	0
172	45	9	-19.16	44.98	-6.43	0	0	0
173	45	11	70.94	357.78	22.29	0	0	0
174	45	13	-27.17	44.98	-8.58	0	0	0
175	45	15	114.42	369.82	32.41	0	0	0
176	45	17	-57.53	32.66	-15.73	0	0	0
177	45	23	179.96	734.93	32.29	0	0	0
178	45	25	-90.65	53.68	-14.38	0	0	0
179	45	Totals:	274.34	2297.89	73.47			
180	45	COG (in):	X: 0	Y: 33.98	Z: -74.44			
181	46	1	28.85	338.83	68.09	0	0	0
182	46	3	-13.57	32.66	-29.57	0	0	0
183	46	7	19.23	287.56	56.24	0	0	0
184	46	9	-6.39	44.98	-19.3	0	0	0
185	46	11	23.65	357.78	66.87	0	0	0
186	46	13	-9.06	44.98	-25.73	0	0	0
187	46	15	38.14	369.82	97.24	0	0	0
188	46	17	-19.18	32.66	-47.18	0	0	0
189	46	23	59.99	734.93	96.87	0	0	0
190	46	25	-30.22	53.68	-43.13	0	0	0
191	46	Totals:	91.45	2297.89	220.4			
192	46	COG (in):	X: 0	Y: 33.98	Z: -74.44			
193	47	1	0	338.83	90.79	0	0	0
194	47	3	0	32.66	-39.43	0	0	0
195	47	7	0	287.56	74.98	0	0	0
196	47	9	0	44.98	-25.73	0	0	0
197	47	11	0	357.78	89.16	0	0	0
198	47	13	0	44.98	-34.3	0	0	0
199	47	15	0	369.82	129.66	0	0	0
200	47	17	0	32.66	-62.9	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
201	47	23	0	734.93	129.16	0	0	0
202	47	25	0	53.68	-57.5	0	0	0
203	47	Totals:	0	2297.89	293.87			
204	47	COG (in):	X: 0	Y: 33.98	Z: -74.44			
205	48	1	-28.85	338.83	68.09	0	0	0
206	48	3	13.57	32.66	-29.57	0	0	0
207	48	7	-19.23	287.56	56.24	0	0	0
208	48	9	6.39	44.98	-19.3	0	0	0
209	48	11	-23.65	357.78	66.87	0	0	0
210	48	13	9.06	44.98	-25.73	0	0	0
211	48	15	-38.14	369.82	97.24	0	0	0
212	48	17	19.18	32.66	-47.18	0	0	0
213	48	23	-59.99	734.93	96.87	0	0	0
214	48	25	30.22	53.68	-43.13	0	0	0
215	48	Totals:	-91.45	2297.89	220.4			
216	48	COG (in):	X: 0	Y: 33.98	Z: -74.44			
217	49	1	-86.56	338.83	22.7	0	0	0
218	49	3	40.7	32.66	-9.86	0	0	0
219	49	7	-57.68	287.56	18.75	0	0	0
220	49	9	19.16	44.98	-6.43	0	0	0
221	49	11	-70.94	357.78	22.29	0	0	0
222	49	13	27.17	44.98	-8.58	0	0	0
223	49	15	-114.42	369.82	32.41	0	0	0
224	49	17	57.53	32.66	-15.73	0	0	0
225	49	23	-179.96	734.93	32.29	0	0	0
226	49	25	90.65	53.68	-14.38	0	0	0
227	49	Totals:	-274.34	2297.89	73.47			
228	49	COG (in):	X: 0	Y: 33.98	Z: -74.44			
229	50	1	-115.42	338.83	0	0	0	0
230	50	3	54.27	32.66	0	0	0	0
231	50	7	-76.91	287.56	0	0	0	0
232	50	9	25.55	44.98	0	0	0	0
233	50	11	-94.58	357.78	0	0	0	0
234	50	13	36.23	44.98	0	0	0	0
235	50	15	-152.56	369.82	0	0	0	0
236	50	17	76.71	32.66	0	0	0	0
237	50	23	-239.94	734.93	0	0	0	0
238	50	25	120.87	53.68	0	0	0	0
239	50	Totals:	-365.79	2297.89	0			
240	50	COG (in):	X: 0	Y: 33.98	Z: -74.44			
241	51	1	-86.56	338.83	-22.7	0	0	0
242	51	3	40.7	32.66	9.86	0	0	0
243	51	7	-57.68	287.56	-18.75	0	0	0
244	51	9	19.16	44.98	6.43	0	0	0
245	51	11	-70.94	357.78	-22.29	0	0	0
246	51	13	27.17	44.98	8.58	0	0	0
247	51	15	-114.42	369.82	-32.41	0	0	0
248	51	17	57.53	32.66	15.73	0	0	0
249	51	23	-179.96	734.93	-32.29	0	0	0
250	51	25	90.65	53.68	14.38	0	0	0
251	51	Totals:	-274.34	2297.89	-73.47			
252	51	COG (in):	X: 0	Y: 33.98	Z: -74.44			
253	52	1	-28.85	338.83	-68.09	0	0	0
254	52	3	13.57	32.66	29.57	0	0	0
255	52	7	-19.23	287.56	-56.24	0	0	0
256	52	9	6.39	44.98	19.3	0	0	0
257	52	11	-23.65	357.78	-66.87	0	0	0

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
258	52	13	9.06	44.98	25.73	0	0	0
259	52	15	-38.14	369.82	-97.24	0	0	0
260	52	17	19.18	32.66	47.18	0	0	0
261	52	23	-59.99	734.93	-96.87	0	0	0
262	52	25	30.22	53.68	43.13	0	0	0
263	52	Totals:	-91.45	2297.89	-220.4			
264	52	COG (in):	X: 0	Y: 33.98	Z: -74.44			
265	53	1	0	338.83	-90.79	0	0	0
266	53	3	0	32.66	39.43	0	0	0
267	53	7	0	287.56	-74.98	0	0	0
268	53	9	0	44.98	25.73	0	0	0
269	53	11	0	357.78	-89.16	0	0	0
270	53	13	0	44.98	34.3	0	0	0
271	53	15	0	369.82	-129.66	0	0	0
272	53	17	0	32.66	62.9	0	0	0
273	53	23	0	734.93	-129.16	0	0	0
274	53	25	0	53.68	57.5	0	0	0
275	53	Totals:	0	2297.89	-293.87			
276	53	COG (in):	X: 0	Y: 33.98	Z: -74.44			
277	54	1	28.85	338.83	-68.09	0	0	0
278	54	3	-13.57	32.66	29.57	0	0	0
279	54	7	19.23	287.56	-56.24	0	0	0
280	54	9	-6.39	44.98	19.3	0	0	0
281	54	11	23.65	357.78	-66.87	0	0	0
282	54	13	-9.06	44.98	25.73	0	0	0
283	54	15	38.14	369.82	-97.24	0	0	0
284	54	17	-19.18	32.66	47.18	0	0	0
285	54	23	59.99	734.93	-96.87	0	0	0
286	54	25	-30.22	53.68	43.13	0	0	0
287	54	Totals:	91.45	2297.89	-220.4			
288	54	COG (in):	X: 0	Y: 33.98	Z: -74.44			
289	55	1	86.56	338.83	-22.7	0	0	0
290	55	3	-40.7	32.66	9.86	0	0	0
291	55	7	57.68	287.56	-18.75	0	0	0
292	55	9	-19.16	44.98	6.43	0	0	0
293	55	11	70.94	357.78	-22.29	0	0	0
294	55	13	-27.17	44.98	8.58	0	0	0
295	55	15	114.42	369.82	-32.41	0	0	0
296	55	17	-57.53	32.66	15.73	0	0	0
297	55	23	179.96	734.93	-32.29	0	0	0
298	55	25	-90.65	53.68	14.38	0	0	0
299	55	Totals:	274.34	2297.89	-73.47			
300	55	COG (in):	X: 0	Y: 33.98	Z: -74.44			

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation...	LC	Z Rotation...	LC
1	1	max	0	37	0	29	0	39	2.9e-03	39	0	29	6.75e-03	31
2		min	0	31	0	44	0	34	-3.87e-03	34	0	29	-6.75e-03	37
3	2	max	2.07	37	0	29	.9	39	9.66e-03	39	0	29	2.22e-02	31
4		min	-2.07	31	0	44	-1.2	34	-1.29e-02	34	0	29	-2.22e-02	37
5	3	max	0	31	0	29	0	34	1.86e-03	34	0	29	3.28e-03	37
6		min	0	37	0	44	0	39	-1.4e-03	39	0	29	-3.28e-03	31
7	4	max	.02	37	0	29	0	39	1.86e-03	34	0	29	3.28e-03	37
8		min	-.02	31	0	44	0	34	-1.4e-03	39	0	29	-3.28e-03	31
9	7	max	0	37	0	29	0	39	1.44e-03	39	0	29	1.9e-03	31

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation...	LC	Z Rotation...	LC
10		min	0	31	0	44	0	34	-1.93e-03	34	0	29	-1.9e-03	37
11	8	max	.61	37	0	29	.46	39	5.05e-03	39	0	29	6.7e-03	31
12		min	-.61	31	0	44	-.61	34	-6.73e-03	34	0	29	-6.7e-03	37
13	9	max	0	31	0	29	0	34	9.e-04	34	0	29	8.84e-04	37
14		min	0	37	0	44	0	39	-6.75e-04	39	0	29	-8.84e-04	31
15	10	max	0	37	0	29	0	39	9.e-04	34	0	29	8.84e-04	37
16		min	0	31	0	44	0	34	-6.75e-04	39	0	29	-8.84e-04	31
17	11	max	0	37	0	29	0	39	2.19e-03	39	0	29	3.25e-03	31
18		min	0	31	0	44	0	34	-2.91e-03	34	0	29	-3.25e-03	37
19	12	max	1.02	37	0	29	.69	39	7.43e-03	39	0	29	1.11e-02	31
20		min	-1.02	31	0	44	-.92	34	-9.91e-03	34	0	29	-1.11e-02	37
21	13	max	0	31	0	29	0	34	1.39e-03	34	0	29	1.55e-03	37
22		min	0	37	0	44	0	39	-1.04e-03	39	0	29	-1.55e-03	31
23	14	max	0	37	0	29	0	39	1.39e-03	34	0	29	1.55e-03	37
24		min	0	31	0	44	0	34	-1.04e-03	39	0	29	-1.55e-03	31
25	15	max	0	37	0	29	0	39	6.09e-03	39	0	29	1.08e-02	31
26		min	0	31	0	44	0	34	-8.13e-03	34	0	29	-1.08e-02	37
27	16	max	3.31	37	0	29	1.87	39	1.99e-02	39	0	29	3.52e-02	31
28		min	-3.31	31	0	44	-2.49	34	-2.65e-02	34	0	29	-3.52e-02	37
29	17	max	0	31	0	29	0	34	3.96e-03	34	0	29	5.29e-03	37
30		min	0	37	0	44	0	39	-2.97e-03	39	0	29	-5.29e-03	31
31	18	max	.03	37	0	29	.01	39	3.96e-03	34	0	29	5.29e-03	37
32		min	-.03	31	0	44	-.02	34	-2.97e-03	39	0	29	-5.29e-03	31
33	23	max	0	37	0	29	0	39	2.3e-03	39	0	29	7.38e-03	31
34		min	0	31	0	44	0	34	-3.06e-03	34	0	29	-7.38e-03	37
35	24	max	2.26	37	0	29	.71	39	7.57e-03	39	0	29	2.4e-02	31
36		min	-2.26	31	0	44	-.94	34	-1.01e-02	34	0	29	-2.4e-02	37
37	25	max	0	31	0	29	0	34	1.48e-03	34	0	29	3.59e-03	37
38		min	0	37	0	44	0	39	-1.11e-03	39	0	29	-3.59e-03	31
39	26	max	.02	37	0	29	0	39	1.48e-03	34	0	29	3.59e-03	37
40		min	-.02	31	0	44	0	34	-1.11e-03	39	0	29	-3.59e-03	31

ALL-POINTS TECHNOLOGY CORPORATION

Project ID: CT141_12660
Site Name: East Windsor 2
Date: 8/26/2021

Mounts 1, 2, 4, & 5:

Existing Connection consists of four (4) 3/8" SS Dia welded studs.

T_{allow} =	1616.7	lbs	*(With a safety factor of 3)*
V_{allow} =	1516.7	lbs	
Anchor Quantity =	4.0		

Per RISA Analysis, Max loading occurs at: N15, LC31

T_{max} =	828.5	lbs
V_{max} =	70	lbs

Interaction:

$$\frac{828.5}{6466.667} + \frac{70}{6066.667} = 0.140 < 1.0 \text{ OK}$$

Therefore, the anchors are adequate to support the proposed loading.

Mount 3:

Assume existing connection consists of eight (8) 1/4" Dia welded CD studs.

T_{allow} =	583.3	lbs	*(With a safety factor of 3)*
V_{allow} =	433.3	lbs	
Anchor Quantity =	8.0		

Per RISA Analysis, Max loading occurs at: N23, LC31

T_{max} =	1498.1	lbs
V_{max} =	140	lbs

Interaction:

$$\frac{1498.1}{4666.667} + \frac{140}{3466.667} = 0.361 < 1.0 \text{ OK}$$

Therefore, the anchors are adequate to support the proposed loading.

Appendix C

Global Stability Analysis

Project ID:	CT141LS6_12550
Site Name:	East Windsor 2 CT
Date:	9/24/2021

(Based on AWWA D100-2005)

Site Name:	East Windsor 2 CT
Site Address:	104 Prospect Hill Road East Windsor, CT 06088
Site County:	Hartford

Design Criteria

Ultimate Basic Wind Speed, V_{ULT} =	135	mph	*2018 CSBC, Appendix N*
Nominal Basic Wind Speed, V_{ASD} =	105	mph	*2018 CSBC, Appendix N*
Type of Structure =	Water Tank		
Structure Height =	100	ft, +/-	
Risk Category =	III		
Structure Class =	III	*Section 3.1.4*	
Exposure Category =	C	*Section 2.6.5*	
G_h =	1.00	*Section 3.1.4*	
Importance Factor, I =	1.00	*Section 3.1.4, See note 1.*	
q_z' =	**28.22**	**psf**	

Notes:

1. Since the Risk Category III-IV wind speeds takes into account the importance factor, Importance factor here shall be taken as 1.

ALL-POINTS TECHNOLOGY CORPORATION

Project ID: CT141LS6_12550
Site Name: East Windsor 2 CT
Date: 9/24/2021

(Based on AWWA D100-2005)

Design Criteria: *(From Previous Sheet)*
q_z' = **28.22** **psf**

G_h = 1.00 Section 3.1.4

Description	# / Sector	Elev. z, ft	K_z	C_f	P_w, psf	Dimensions Height, in	Width, in	Depth, in	Wght., lbs	Wind Area, ft² Front	Side	Wind Load, lbs EA Front	Side	Weight, lbs
T-MOBILE:														
AIR 6449 B41	1.0	98.0	1.263	1.0	35.64	33.1	20.5	8.3	103.0	4.72	1.909	168.0	68.0	103
APXVAALL24_43-U-NA20	1.0	98.0	1.263	1.0	35.64	95.9	24.0	8.5	149.9	15.98	5.660	569.5	201.7	149.9
CBC1921Y-DS	1.0	98.0	1.263	1.0	35.64	7.6	13.2	5.4	8.6	0.69	0.284	24.7	10.1	8.6
RRU 4449 B71+B85	1.0	92.0	1.241	1.0	35.03	14.9	13.2	5.4	46.3	1.36	0.558	47.8	19.5	46.3
RRUS 4415 B25	1.0	89.0	1.230	1.0	34.73	15.0	13.2	10.4	75.0	1.38	1.083	47.7	37.6	75
KRY 112 144/2	1.0	98.0	1.263	1.0	35.64	8.6	6.7	3.2	9.7	0.40	0.191	14.2	6.8	9.7
AIR-32 B2A/B66A	1.0	98.0	1.263	1.0	35.64	56.6	12.9	8.7	132.2	5.07	3.422	180.8	122.0	132.2
VERIZON														
SBNHH-1D65B	2.0	87.0	1.223	1.0	34.52	72.9	11.9	7.1	53.0	6.02	3.594	208.0	124.1	53.0
MT6407-77A	1.0	87.0	1.223	1.0	34.52	35.1	16.1	5.5	87.1	3.92	1.341	135.5	46.3	87.1
CBRS RRH w/ CLIP ON ANTENNA	1.0	87.0	1.223	1.0	34.52	16.8	9.6	6.9	32.00	1.12	0.805	38.7	27.8	32.0
B5/B13 700/850 RRH	1.0	82.0	1.205	1.0	34.02	15.0	15.0	8.1	70.3	1.56	0.844	53.1	28.7	70.3
B2/B66 PCS/AWS RRH	1.0	82.0	1.205	1.0	34.02	15.0	15.0	10.0	84.4	1.56	1.039	53.0	35.3	84.4
6 OVP	1.0	82.0	1.205	1.0	34.02	21.6	15.7	10.3	32.0	2.36	1.545	80.1	52.6	32.0
AT&T														
KATHREIN 800-10121	1.0	78.0	1.191	1.0	33.61	96.0	11.9	7.1	72.6	7.93	4.733	266.6	159.1	72.6
CCI TPA-65R-LCUUUU-H8	1.0	78.0	1.191	1.0	33.61	96.0	14.4	8.6	96.6	9.60	5.733	322.6	192.7	96.6
CCI HPA-65R-BUU-H8	1.0	78.0	1.191	1.0	33.61	92.4	14.8	7.4		9.50	4.748	319.2	159.6	0.0
RADIO 4478	1.0	72.0	1.169	1.0	33.00	16.5	13.4	7.7	59.5	1.54	0.882	50.7	29.1	59.5
RRUS-32	1.0	72.0	1.169	1.0	33.00	27.2	12.1	7.0	52.9	2.27	1.323	75.0	43.6	52.9
RRUS-11	1.0	72.0	1.169	1.0	33.00	19.7	17.0	7.2	50.7	2.32	0.980	76.6	32.3	50.7
RRUS-12	1.0	72.0	1.169	1.0	33.00	20.4	18.5	7.5	58.0	2.62	1.063	86.5	35.1	58.0
RRUS-A2	1.0	72.0	1.169	1.0	33.00	16.4	15.1	3.4	22.0	1.72	0.387	56.7	12.8	22.0
LGP 21401	1.0	72.0	1.169	1.0	33.00	14.4	9.2	2.6	14.1	0.92	0.260	30.4	8.6	14.1
RAYCAP DC6-48-60-18-8F	1.0	72.0	1.169	0.6	19.80	17.9	10.2	10.2	28.0	1.27	1.274	25.2	25.2	26.2
SPRINT														
Panel Antenna	1.0	78.0	1.191	1.0	33.61	48.0	16.0	7.1	50	5.33	2.367	179.2	79.5	50.0
RRH	1.0	78.0	1.191	1.0	33.61	27.2	12.1	7.0	52.9	2.27	1.323	76.4	44.5	52.9

ALL-POINTS TECHNOLOGY CORPORATION

Project ID: CT141LS6_12550
Site Name: East Windsor 2 CT
Date: 9/24/2021

(Based on AWWA D100-2005)

Design Criteria: *(From Previous Sheet)*

q_z' = **28.22** **psf**

G_h = 1.00 Section 3.1.4

Description	Elev. z, ft	K_z	C_f	P_w, psf	Dimensions Width, in	Depth, in	Wght., lbs/ft	Length, ft	Area, ft^2	Wind Load, lbs EA
T-MOBILE:										
Mounting Frame	92.0	1.241	0.6	21.02	-	-	-	-	18.3	383.8
VERIZON										
2.5" STD Pipe	85.7	1.219	0.6	20.63	2.875	2.875	5.79	13.6	-	67.2
3.0" XS Pipe	85.7	1.219	0.6	20.63	3.500	3.500	10.30	13.6	-	81.9
AT&T										
2.5" STD Pipe	78.0	1.191	0.6	20.17	2.875	2.875	5.79	6.0	-	29.0
2.0" STD Pipe (Mast)	76.0	1.184	0.6	20.04	2.375	2.375	3.65	12.0	-	47.6
2.0" STD Pipe (Top Horz)	80.0	1.198	0.6	20.29	2.375	2.375	3.65	7.5	-	30.1
2.0" STD Pipe (Bot Horz)	75.0	1.180	0.6	19.98	2.375	2.375	3.65	7.5	-	29.7
SPRINT										
2.5" STD Pipe	78.0	1.191	0.6	20.17	2.875	2.875	5.79	6.0	-	29.0
MISC.:										
Cable Tray	35	1.090	1.0	30.76	6.000	24.000	6.00	80	-	1230.6

EXIST. STRUCTURE:					Dia, ft	Height, ft	Area, ft^2	WL, lbs		WL, kips
Tank (>50')	66.8	1.150	0.6	19.48	65.25	33.50	2185.9	42580.1	*Add 1 % for Misc. Components*	43.0
Tank (<50')	25.0	1.090	0.6	18.46	65.25	50.00	3262.5	60220.8		60.8
Roof	90.6	1.236	0.5	17.44	-		859.6	14995.2		15.1

ALL-POINTS TECHNOLOGY CORPORATION

(Based on AWWA D100-2005)

Project ID: CT141LS6_12550
Site Name: East Windsor 2 CT
Date: 9/24/2021

Description	# / Sector	Elev. z, ft	Alpha / Sector 1 Direction / Shielded?	Reduct. Factor	Wind Load, lbs	Wind Force, lbs	Beta / Sector 2 Direction / Shielded?	Reduct. Factor	Wind Load, lbs	Wind Force, lbs	Gamma / Sector 3 Direction / Shielded?	Reduct. Factor	Wind Load, lbs	Wind Force, lbs	Wind Force, lbs	Wind Moment, lbs-ft
T-MOBILE:																
AIR 6449 B41	1.0	98.0	N / N	1.0	168.0	168.0	N / N	1.0	168.0	168.0	T / N	1.0	68.0	68.0	404.1	39605.4
APXVAALL24_43-U-NA20	1.0	98.0	N / N	1.0	569.5	569.5	N / N	1.0	569.5	569.5	T / N	1.0	201.7	201.7	1340.8	131399.3
CBC1921Y-DS	1.0	98.0	N / N	1.0	24.7	24.7	N / N	1.0	24.7	24.7	T / N	1.0	10.1	10.1	59.5	5831.3
RRU 4449 B71+B85	1.0	92.0	N / N	1.0	47.8	47.8	N / N	1.0	47.8	47.8	T / N	1.0	19.5	19.5	115.1	10590.5
RRUS 4415 B25	1.0	89.0	N / N	1.0	47.7	47.7	N / N	1.0	47.7	47.7	T / N	1.0	37.6	37.6	133.1	11847.6
KRY 112 144/2	1.0	98.0	N / N	1.0	14.2	14.2	N / N	1.0	14.2	14.2	T / N	1.0	6.8	6.8	35.3	3455.8
AIR-32 B2A/B66A	1.0	98.0	N / N	1.0	180.8	180.8	N / N	1.0	180.8	180.8	T / N	1.0	122.0	122.0	483.7	47397.9
Mounting Frames	3.0	92.0	N / P	0.8	383.8	921.1	N / P	0.8	383.8	921.1	T / N	0.8	383.8	921.1	2763.4	254233.4
VERIZON:																
SBNHH-1D65B	2.0	87	T / P	0.5	124.1	124.1	N / Y	0.0	208.0	0.0	T / P	0.5	124.1	124.1	248.2	21591.8
MT6407-77A	1.0	87	T / N	1.0	46.3	46.3	N / Y	0.0	135.5	0.0	T / N	1.0	46.3	46.3	92.6	8053.3
CBRS RRH w/ CLIP ON ANTENNA	1.0	87	T / N	1.0	27.8	27.8	N / Y	0.0	38.7	0.0	T / N	1.0	27.8	27.8	55.6	4835.7
B5/B13 700/850 RRH	1.0	82	T / N	1.0	28.7	28.7	N / Y	0.0	53.1	0.0	T / N	1.0	28.7	28.7	57.4	4706.9
B2/B66 PCS/AWS RRH	1.0	82	T / N	1.0	35.3	35.3	N / Y	0.0	53.0	0.0	T / N	1.0	35.3	35.3	70.7	5795.5
6 OVP	1.0	82	T / N	1.0	52.6	52.6	N / Y	0.0	80.1	0.0	T / N	1.0	52.6	52.6	105.1	8618.9
Exist. Pipes	4.0	85.7	T / N	1.0	67.2	268.9	N / Y	0.0	77.3	0.0	T / N	1.0	77.3	309.2	578.1	49546.7
Prop. Pipe	1.0	85.7	T / N	1.0	94.1	94.1	N / Y	0.0	94.1	0.0	T / N	1.0	94.1	94.1	188.2	16128.7
AT&T:																
KATHREIN 800-10966	1.0	78	N / Y	0.0	306.6	0.0	T / N	1.0	182.9	182.9	N / Y	0.0	306.6	0.0	182.9	14266.2
CCI TPA-65R-LCUUUU-H8	1.0	78	N / Y	0.0	371.0	0.0	T / N	1.0	221.6	221.6	N / Y	0.0	371.0	0.0	221.6	17284.8
CCI HPA-65R-BUU-H8	1.0	78	N / Y	0.0	367.1	0.0	T / N	1.0	183.5	183.5	N / Y	0.0	367.1	0.0	183.5	14313.0
RADIO 4478	1.0	72	N / Y	0.0	65.1	0.0	T / N	1.0	40.1	40.1	N / Y	0.0	65.1	0.0	40.1	2887.2
RRUS-32	1.0	72	N / Y	0.0	87.9	0.0	T / N	1.0	51.1	51.1	N / Y	0.0	87.9	0.0	51.1	3679.2
RRUS-11	1.0	72	N / Y	0.0	89.7	0.0	T / N	1.0	37.9	37.9	N / Y	0.0	89.7	0.0	37.9	2728.8
RRUS-12	1.0	72	N / Y	0.0	101.3	0.0	T / N	1.0	41.1	41.1	N / Y	0.0	101.3	0.0	41.1	2959.2
RRUS-A2	1.0	72	N / Y	0.0	66.5	0.0	T / N	1.0	15.0	15.0	N / Y	0.0	66.5	0.0	15.0	1080.0
LGP21401	1.0	72	N / Y	0.0	12.9	0.0	T / N	1.0	4.3	4.3	N / Y	0.0	12.9	0.0	4.3	309.6
Raycap DC6-48-60-18-8F	1.0	72	N / Y	0.0	32.8	0.0	T / N	1.0	32.8	32.8	N / Y	0.0	32.8	0.0	32.8	2361.6
Pipes	4.0	78	N / Y	0.0	33.3	0.0	T / N	1.0	33.3	133.2	N / Y	0.0	33.3	0.0	133.2	10389.6
New Pipes	1.0	76	N / Y	0.0	123.5	0.0	T / N	1.0	54.7	54.7	N / Y	0.0	123.5	0.0	54.7	4157.2
SPRINT																
Panel Antenna	1.0	78	T / N	1.0	145.6	145.6	N / Y	0.0	206.1	0.0	-	-	-	-	145.6	11358.1
Panel Antenna	1.0	78	T / N	1.0	91.5	91.5	N / Y	0.0	206.1	0.0	-	-	-	-	91.5	7137.0
RRH	1.0	78	T / N	1.0	51.1	51.1	N / Y	0.0	87.9	0.0	-	-	-	-	51.1	3985.8
Pipe	1.0	78	T / N	1.0	33.3	33.3	N / Y	0.0	33.3	0.0	-	-	-	-	33.3	2597.4

Cable Trays:	#	Weight*, psf	Length*, ft	Width*, ft	Depth*, ft	Shielded?	P_w, psf	WL, lbs/ft	Moment Arm, ft	Wind Force, lbs	Wind Moment, lbs-ft
Verizon	1.0	6.0	70.0	2.0	0.5	Y	35.38	0.0	35.0	0.0	0.0
AT&T	1.0	6.0	70.0	2.0	0.5	Y	35.38	0.0	35.0	0.0	0.0
T-Mobile / Sprint	1.0	6.0	70.0	2.0	0.5	N	35.38	17.7	35.0	1238.3	43341

Global Stability Check

		WL, kips	z, ft	Moment, k-ft
Existing Loads:				
Tank		103.8	41.8	4334.9
Tank Roof		15.1	90.5	1370.6
	Total:	**119.0**		**5705.5**
		WL, kips		Moment, k-ft
Antenna/Equip. Loads:				
	Total:	**9.29**		**768.5**

Interaction

Wind Base Shear: Prop.: 9.3 / Exist.: 119.0 = 7.81% < 10%, OK

Wind Base Moment: Prop.: 768.5 / Exist.: 5705.5 = 13.47% < 10%, NG

ALL-POINTS TECHNOLOGY CORPORATION

Project ID: CT141LS6_12550
Site Name: East Windsor 2 CT
Date: 9/24/2021

(Based on AWWA D100-2005)

Resisting Moment due to Self-Weight

TANK WEIGHT: PLATE SIZE / SECTION	#	Thick, in	Height, in	Length, in	Vol., ft3	Wght., lbs EA	Wght., kips tot.
Bottom 1	1.0	0.3125	3421.19		89.1	43655.8	43.656
PL1	1.0	1.302	91.0	2454.17	168.273	82453.6	82.454
PL2	1.0	1.203	91.0	2454.17	155.478	76184.1	76.184
PL3	1.0	1.105	91.0	2454.17	142.812	69977.9	69.978
PL4	1.0	1.006	91.0	2454.17	130.017	63708.4	63.708
PL5	1.0	0.907	91.0	2454.17	117.222	57438.9	57.439
PL6	1.0	0.808	91.0	2454.17	104.427	51169.4	51.169
PL7	1.0	0.709	91.0	2454.17	91.632	44899.9	44.900
PL8	1.0	0.600	91.0	2454.17	77.545	37997.1	37.997
PL9	1.0	0.512	91.0	2454.17	66.172	32424.2	32.424
PL10	1.0	0.406	91.0	2454.17	52.504	25727.2	25.727
PL11	1.0	0.313	91.0	2454.17	40.388	19790.1	19.790
ROOF	1.0	0.3125		-	120.9	59216.5	59.217

TOTAL = 664.64

Add 2% for Misc. Weights = 677.94 kips

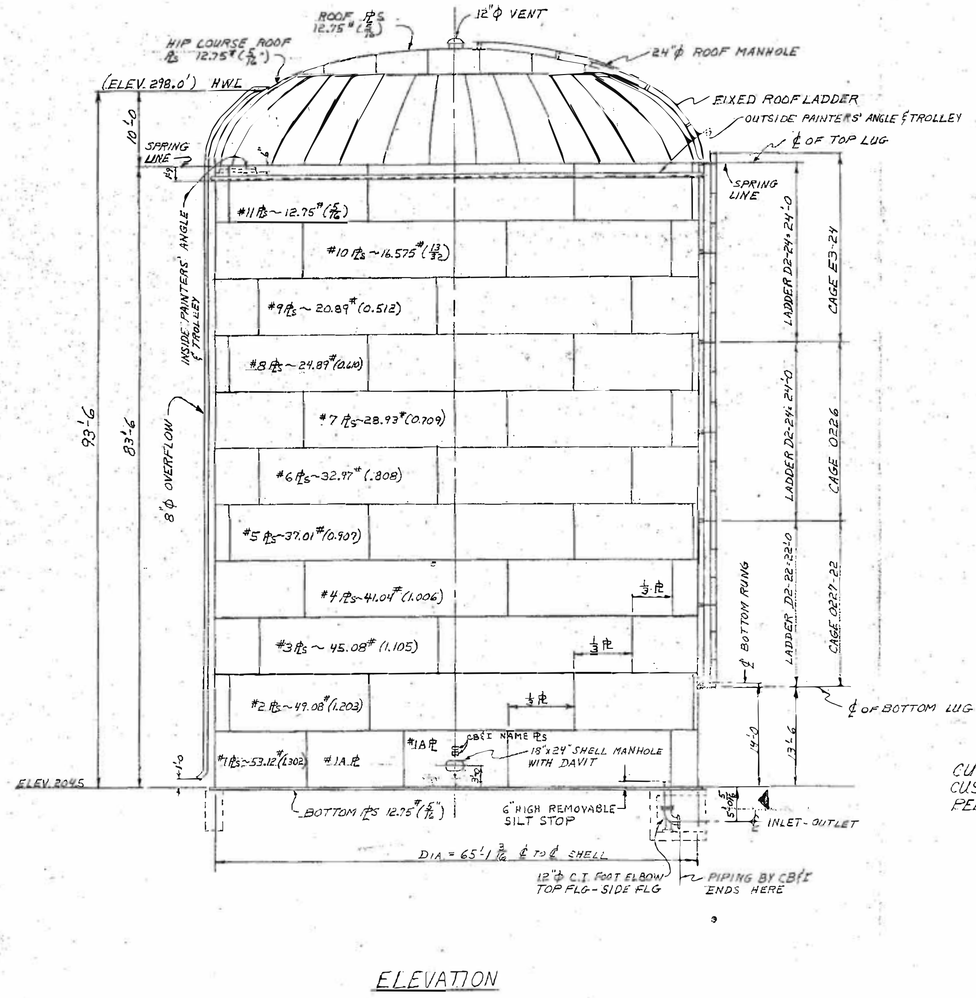
Moment Arm = 33.0 ft

Assume Water Tank base plate is 66'-0" diameter

Resisting Moment = 22371.89 k-ft

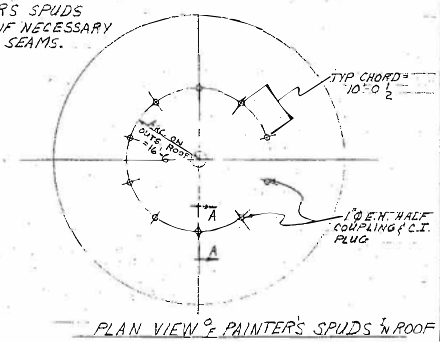
Overturning Moment = 6474 k-ft

0.289 < 1.0, OK

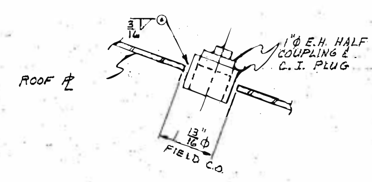


ELEVATION

NOTE: PAINTERS SPUDS CAN BE MOVED IF NECESSARY TO MISS ROOF PL SEAMS.



PLAN VIEW OF PAINTER'S SPUDS IN ROOF



SECTION A-A

LIST OF FITTINGS FURNISHED & INSTALLED BY CB&I	
No.	DESCRIPTION
1	18"x24" SHELL MANHOLE W/DAVIT
1	24"φ ROOF MANHOLE
1	12"φ VENT
1	12"φ INLET-OUTLET PIPE W/C.I. FOOT ELBOW
1	12"φ REMOVABLE SILT STOP 6" HIGH
1	FIXED ROOF LADDER
1	OUTSIDE SHELL LADDER W/ SAFETY CAGE
1	8"φ OVERFLOW TO GROUND
10	PAINTERS' SPUDS 1"φ E.H. HALF COUPLING & C.I. PLUG
1	OUTSIDE PAINTERS' ANGLE W/TROLLEY
1	INSIDE PAINTERS' ANGLE W/TROLLEY

EXAMINED BY N.S. DATE 6/6/63

APPROVED In General

BUCK, SEIFERT AND JOST

BY [signature]

GENERAL NOTES

ALL JOINTS TO BE SECTIONED AS REQ'D BY CODE.

SERVICE: MUNICIPAL.

CAPACITY: 2,225,000 GALS.

SPECIFICATIONS: AWWA & ENGINEERS

INSPECTION: MILL-NO SHOP-NO FIELD-YES, BY CUSTM. REP.

ERECTION: BY CB&I CO. FOUNDATION: BY CUSTOMER

STEEL: PLATES-A283 GR.C STRUCTURAL - A36

CLEANING: COMMERCIAL SANDBLASTING IN FIELD-SEE PAINT SHEETS

PAINTING: SEE PAINT SHEETS P1 & P2

CORROSION ALLOWANCE = 1/16"

FITTINGS: TO BE LOCATED AS SHOWN OR TO SUIT CUSTOMER IN FIELD

CUSTOMER TO FURNISH OILED SAND FOR SAND CUSHION. CB&I CO. TO SPREAD OILED SAND PER DWG. F.

DETAILS & MAT'L FOR ONE TANK ~ ONE REQ'D

CHICAGO BRIDGE & IRON COMPANY
GREENVILLE, PA.

GENERAL PLAN

65'-0 φ x 93'-6 TO HWL STANDPIPE
CONNECTICUT WATER CO.
WAREHOUSE POINT CONNECTICUT

PURCHASER'S NO. | CONTRACT NO. 8-8132

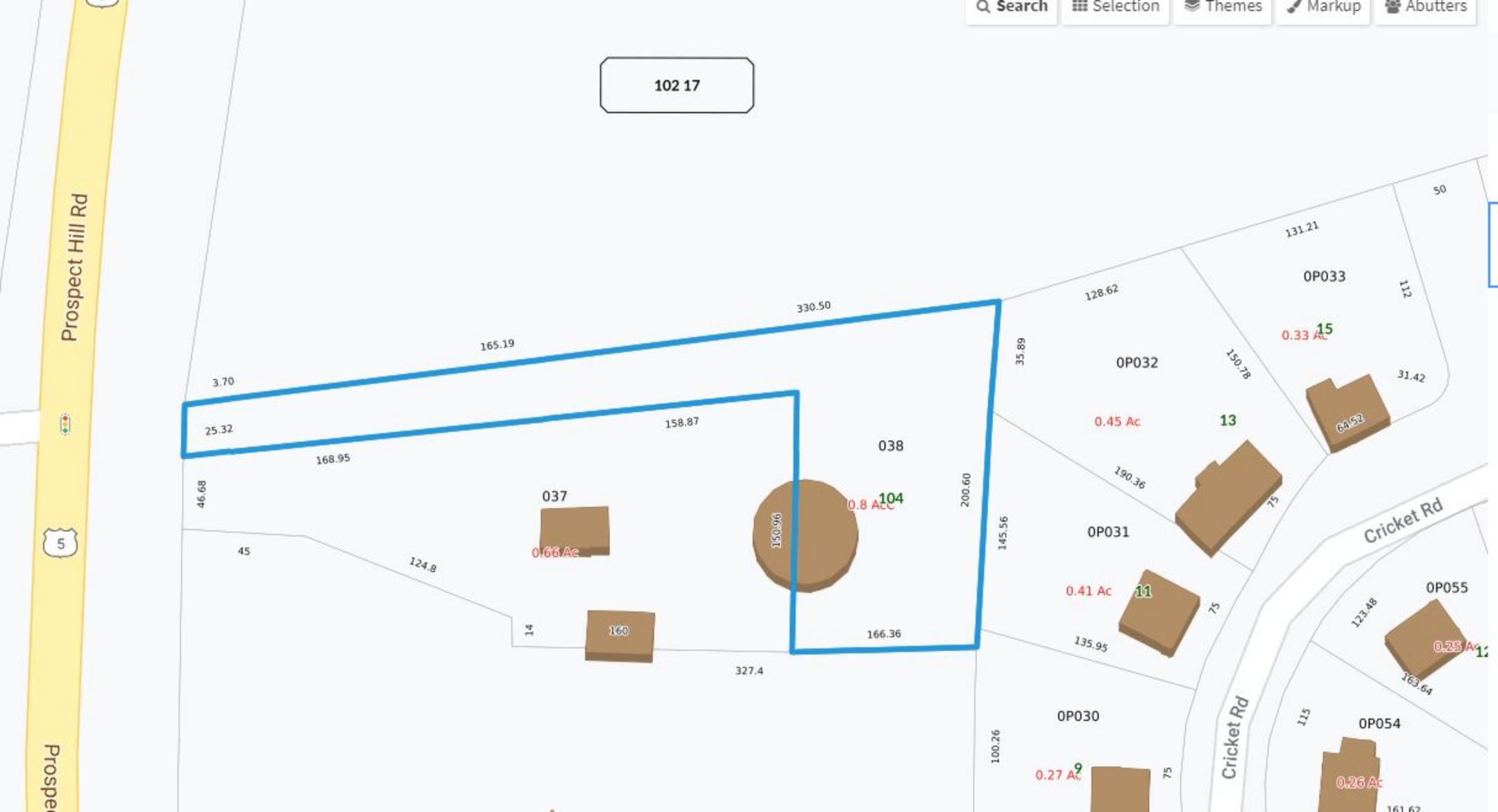
DRAWN BY F.T.J. DATE 5-6-63

CHECKED BY WA DATE 5-8-63

DESIGN ENGR GUFFEY DWG NO. 1 REV 2

DATE	BY	REMARKS
6-5-63	C.G.	DEPTH & PIPE
5-22-63	F.T.J.	CHG'D DEPTH TO ℄ OF ELBOW

ATTACHMENT 5



Search

Advanced Search

Download Results | More

Showing 1-1 results. Scroll to see mo

104 PROSPECT HILL RD
CONN WATER CO
01232500

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.

Information on the Property Records for the Municipality of East Windsor was last updated on 7/2/2021.

Property Summary Information

- Parcel Data And Values
- Sales

Parcel Information

Location:	104 PROSPECT HILL RD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	01232500	Map Block Lot:	102 17 038	Acres:	0.65
490 Acres:	0.00	Zone:	B-1	Volume / Page:	0073/0029
Developers Map / Lot:		Census:	4841000		

Value Information

	Appraised Value	Assessed Value
Land	1,700,000	1,190,000
Buildings	0	0
Detached Outbuildings	0	0
Total	1,700,000	1,190,000

Owner's Information

Owner's Data

CONN WATER CO
93 W MAIN ST
CLINTON, CT 06413

Detached Outbuildings

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
CONN WATER CO	0073	0029	05/22/1958		$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason

Google Map

Unique Id: 01232500

Location: 104 PROSPECT

MBL: 102 17 038

Primary Use: Commercial Vaca

Zone: B-1

Acres: 0.65

Appraised Value: $1,700,000

Assessed Value:

$1,190,000

Back To Search

Print View

Information Published With Permission From The Assessor

ATTACHMENT 6

UNITED STATES POSTAL SERVICE®

EAST WINDSOR 2

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		3	neopost 10/20/2021 US POSTAGE $002.99⁰ ZIP 06103 041L1220393?7
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Jason E. Bowsza, First Selectman Town of East Windsor 11 Rye Street Broad Brook, CT 06016				
2.	Ruthanne Calabrese, Zoning and Wetlands Compliance Officer Town of East Windsor 11 Rye Street Broad Brook, CT 06016				
3.	Connecticut Water Company 93 West Main Street Clinton, CT 06413-1600				
4.					
5.					
6.					

OCT 20 2021

PS Form **3665**, January 2017 (Page 1 of 1) PSN 7530-17-000-5549

See Reverse for Instructions