September 19, 2022

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

Regarding: Notice of Exempt Modification – AT&T Site CT1139 / FA# 10035389
Address: 151 Sand Hill Rd, South Windsor, CT 06074

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 187' monopole at the above-referenced address, latitude 41.8359919, longitude -72.5519989. Said monopole is operated by SBA Properties, LLC.

AT&T desires to modify its existing telecommunications facility by swapping six (6) antennas, adding three (3) antennas, installing three (3) RRUs, and adding one (1) surge arrestor, accompanying feedlines and a replacement mount, as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group, last revised August 30, 2022. The centerline height of the existing antennas is and will remain at 170 feet. This modification may include B2, B5, B17, B14, B29, B30, B66, & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned off at various times.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Liz Pendleton, Mayor of the Town of South Windsor, as elected official, Pamela A. Oliva, Zoning Enforcement Officer of the Town of South Windsor, Michele M. Lipe, Town Planner of the Town of South Windsor, SBA Properties, LLC, as tower operator, and Town of South Windsor as property owner.

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

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

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

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

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

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated June,28 2022, and prepared by Tower Engineering Solutions, enclosed herewith.*

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

Sincerely,

Evan Renwick

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

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval
Exhibit 7 – Notice Delivery Confirmations

Cc: The Honorable Liz Pendleton, Mayor, Town of South Windsor, elected official
Pamela A. Oliva, Zoning Enforcement Officer, Town of South Windsor
Michele M. Lipe, Town Planner, Town of South Windsor
SBA Properties, LLC, as tower operator
Town of South Windsor, as property owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING SELF SUPPORT: • NEW AT&T ANTENNAS: QD6616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3) (STACKED) (TOP). • NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3) (STACKED) (BOTTOM). • NEW AT&T RRUS: 4478 B14 (1 PER GAMMA SECTOR, TOTAL OF 1). • NEW AT&T SURGE ARRESTOR: DC6-48-60-18-8F (TOTAL OF 1). • NEW AT&T (2) 6 AWG DC POWER CABLES & (1) 18 PAIR OF FIBER RUNS. • RELOCATE (2) EXISTING 4478 B14 FROM SHELTER TO TOWER • NEW AT&T LOW PROFILE PLATFORM, SITEPRO-1 PART# RMQLP-4210-H10 ITEMS TO BE MOUNTED IN EQUIPMENT LOCATION: • INSTALL (1) FRONTHAUL GATEWAY (FHG) 6648 +XCEDE CABLE. FINAL=1x6601/1x5216/1xXMU03/1x6630 Mixed-Mode+IDLe/1x6648+IDLe Xcede. • INSTALL (2) -48v RECTIFIERS FOR TOTAL OF (10) -48v RECTIFIERS. • INSTALL (12) VERTIV UPCONVERTERS. ITEMS TO BE REMOVED: • DECOMMISSION EXISTING AT&T ANTENNA: HPA65R-BU6A (TYP. OF 1 PER SECTOR, TOTAL OF 3). • DECOMMISSION EXISTING AT&T ANTENNA: HPA-65R-BUU-H6 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • DECOMMISSION EXISTING AT&T DIPLEXERS: DBCT108F1V92-1 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • DECOMMISSION EXISTING AT&T (6) 1-5/8" COAX CABLES. ITEMS TO REMAIN: • (3) ANTENNAS, (14) RRU'S, (2) SURGE ARRESTOR, (4) DC POWER, (2) FIBER, & (6) 1-5/8" COAX CABLES
SITE ADDRESS:	151 SAND HILL ROAD SOUTH WINDSOR, CT 06074
LATITUDE:	41.8359919° N, 41° 50' 9.57" N
LONGITUDE:	-72.5519989° W, 72° 33' 7.19" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	187'-0"±
RAD CENTER:	170'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SITE NUMBER: CTL01139

SITE NAME: SOUTH WINDSOR SAND HILL RD

FA CODE: 10035389

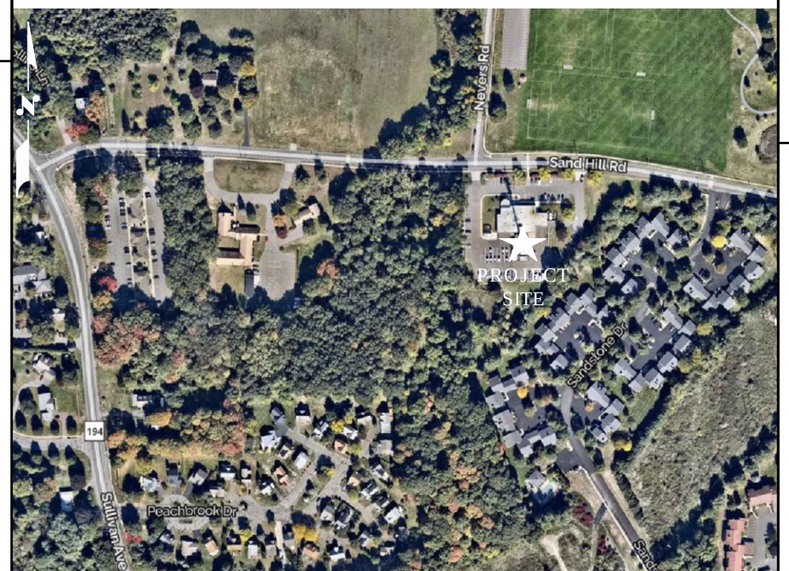
PACE ID: MRCTB053539, MRCTB055316, MRCTB054747, MRCTB056457, MRCTB061753

PROJECT: 5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

ISSUED FOR PERMITTING

VICINITY MAP

DIRECTIONS TO SITE:
HEAD SOUTHEAST TOWARD CAPITAL BLVD, TURN LEFT ONTO CAPITAL BLVD, USE THE LEFT LANE TO TURN LEFT ONTO STATE HWY 411, TURN LEFT TO MERGE WITH I-91 N, MERGE WITH I-91 N, USE THE LEFT LANE TO TAKE EXIT 29 FOR U.S.5 N/CONNECTICUT 15 N/I-84 E TOWARD E HARTFORD/BOSTON, MERGE WITH US-5 N, CONTINUE ONTO CT-15 N, TAKE THE EXIT ON THE LEFT ONTO I-84 E TOWARD BOSTON, TAKE EXIT 62 FOR BUCKLAND STREET, USE THE LEFT 2 LANES TO TURN LEFT ONTO BUCKLAND ST, CONTINUE ONTO CT-194 W, TURN RIGHT ONTO SAND HILL RD, TURN RIGHT ONTO SAND HILL DR, DESTINATION WILL BE ON THE RIGHT.



GENERAL NOTES

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

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

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

SITE NUMBER: CTL01139
SITE NAME: SOUTH WINDSOR SAND HILL RD

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HARTFORD COUNTY

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

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

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

AT&T

TITLE SHEET
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	T-1	C

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

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

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

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

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

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

ABBREVIATIONS

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

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

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

SITE NUMBER: CTL01139
SITE NAME: SOUTH WINDSOR SAND HILL RD

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HARTFORD COUNTY

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

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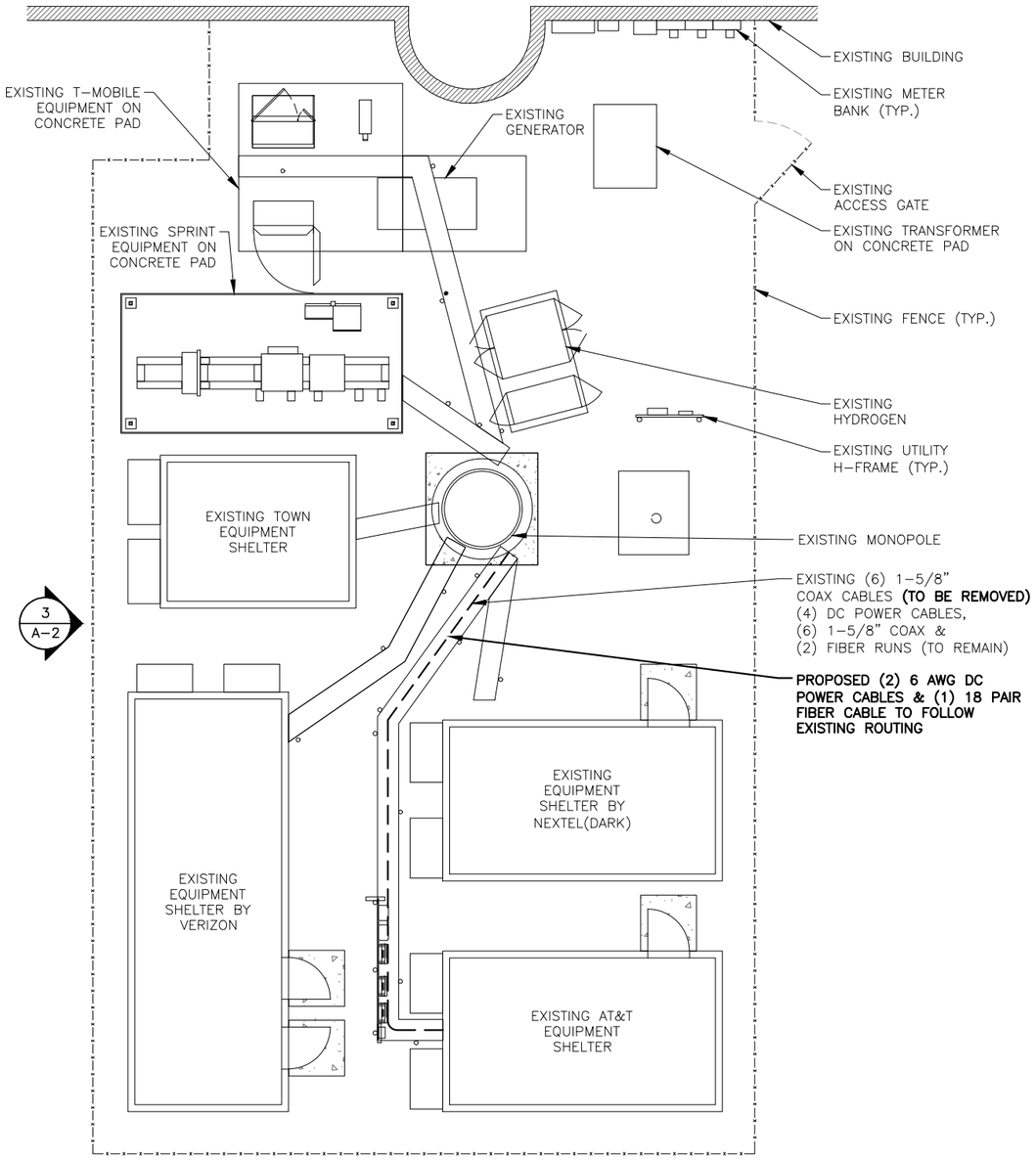
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GD

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

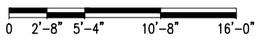
AT&T

GENERAL NOTES
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	GN-1	C



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"



NOTE:

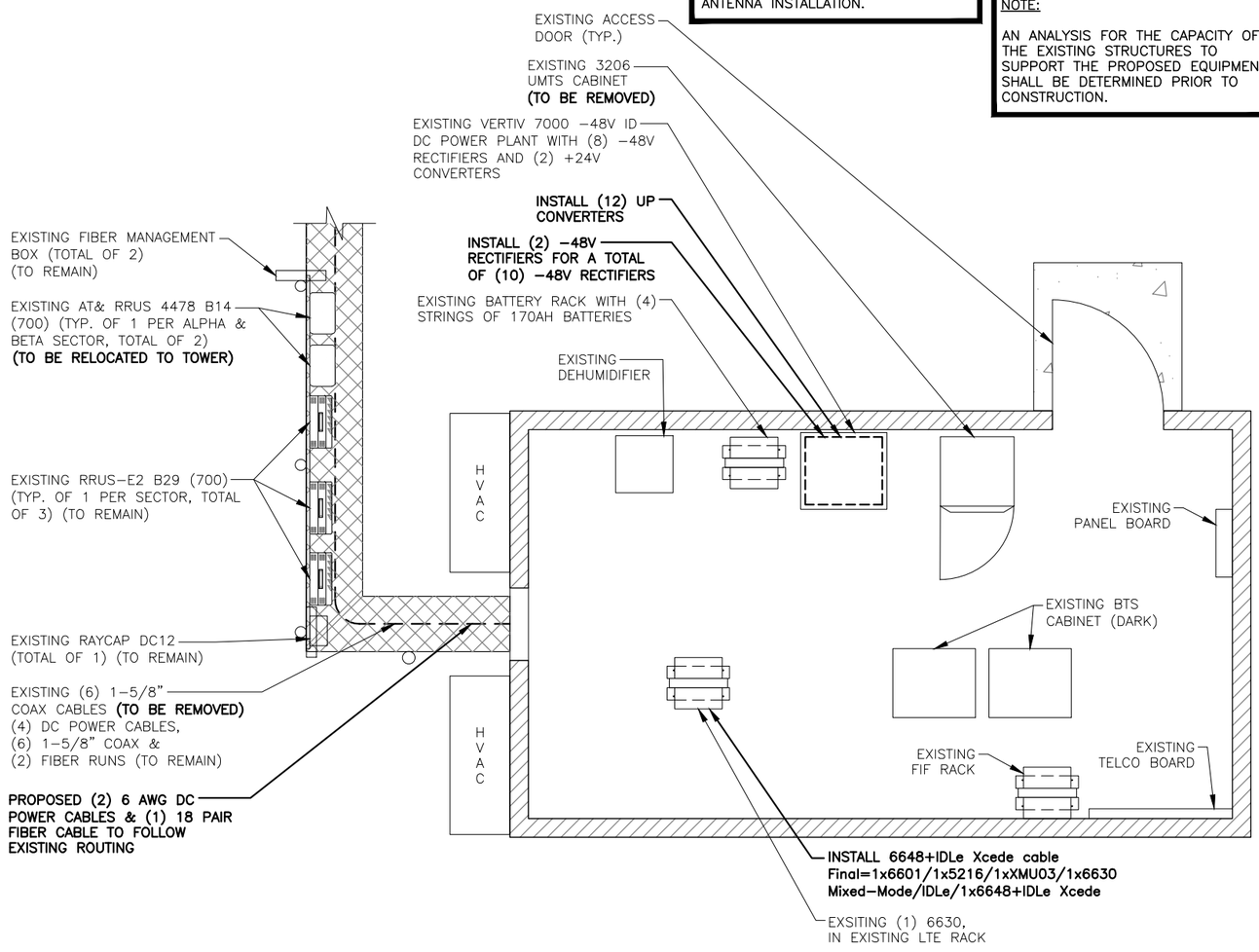
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A MOUNT STRUCTURAL ANALYSIS PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

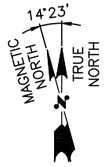
NOTE:

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

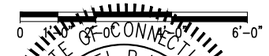
NOTE:

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





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



HDG | HUDSON Design Group LLC
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COMPOUND & EQUIPMENT PLANS
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

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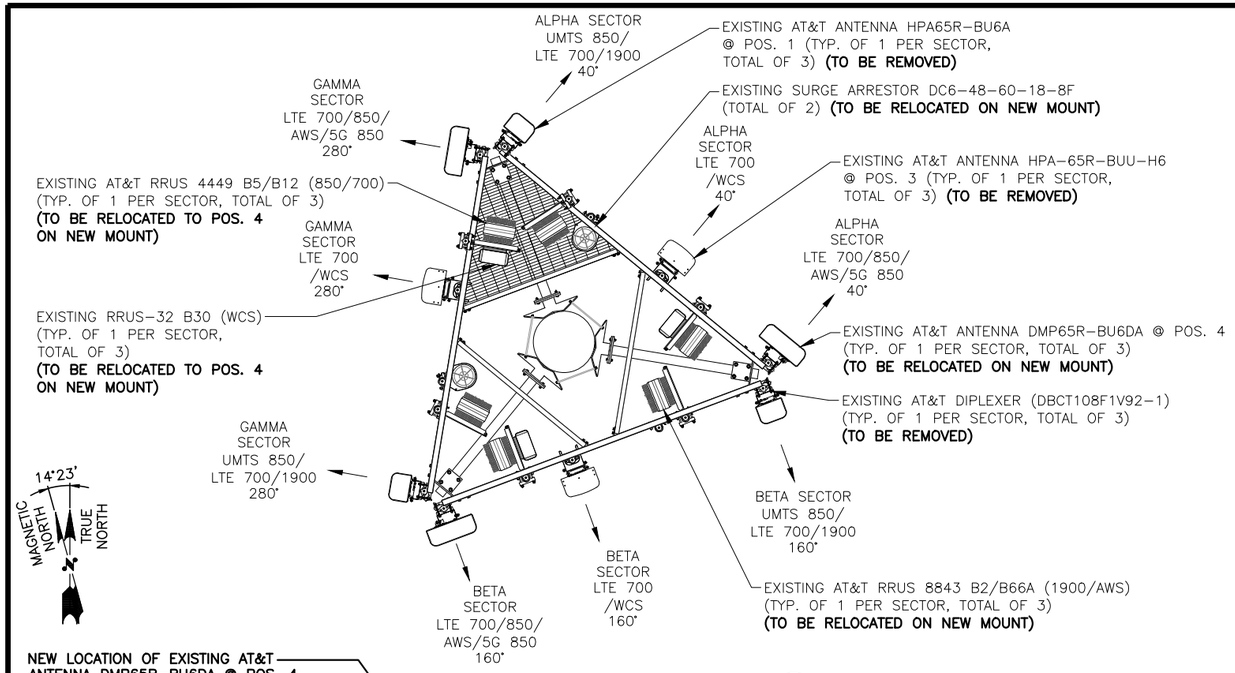
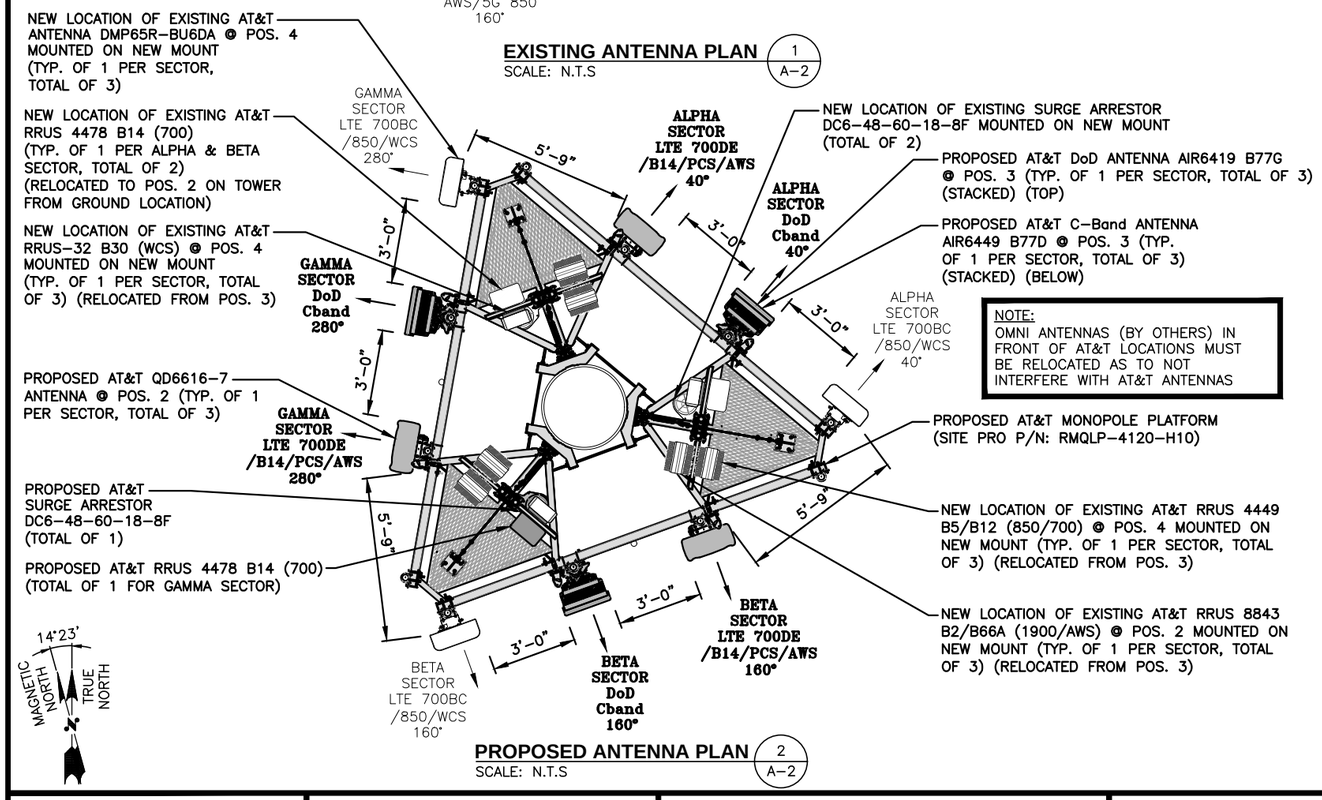


EXISTING ANTENNA PLAN

SCALE: N.T.S

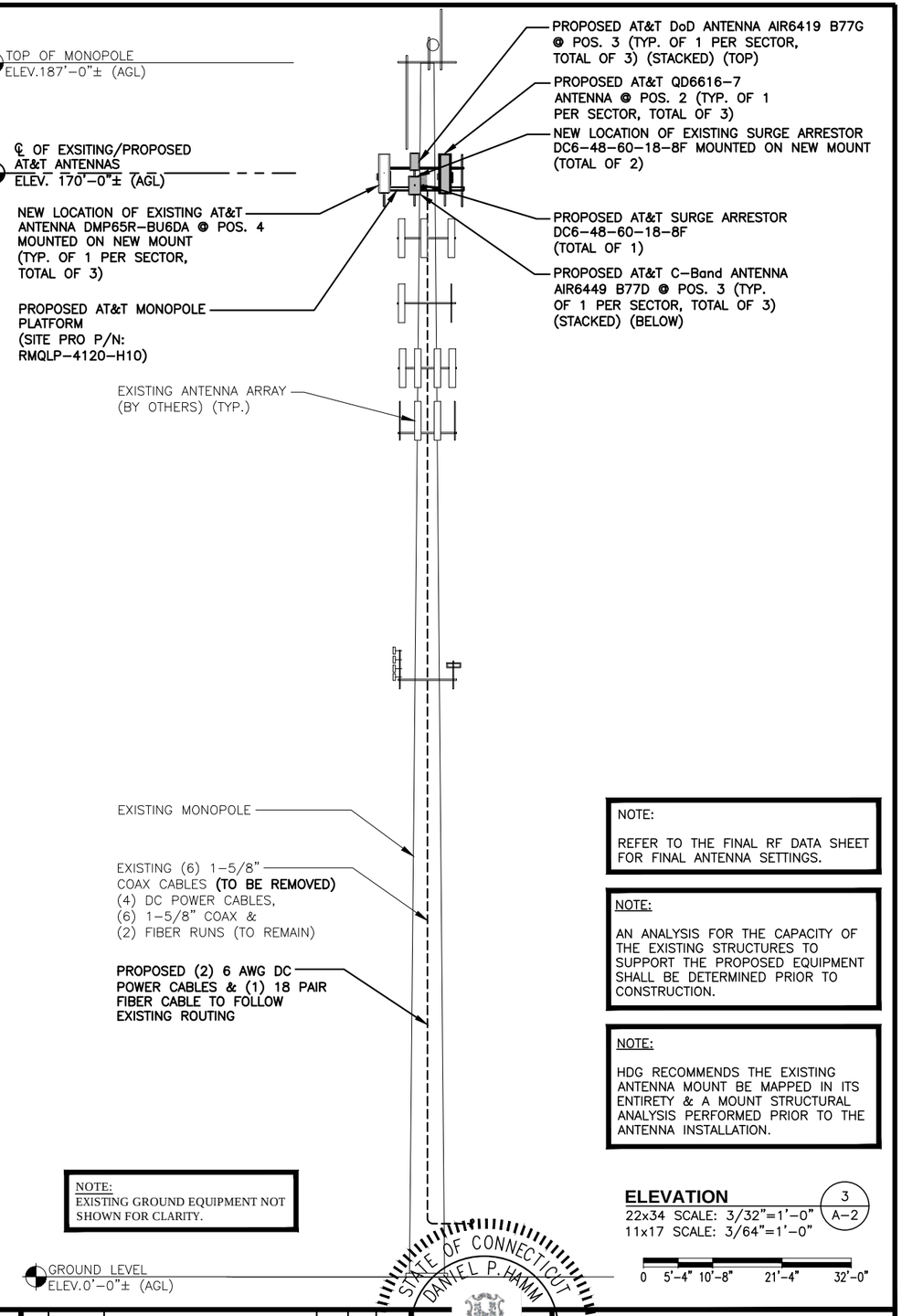
1 / A-2



PROPOSED ANTENNA PLAN

SCALE: N.T.S

2 / A-2



NOTE:

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

NOTE:

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

NOTE:

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

ELEVATION

3 / A-2

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

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

HUDSON Design Group LLC
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SITE NUMBER: CTL01139
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151 SAND HILL ROAD
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at&t
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B	08/15/22	ISSUED FOR PERMITTING	AV	MKT	DPH
A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH

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

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

AT&T

RF ANTENNA LAYOUT PLANS & ELEVATION
4SG NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	A-2	C

ANTENNA SCHEDULE

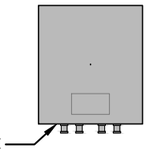
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	(2) 1–5/8" COAX	(E) (1) RAYCAP DC6–48–60–18–8F
A2	**PROPOSED**	**LTE 700DE /B14/PCS/AWS**	**QD6616–7**	**72"X22"X9.6"**	**170'–0"±**	**40°**	–	(E)(1)RRUS–4478 B14 (700) (E)(1)RRUS–8843 B2/B66A (1900/AWS) (E)(1)RRUS–E2 B29 (700)(GROUND)	– – –	(E)(2) DC POWER (1) FIBER (E)(1)(Y–CABLE)	
A3	**PROPOSED**	**DoD C–BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**170'–0"±**	**40°**	–	–	–	–	
A4	EXSITING	LTE 700BC /850/WCS	DMP65R–BU6DA	71.2"X20.7"X7.7"	170'–0"±	40°	–	(E)(1)RRUS–4449 B5/B12 (850/700) (E)(1)RRUS–32 B30 (WCS)	– –	(E)(1)(Y–CABLE)	
B1	–	–	–	–	–	–	–	–	–	(2) 1–5/8" COAX	(E) (1) RAYCAP DC6–48–60–18–8F
B2	**PROPOSED**	**LTE 700DE /B14/PCS/AWS**	**QD6616–7**	**72"X22"X9.6"**	**170'–0"±**	**160°**	–	(E)(1)RRUS–4478 B14 (700) (E)(1)RRUS–8843 B2/B66A (1900/AWS) (E)(1)RRUS–E2 B29 (700)(GROUND)	– – –	(E)(2) DC POWER (1) FIBER (E)(1)(Y–CABLE)	
B3	**PROPOSED**	**DoD C–BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**170'–0"±**	**160°**	–	–	–	–	
B4	EXSITING	LTE 700BC /850/WCS	DMP65R–BU6DA	71.2"X20.7"X7.7"	170'–0"±	160°	–	(E)(1)RRUS–4449 B5/B12 (850/700) (E)(1)RRUS–32 B30 (WCS)	– –	(E)(1)(Y–CABLE)	
C1	–	–	–	–	–	–	–	–	–	(2) 1–5/8" COAX	**(P) (1) RAYCAP DC6–48–60–18–8F**
C2	**PROPOSED**	**LTE 700DE /B14/PCS/AWS**	**QD6616–7**	**72"X22"X9.6"**	**170'–0"±**	**280°**	–	**(P)(1)RRUS–4478 B14 (700)** (E)(1)RRUS–8843 B2/B66A (1900/AWS) (E)(1)RRUS–E2 B29 (700)(GROUND)	**18.1"x13.4"x8.3"** – –	**(P)(2) 6 AWG DC POWER (P)(1) 18 PAIR FIBER** (E)(1)(Y–CABLE)	
C3	**PROPOSED**	**DoD C–BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**170'–0"±**	**280°**	–	–	–	–	
C4	EXSITING	LTE 700BC /850/WCS	DMP65R–BU6DA	71.2"X20.7"X7.7"	170'–0"±	280°	–	(E)(1)RRUS–4449 B5/B12 (850/700) (E)(1)RRUS–32 B30 (WCS)	– –	(E)(1)(Y–CABLE)	

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(1)	**4478 B14 (700)**	**18.1"x13.4"x8.3"**
E(2)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS–E2 B29 (700)	20.4"x18.5"x7.5"
E(3)	4449 B5/B12 (700/850)	17.9"x13.2"x10.4"
E(3)	8843 B2/B66A(1900/AWS)	14.9"x13.2"x10.9"
E(3)	RRUS–32 B30 (WCS)	27.2"x12.1"x7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

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

NOTE:
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PROPOSED RRUS DETAIL

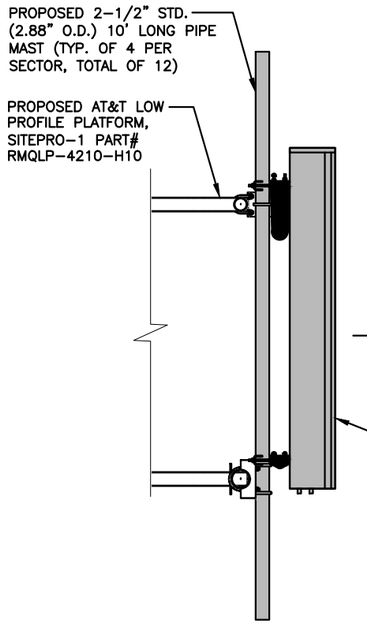
2 / A–3

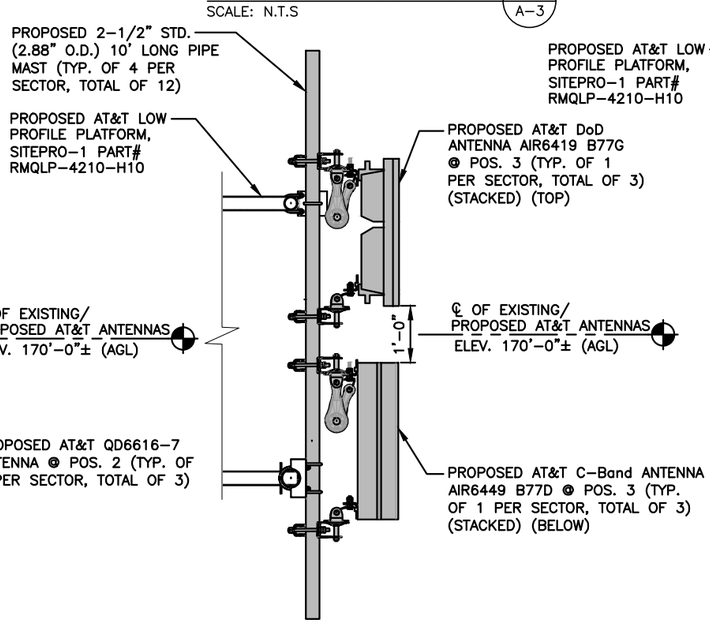
SCALE: N.T.S

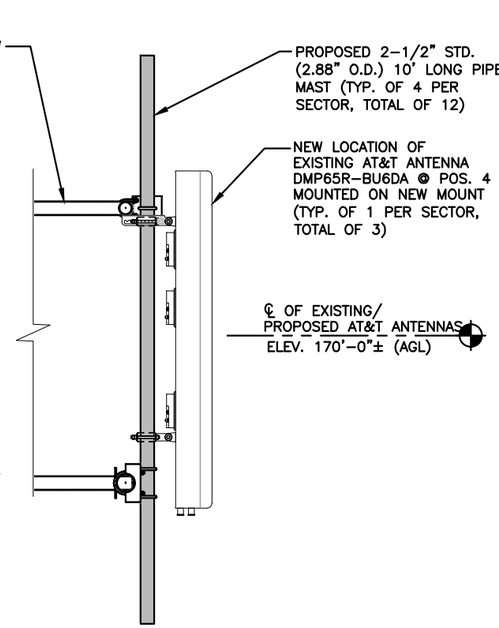
FINAL ANTENNA SCHEDULE

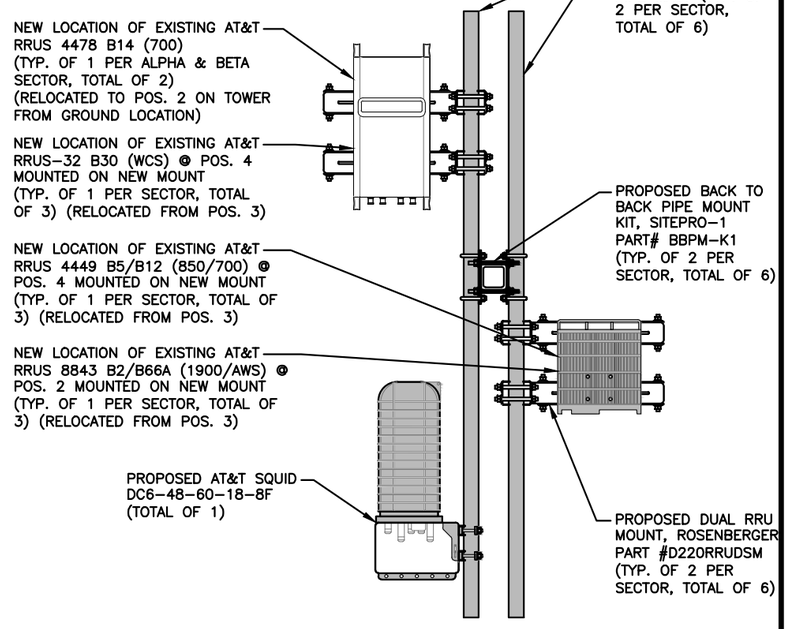
1 / A–3

SCALE: N.T.S









PROPOSED ANTENNA @ POS. 2

3 / A–3

22x34 SCALE: 3/4"=1'–0"
11x17 SCALE: 3/8"=1'–0"

0 8" 1'–4" 2'–8" 4'–0"

PROPOSED ANTENNA @ POS. 3

4 / A–3

22x34 SCALE: 3/4"=1'–0"
11x17 SCALE: 3/8"=1'–0"

0 8" 1'–4" 2'–8" 4'–0"

PROPOSED ANTENNA @ POS. 4

5 / A–3

22x34 SCALE: 3/4"=1'–0"
11x17 SCALE: 3/8"=1'–0"

0 8" 1'–4" 2'–8" 4'–0"

PROPOSED RRH & SURGE PROTECTOR MOUNTING DETAIL

6 / A–3

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

0 3" 6" 9" 1'–0" 2'–0" 3'–0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GD

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

AT&T

DETAILS
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	A–3	C

NOTE:

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NOTE:

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NOTE:

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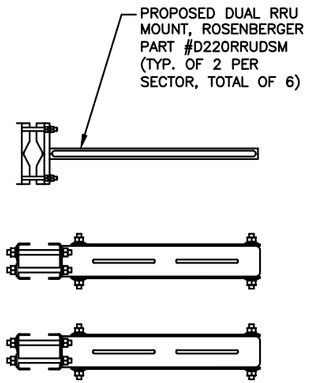
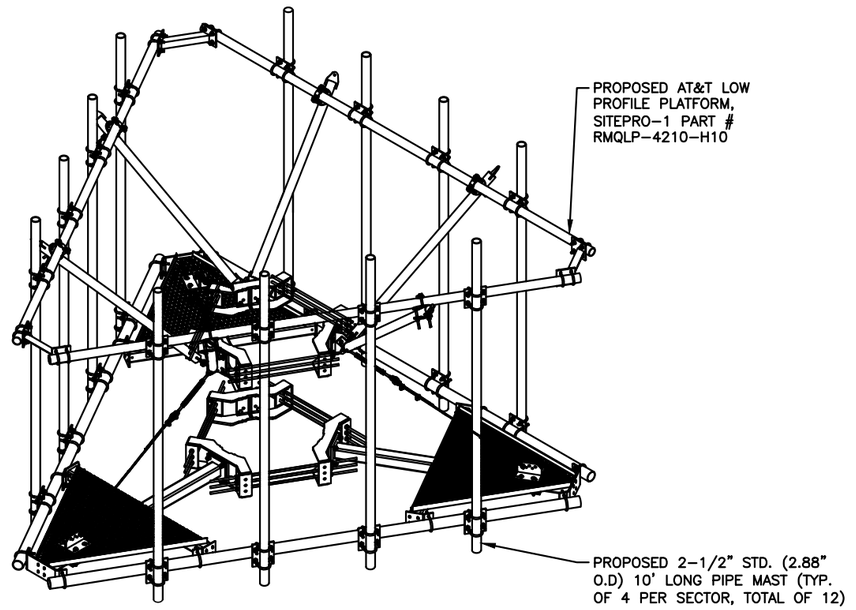
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL 1 / A-4
SCALE: N.T.S



BACK TO BACK RRU MOUNT DETAIL 2 / A-4
SCALE: N.T.S



14'-6" LOW PROFILE PLATFORM (RMQLP-4120-H10) 3 / A-4
SCALE: N.T.S

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

STATE OF CONNECTICUT
DANIEL P. HAMM
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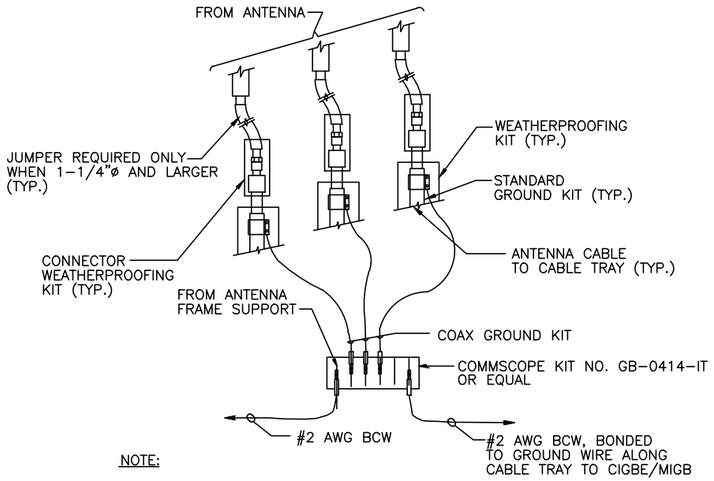
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	A-4	C



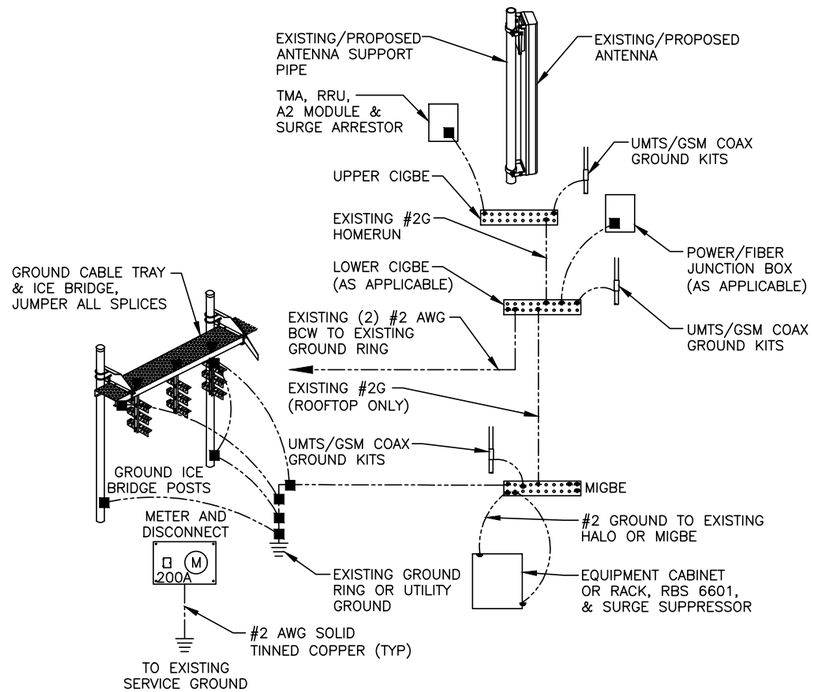
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

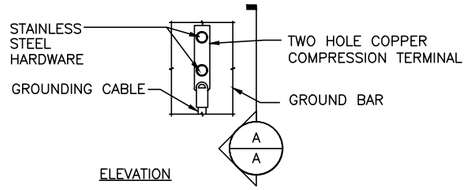
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1

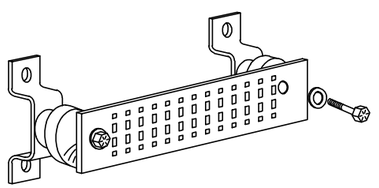
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

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

STATE OF CONNECTICUT
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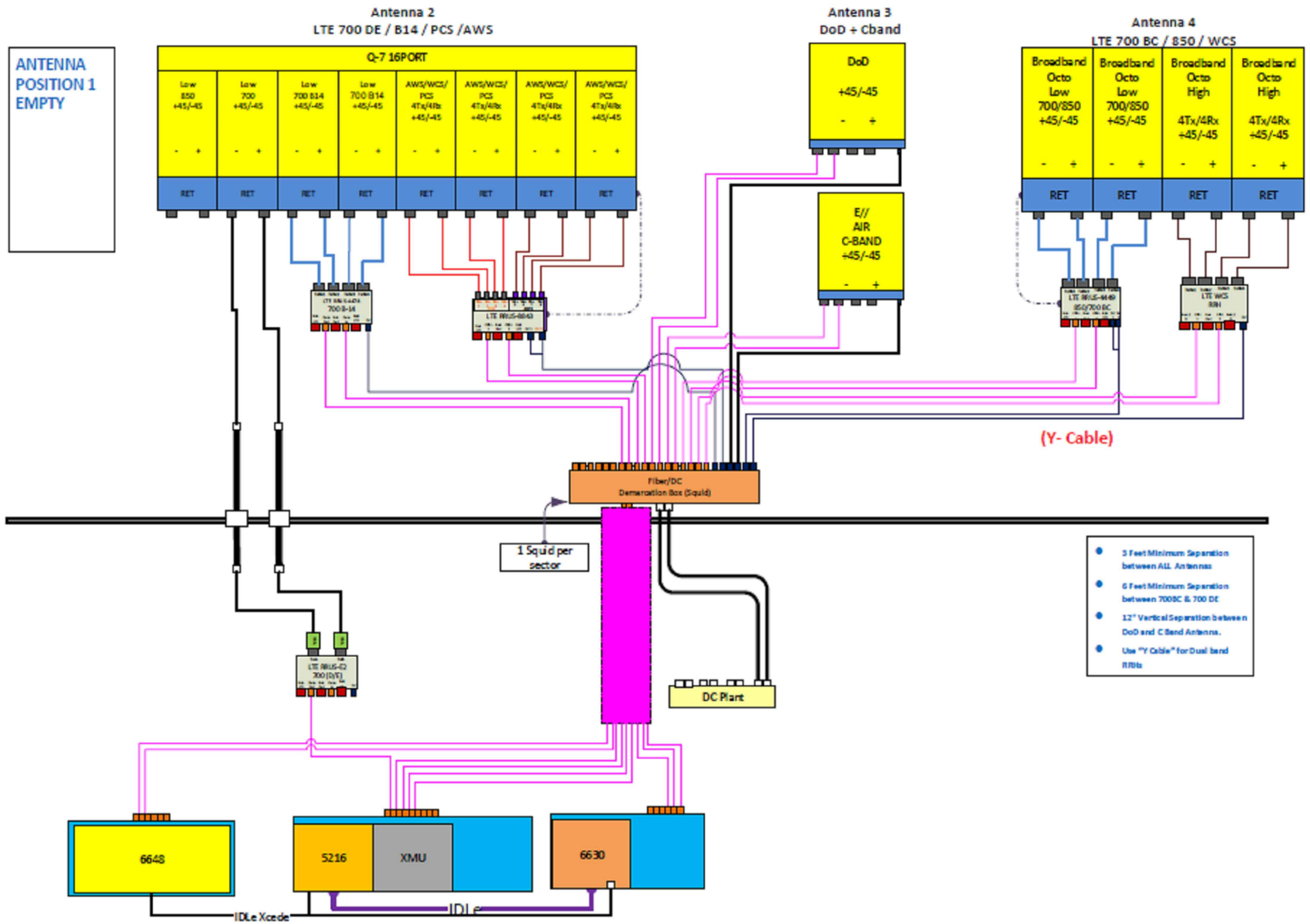
AT&T

GROUNDING DETAILS
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	G-1	C



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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

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

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B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH

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

AT&T

RF PLUMBING DIAGRAM
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL01139	RF–1	C

EXHIBIT 2

Town of South Windsor, CT

Property Listing Report

Map Block Lot **76-8**

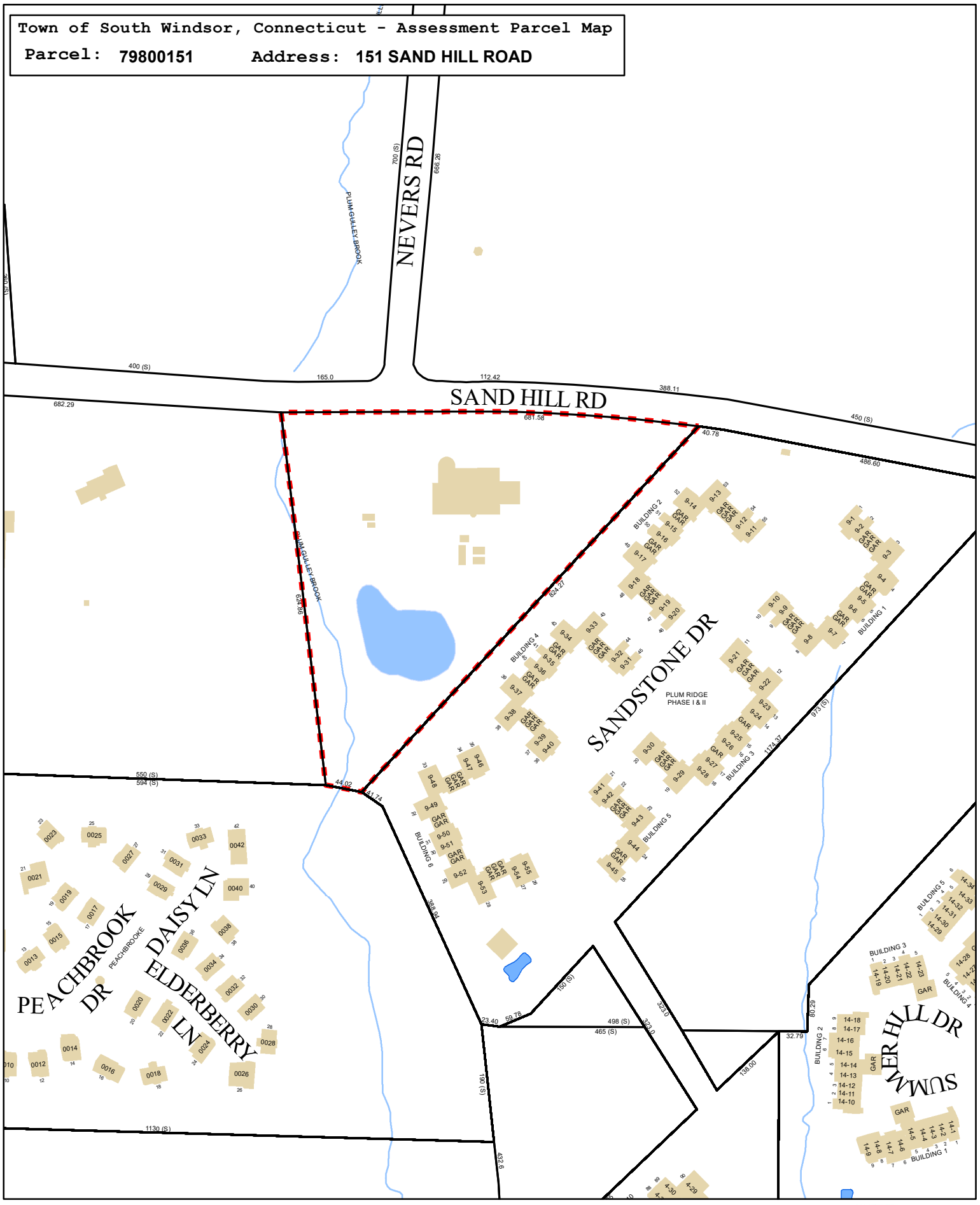
Account **79800151**

Property Information

Property Location	**151 SAND HILL ROAD**
Owner	**SOUTH WINDSOR TOWN OF 56**
Co-Owner	**POLICE FACILITY**
Mailing Address	**1540 SULLIVAN AVENUE** **SOUTH WINDSOR CT 06074**
Land Use	**920 Exempt Comm**
Land Class	**E**
Zoning Code	**RR**
Census Tract	**4871**

Photo

Sketch



Approximate Scale:
1 inch = 200 feet

0 160 320 480 Feet

Map Produced:
January 2021

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of South Windsor and its mapping contractors
assume no legal responsibility for the
information contained herein.

EXHIBIT 3

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 187 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT07824-S

Customer Site Name: South Windsor

Carrier Name: AT&T (App#: 202068-1)

Carrier Site ID / Name: 10035389 / South Windsor Sand Hill Rd

Site Location: 151 Sand Hill Road

South Windsor, Connecticut

Hartford County

Latitude: 41.836000

Longitude: -72.552000

Analysis Result:

Max Structural Usage: 72.5% [Pass]

Max Foundation Usage: 87.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Kevin Azisllari

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 187 ft SABRE Monopole

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Customer Site Name: South Windsor

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Site Location: 151 Sand Hill Road

South Windsor, Connecticut

Hartford County

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Longitude: -72.552000

Analysis Result:

Max Structural Usage: 72.5% [Pass]

Max Foundation Usage: 87.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Kevin Azisllari

Introduction

The purpose of this report is to summarize the analysis results on the 187 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing prepared by Sabre, Job #02-10062 dated 11/1/01
Foundation Drawing	Foundation Drawing prepared by Sabre, Job #02-10062 dated 10/11/01
Geotechnical Report	Geotechnical Report prepared by Dr. Clarence Welti, dated 9/29/00
Modification Drawings	N/A
Mount Analysis	HDG, FA #: 10035389, dated 05/03/2022

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.178, S_1 = 0.064

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	187.0	1	Telewave - ANT450F6 - Whip	Low Profile Platform	(4) 1/2" (3) 7/8"	Town of South Windsor
2		2	Telewave - ANT900D6-9 - Whip			
3		2	Decibel - DB201 - Whip			
4		2	Scala - MF-900B - Dish			
-	170.0	3	CCI - HPA-65R-BUU-H6 - Panel	Low Profile Platform w/ HRK12	(12) 1 5/8" (2) 1/2" Fiber (2) 3" Conduit (4) 3/4" DC Power	AT&T*
-		3	CCI - DMP65R-BU6DA - Panel			
-		3	CCI - HPA65R-BU6AA-K - Panel			
-		3	CCI DTMABP7819VG12A TMA			
-		6	KAelus DBC0061F1V51-2			
-		3	Ericsson RRUS-32			
-		3	Ericsson RRUS 8843 B2 B66A			
-		3	Ericsson RRUS 4449 B5/B12			
-		3	CSS DBC-750			
-		2	Raycap DC6-48-60-18-8F			
-		3	Commscope ABT-DFDM-ADBH			
18	160.0	3	RFS APXVAARR24_43-U-NA20	Platform w/ Hand Rail + Kicker kit w/ Collar mount	(9) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
19		3	Ericsson Air32 KRD901146-1_B66A_B2A			
20		3	Ericsson AIR6449 B41			
21		3	Ericsson KRY 112 144/1			
22		3	Commscope SDX1926Q-43			
23		3	Ericsson 4449 B71+B85			
24		3	Ericsson 4415 B25			
25	140.0	3	Commscope NHH-65B-R2B - Panel	Modified Low Profile Platform W/ (1) VZWSMART VZWSMART-PLK1 (Support Rail Kit) & (1) SITE PRO 1 PRK-SFS (Handrail Reinforcement Kit)	(1) 1/2" (11) 1 5/8" (2) 1 5/8" Hybrid	Verizon
26		3	Commscope NHHSS-65B-R2B - Panel			
27		3	Samsung MT6407-77A - Panel			
28		3	Commscope LNX-6514DS-VTM- Panel			
29		3	Samsung RF4440d-13A RRU			
30		3	Samsung RF4439d-25A RRU			
31		3	Samsung LTE CBRS RT4401 48A-RRU			
32		2	RFS DB-T1-6Z-8AB-0Z-OVP			
33		6	Lucent KS-24019- GPS			

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
34	130.0	3	Alcatel Lucent - 1900MHz - RRH	Low Profile Platform	(1) 0.7" Fiber (3) 1-1/4"	Sprint
35		3	Alcatel Lucent - 800 MHz - RRH			
36		3	Alcatel Lucent - 800MHz - Filter			
37		4	RFS - ACU-A20-N - RET			
38		3	RFS - APXVSPP18-C-A20 - Panel			
39		3	RFS - APXVTM14-C-120 - Panel			
40		3	RF Filters			
41		3	Alcatel Lucent - TD-RRH8x20-25 - RRU			
42	102.0	3	JMA Wireless MX08FRO665-21 - Panel	Commscope Platform w/HRK [MC-PK8-DSH]	(1) 1.6" Hybrid	Dish Wireless
43		3	Fujitsu TA08025-B605			
44		3	Fujitsu TA08025-B604			
45		1	Raycap RDIDC-9181-PF-48			
46	92.0	1	Telewave - ANT150D3 - Whip	Low Profile Platform	(6) 1/2"	Town of South Windsor
47		1	Telewave - ANT4506-9 - Whip			
48		1	Telewave - ANT450Y10-WR - Yagi			
49		1	Decibel - DB205 - Whip			
50		2	Scala - MF-900B - Dish			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
5	171.8	3	Ericsson Air6419 N77G - Panel	Low Profile Platform w/ HRK12	(12) 1 5/8" (1) 1/2" (2) 3" Conduit* (2) 1/2" Fiber (4) 3/4" DC Power	AT&T
6	170.0	3	Cci DMP65R-BU6DA - Panel			
7		3	Quintel QD6616-7 - Panel			
8		3	CCI DTMABP7819VG12A TMA			
9		6	Kaelus DBC0061F1V51-2 - Diplexer			
10		3	Ericsson RRUS-32 - RRU			
11		3	Ericsson RRUS 8843 B2 B66A - RRU			
12		3	Ericsson RRUS 4449 B5/B12 - RRU			
13		3	Ericsson 4478 B14 - RRU			
14		3	CSS DBC-750			
15		3	Raycap DC6-48-60-18-8F - DC Surge			
16		3	Commscope ABT-DFDM-ADBH - BIAS-T			
17	168.2	3	Ericsson Air6449 N77D - Panel			

* 3'' Conduit. This conduit houses the above (4) DC cables and (2) Fiber cables.

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**72.5%**	**68.7%**	**65.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	6605.0	50.6

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.4459 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 72.52% at 53.3ft

Structure:	CT07824-S-SBA	**Code:**	EIA/TIA-222-G	6/28/2022
Site Name:	South Windsor	**Exposure:**	C	
Height:	187.00 (ft)	**Gh:**	1.1	
Base Elev:	1.000 (ft)			Page: 1

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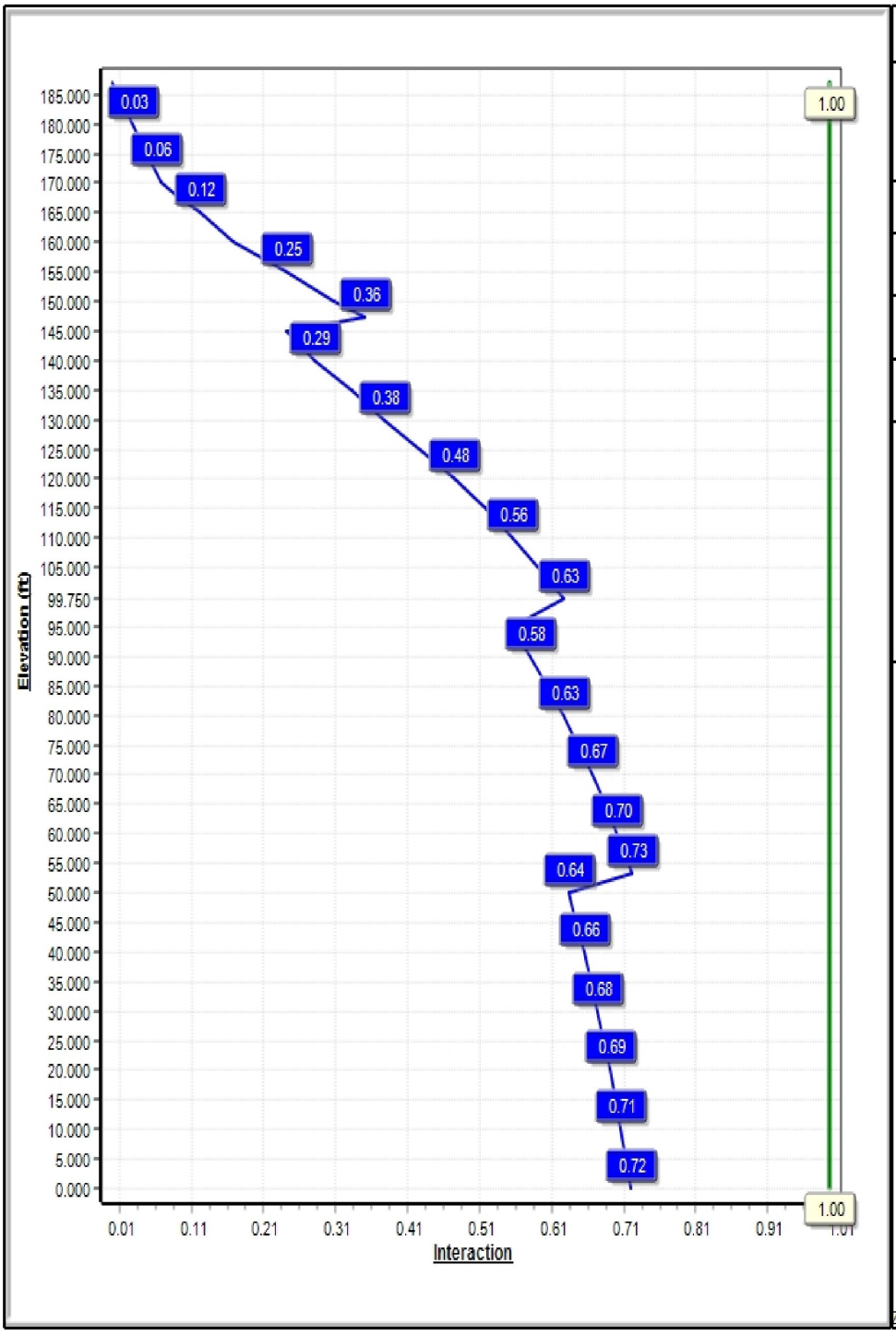
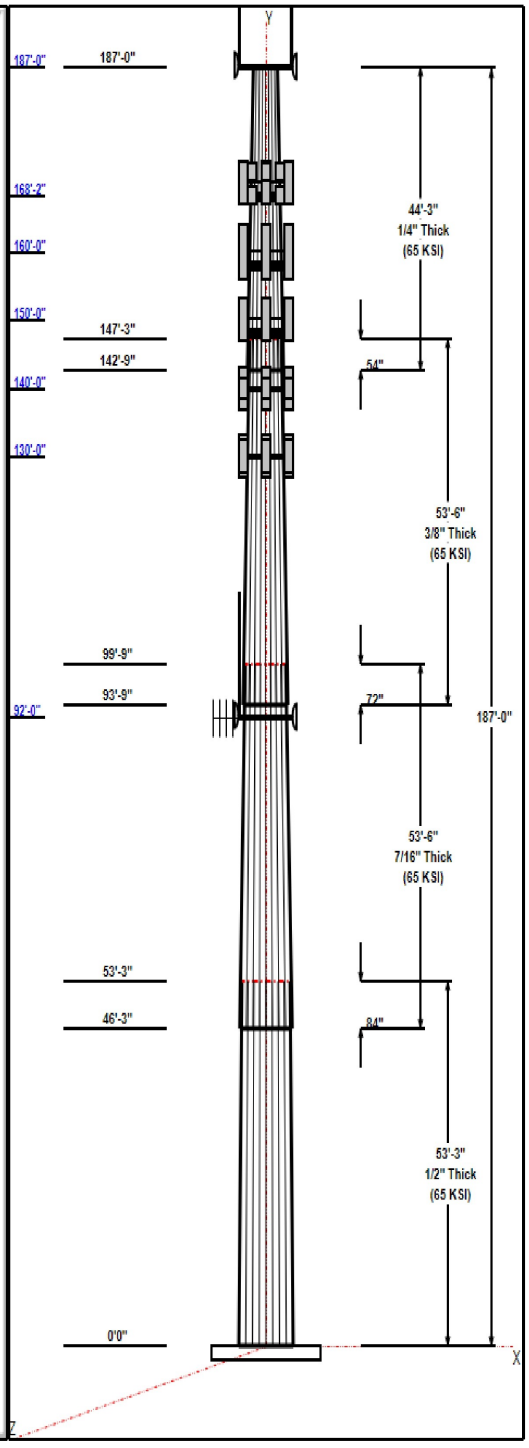
Dead Load Factor:	1.20	**Iterations:**	26
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

6/28/2022

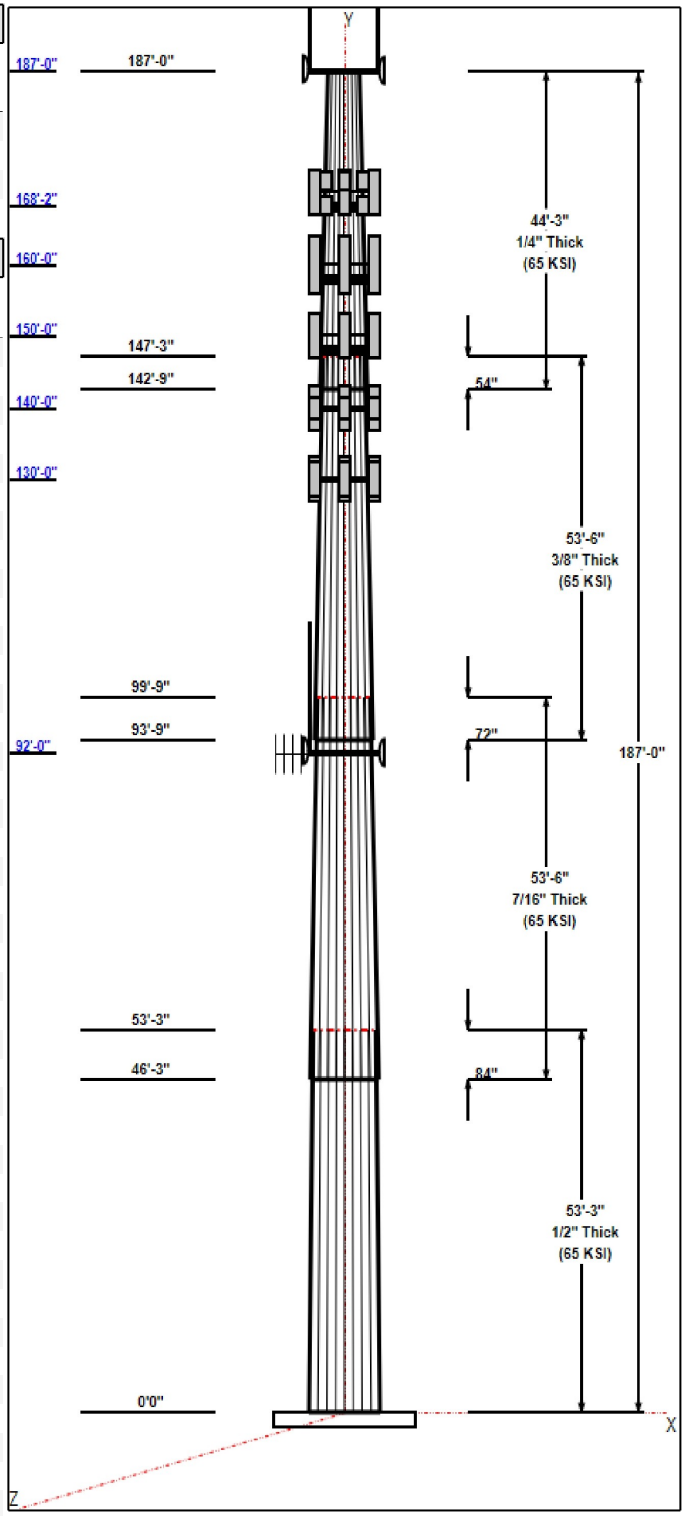
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	52.63	64.88	0.500		0.22997	65
2	53.50	42.82	55.12	0.438	Slip	0.22997	65
3	53.50	32.64	44.95	0.375	Slip	0.22997	65
4	44.25	24.00	34.18	0.250	Slip	0.22997	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
187.00	187.00	2	MF-900B	Town of South
187.00	189.04	2	ANT900D6-9	Town of South
187.00	190.92	1	ANT450F6	Town of South
187.00	191.75	2	DB201	Town of South
187.00	187.00	1	Low Profile Platform	Town of South
187.00	187.00	1	6' Lightning rod	
171.80	171.80	3	Ericsson Air6419 N77G	AT&T
170.00	170.00	3	Cci DMP65R-BU6DA	AT&T
170.00	170.00	3	Quintel QD6616-7	AT&T
170.00	170.00	3	CCI DTMABP7819VG12A	AT&T
170.00	170.00	6	Kaelus DBC0061F1V51-2	AT&T
170.00	170.00	3	Ericsson RRUS-32	AT&T
170.00	170.00	3	Ericsson RRUS 8843 B2	AT&T
170.00	170.00	3	Ericsson RRUS 4449	AT&T
170.00	170.00	3	Ericsson 4478 B14	AT&T
170.00	170.00	3	CSS DBC-750	AT&T
170.00	170.00	3	Raycap DC6-48-60-18-8F	AT&T
170.00	170.00	3	Commscope	AT&T
170.00	170.00	1	Low Profile Platform w/	AT&T
168.20	168.20	3	Ericsson Air6449 N77D	AT&T
160.00	160.00	3	AIR6449 B41	T-Mobile
160.00	160.00	3	SDX1926Q-43	T-Mobile
160.00	160.00	1	Platform w/ Hand Rail	T-Mobile
160.00	160.00	3	Air32	T-Mobile
160.00	160.00	3	APXVAARR24_43-U-NA20	T-Mobile
160.00	160.00	3	KRY 112 144/1	T-Mobile
160.00	160.00	3	RRUS 4415 B25	T-Mobile
160.00	160.00	3	4449 B71+B12	T-Mobile
160.00	160.00	1	MS-KI22-5 (Kickers)	T-Mobile
160.00	160.00	1	MS-1436 (Light Collar	T-Mobile
150.00	150.00	3	MX08FRO665-21	Dish Wireless
150.00	150.00	3	TA08025-B605	Dish Wireless
150.00	150.00	3	TA08025-B604	Dish Wireless
150.00	150.00	1	RDIDC-9181-OF-48	Dish Wireless
150.00	150.00	1	MC-PK8-DSH	Dish Wireless
140.00	140.00	3	Commscope	Verizon
140.00	140.00	3	Commscope	Verizon
140.00	140.00	3	Samsung MT6407-77A	Verizon
140.00	140.00	1	VZWSMART-PLK1	Verizon
140.00	140.00	1	PRK-SFS	Verizon
140.00	140.00	3	Samsung RF4440d-13A	Verizon
140.00	140.00	3	Samsung RF4439d-25A	Verizon
140.00	140.00	3	Samsung LTE CBRS	Verizon
140.00	140.00	3	LNX-6514DS-VTM	Verizon
140.00	140.00	2	DB-T1-6Z-8AB-0Z	Verizon



140.00	140.00	6	KS-24019	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
130.00	130.00	3	APXVSPP18-C-A20	Sprint
130.00	130.00	3	APXVTM14-C-120	Sprint
130.00	130.00	3	TD-RRH8x20-25	Sprint
130.00	130.00	3	1900MHz RRH	Sprint
130.00	130.00	3	800 MHz RRH	Sprint
130.00	130.00	3	800MHz Filter	Sprint
130.00	130.00	3	RF Filters	Sprint
130.00	130.00	4	ACU-A20-N	Sprint
130.00	130.00	1	Low Profile Platform	Sprint
92.00	92.00	2	MF-900B	Town of South
92.00	95.00	1	ANT4506-9	Town of South
92.00	97.00	1	ANT150D3	Town of South
92.00	92.00	1	ANT450Y10-WR	Town of South
92.00	101.00	1	DB205	Town of South
92.00	92.00	1	Low Profile Platform	Town of South

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	187.00	Inside	1/2" Coax	Town of South
0.00	187.00	Inside	7/8" Coax	Town of South
0.00	170.00	Inside	1 5/8" Coax	AT&T
0.00	170.00	Inside	1/2" Coax	AT&T
0.00	170.00	Inside	1/2" Fiber	AT&T
0.00	170.00	Inside	3" Conduit	AT&T
0.00	170.00	Inside	3/4" DC Power	AT&T
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Fiber	T-Mobile
0.00	150.00	Outside	1.6" Hybrid	Dish Wireless
0.00	140.00	Inside	1 5/8" Coax	Verizon
0.00	140.00	Inside	1 5/8" Hybrid	Verizon
0.00	140.00	Inside	1/2" Coax	Verizon
0.00	130.00	Inside	0.7" Fiber	Sprint
0.00	130.00	Inside	1-1/4" Hybrid	Sprint
0.00	92.00	Inside	1/2" Coax	Town of South

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
26	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	78.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	6605.0	50.6	81.6
0.9D + 1.6W 97 mph Wind	6519.9	50.6	61.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	2361.9	17.1	136.5
1.2D + 1.0E	290.6	2.3	81.7
0.9D + 1.0E	286.5	2.3	61.2
1.0D + 1.0W 60 mph Wind	1568.3	12.1	68.0

Structure: CT07824-S-SBA - Coax Line Placement

Type: Monopole
Site Name: South Windsor
Height: 187.00 (ft)

6/28/2022

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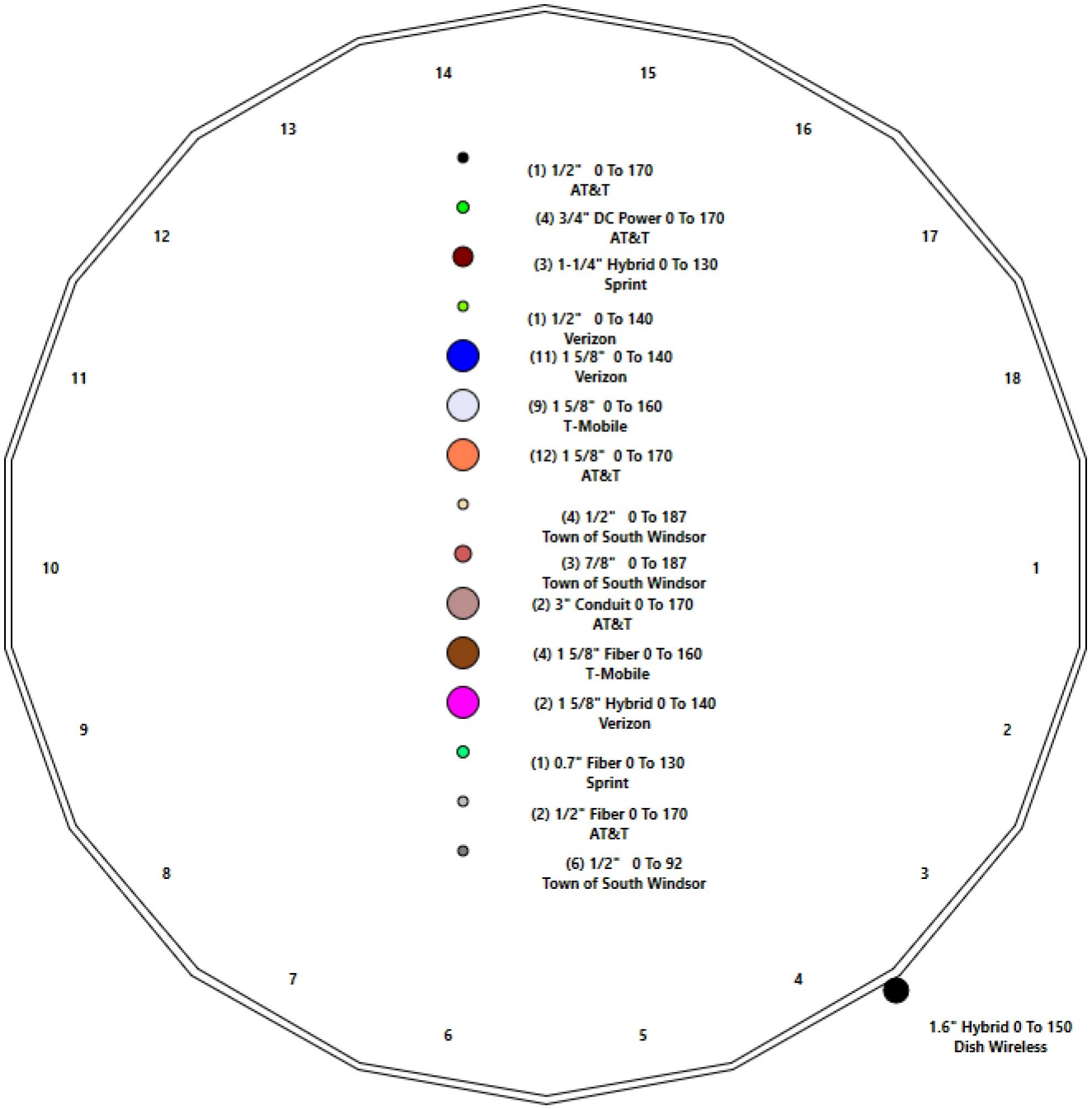

Shaft Properties

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.5000	65		0.00	16,752
2	18	53.500	0.4375	65	Slip	84.00	12,268
3	18	53.500	0.3750	65	Slip	72.00	8,324
4	18	44.250	0.2500	65	Slip	54.00	3,445
					Total Shaft Weight:		**40,789**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	64.88	0.00	102.1	53501.66	21.47	129.76	52.63	53.25	82.73	28410.2	17.15	105.2	0.229973
2	55.12	46.25	75.93	28683.85	20.80	125.99	42.82	99.75	58.84	13351.6	15.85	97.86	0.229973
3	44.95	93.75	53.05	13313.85	19.72	119.85	32.64	147.25	38.40	5051.60	13.94	87.04	0.229973
4	34.18	142.7	26.92	3914.66	22.69	136.71	24.00	187.00	18.84	1343.00	15.52	96.00	0.229973

Load Summary

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	187.00	MF-900B	2	13.00	3.45	1.00	166.21	36.699	1.00	1.00	0.00
2	187.00	ANT900D6-9	2	11.00	0.98	1.00	62.89	4.260	1.00	0.00	2.04
3	187.00	ANT450F6	1	21.00	1.86	1.00	87.88	5.722	1.00	0.00	3.92
4	187.00	DB201	2	25.00	3.54	1.00	174.30	18.389	1.00	0.00	4.75
5	187.00	Low Profile Platform	1	1500.00	22.00	1.00	3285.07	46.087	1.00	0.00	0.00
6	187.00	6' Lightning rod	1	6.50	0.38	1.00	56.01	1.863	1.00	0.00	0.00
7	171.80	Ericsson Air6419 N77G	3	66.10	3.80	0.76	196.21	4.876	0.76	0.00	0.00
8	170.00	Cci DMP65R-BU6DA	3	79.40	12.71	0.72	477.31	14.688	0.72	0.00	0.00
9	170.00	Quintel QD6616-7	3	79.40	14.29	0.73	532.27	16.365	0.73	0.00	0.00
10	170.00	CCI DTMABP7819VG12A TMA	3	19.20	1.14	0.67	53.68	2.180	0.67	0.00	0.00
11	170.00	Kaelus DBC0061F1V51-2	6	25.40	0.43	0.67	45.04	0.815	0.67	0.00	0.00
12	170.00	Ericsson RRUS-32	3	77.00	1.65	0.67	150.35	2.459	0.67	0.00	0.00
13	170.00	Ericsson RRUS 8843 B2 B66A	3	70.00	1.64	0.67	132.12	2.337	0.67	0.00	0.00
14	170.00	Ericsson RRUS 4449 B5/B12	3	71.00	1.97	0.67	143.11	2.709	0.67	0.00	0.00
15	170.00	Ericsson 4478 B14	3	59.90	1.84	0.67	123.39	2.551	0.67	0.00	0.00
16	170.00	CSS DBC-750	3	4.80	0.51	0.67	17.86	1.225	0.67	0.00	0.00
17	170.00	Raycap DC6-48-60-18-8F	3	31.80	0.92	1.00	115.32	1.512	1.00	0.00	0.00
18	170.00	Commscope ABT-DFDM-ADBH	3	1.10	0.05	0.67	4.11	0.310	0.67	0.00	0.00
19	170.00	Low Profile Platform w/ HRK12	1	1700.00	27.70	1.00	3704.00	57.741	1.00	0.00	0.00
20	168.20	Ericsson Air6449 N77D	3	88.00	4.13	0.85	285.89	5.314	0.85	0.00	0.00
21	160.00	AIR6449 B41	3	103.00	5.65	0.71	287.12	6.926	0.71	0.00	0.00
22	160.00	SDX1926Q-43	3	4.30	0.52	0.50	19.50	1.234	0.50	0.00	0.00
23	160.00	Platform w/ Hand Rail	1	1600.00	32.00	1.00	4419.67	69.496	1.00	0.00	0.00
24	160.00	Air32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	395.55	8.110	0.87	0.00	0.00
25	160.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	713.90	22.824	0.70	0.00	0.00
26	160.00	KRY 112 144/1	3	11.00	0.41	0.50	25.48	1.048	0.50	0.00	0.00
27	160.00	RRUS 4415 B25	3	46.00	1.64	0.67	101.19	2.332	0.67	0.00	0.00
28	160.00	4449 B71+B12	3	70.00	1.65	0.67	169.94	2.399	0.67	0.00	0.00
29	160.00	MS-KI22-5 (Kickers)	1	146.00	5.33	1.00	419.72	12.824	1.00	0.00	0.00
30	160.00	MS-1436 (Light Collar Mount)	1	65.60	1.50	1.00	188.59	3.609	1.00	0.00	0.00
31	150.00	MX08FRO665-21	3	64.50	12.49	0.74	452.59	14.444	0.74	0.00	0.00
32	150.00	TA08025-B605	3	75.00	1.96	0.67	144.79	2.708	0.67	0.00	0.00
33	150.00	TA08025-B604	3	63.90	1.96	0.67	131.45	2.708	0.67	0.00	0.00
34	150.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	92.95	2.768	1.00	0.00	0.00
35	150.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3978.94	00.610	1.00	0.00	0.00
36	140.00	Commscope NHH-65B-R2B	3	43.70	8.08	0.83	327.71	9.831	0.83	0.00	0.00
37	140.00	Commscope NHHSS-65B-R2B	3	48.10	8.08	0.83	332.11	9.831	0.83	0.00	0.00
38	140.00	Samsung MT6407-77A	3	79.40	4.69	0.70	248.83	5.964	0.70	0.00	0.00
39	140.00	VZWSMART-PLK1	1	504.00	12.25	1.00	1296.57	28.114	1.00	0.00	0.00
40	140.00	PRK-SFS	1	588.00	9.50	1.00	1131.92	22.682	1.00	0.00	0.00
41	140.00	Samsung RF4440d-13A RRU	3	70.30	1.87	0.67	174.74	2.654	0.67	0.00	0.00
42	140.00	Samsung RF4439d-25A RRU	3	74.70	1.88	0.67	134.82	2.610	0.67	0.00	0.00
43	140.00	Samsung LTE CBRS RT4401 48A	3	18.60	0.99	0.67	55.30	1.549	0.67	0.00	0.00
44	140.00	LNX-6514DS-VTM	3	38.80	8.09	0.80	310.18	11.794	0.82	0.00	0.00
45	140.00	DB-T1-6Z-8AB-0Z	2	44.00	4.10	0.91	367.17	5.162	0.91	0.00	0.00
46	140.00	KS-24019	6	0.50	0.12	1.00	9.31	0.392	1.00	0.00	0.00
47	140.00	Low Profile Platform	1	1500.00	22.00	1.00	3234.45	45.404	1.00	0.00	0.00
48	130.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	284.37	11.695	0.85	0.00	0.00
49	130.00	APXVTM14-C-120	3	56.00	6.34	0.79	280.65	7.834	0.81	0.00	0.00
50	130.00	TD-RRH8x20-25	3	70.00	4.05	0.50	225.04	5.146	0.50	0.00	0.00

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
51	130.00	1900MHz RRH	3	44.00	3.80	0.67	187.59	5.628	0.67	0.00	0.00
52	130.00	800 MHz RRH	3	53.00	2.49	0.67	150.29	3.994	0.67	0.00	0.00
53	130.00	800MHz Filter	3	8.80	0.78	0.67	32.01	1.631	0.67	0.00	0.00
54	130.00	RF Filters	3	15.50	0.93	0.67	61.42	1.512	0.67	0.00	0.00
55	130.00	ACU-A20-N	4	1.00	0.14	0.50	6.65	0.530	0.50	0.00	0.00
56	130.00	Low Profile Platform	1	1500.00	22.00	1.00	3221.74	45.232	1.00	0.00	0.00
57	92.00	MF-900B	2	13.00	3.45	1.00	155.80	34.440	1.00	1.00	0.00
58	92.00	ANT4506-9	1	18.00	2.77	1.00	122.90	6.622	1.00	0.00	3.00
59	92.00	ANT150D3	1	18.00	2.18	1.00	110.97	12.978	1.00	0.00	5.00
60	92.00	ANT450Y10-WR	1	5.00	0.49	1.00	30.77	1.927	1.00	0.00	0.00
61	92.00	DB205	1	38.00	1.80	1.00	111.64	9.860	1.00	0.00	9.00
62	92.00	Low Profile Platform	1	1500.00	22.00	1.00	3163.75	44.450	1.00	0.00	0.00
		Totals:	**152**	**18,900.90**			**53,297.53**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	187.00	(4) 1/2" Coax	0.00	Inside
0.00	187.00	(3) 7/8" Coax	0.00	Inside
0.00	170.00	(12) 1 5/8" Coax	0.00	Inside
0.00	170.00	(1) 1/2" Coax	0.00	Inside
0.00	170.00	(2) 1/2" Fiber	0.00	Inside
0.00	170.00	(2) 3" Conduit	0.00	Inside
0.00	170.00	(4) 3/4" DC Power	0.00	Inside
0.00	160.00	(9) 1 5/8" Coax	0.00	Inside
0.00	160.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	150.00	(1) 1.6" Hybrid	0.00	Outside
0.00	140.00	(11) 1 5/8" Coax	0.00	Inside
0.00	140.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	140.00	(1) 1/2" Coax	0.00	Inside
0.00	130.00	(1) 0.7" Fiber	0.00	Inside
0.00	130.00	(3) 1-1/4" Hybrid	0.00	Inside
0.00	92.00	(6) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	64.880	102.167	53501.7	21.47	129.76	76.1	1624.	0.0
5.00		0.5000	63.730	100.343	50685.8	21.06	127.46	76.6	1566.	1722.7
10.00		0.5000	62.580	98.518	47970.6	20.66	125.16	77.1	1509.	1691.7
15.00		0.5000	61.430	96.693	45354.1	20.25	122.86	77.6	1454.	1660.6
20.00		0.5000	60.281	94.868	42834.5	19.85	120.56	78.1	1399.	1629.6
25.00		0.5000	59.131	93.044	40410.0	19.44	118.26	78.5	1346.	1598.6
30.00		0.5000	57.981	91.219	38078.8	19.04	115.96	79.0	1293.	1567.5
35.00		0.5000	56.831	89.394	35839.0	18.63	113.66	79.5	1242.	1536.5
40.00		0.5000	55.681	87.569	33688.7	18.23	111.36	80.0	1191.	1505.4
45.00		0.5000	54.531	85.744	31626.3	17.82	109.06	80.4	1142.	1474.4
46.25	Bot - Section 2	0.5000	54.244	85.288	31124.2	17.72	108.49	80.6	1130.	363.7
50.00		0.5000	53.381	83.920	29649.8	17.41	106.76	80.9	1094.	2040.8
53.25	Top - Section 1	0.4375	53.509	73.694	26224.3	20.16	122.31	0.0	0.0	1742.2
55.00		0.4375	53.106	73.135	25632.3	19.99	121.39	77.9	950.7	437.2
60.00		0.4375	51.957	71.538	23989.8	19.53	118.76	78.4	909.4	1230.7
65.00		0.4375	50.807	69.941	22419.1	19.07	116.13	79.0	869.1	1203.6
70.00		0.4375	49.657	68.345	20918.5	18.60	113.50	79.5	829.7	1176.4
75.00		0.4375	48.507	66.748	19486.4	18.14	110.87	80.1	791.2	1149.2
80.00		0.4375	47.357	65.151	18121.2	17.68	108.24	80.6	753.7	1122.1
85.00		0.4375	46.207	63.555	16821.3	17.21	105.62	81.2	717.0	1094.9
90.00		0.4375	45.057	61.958	15585.1	16.75	102.99	81.7	681.3	1067.7
92.00		0.4375	44.597	61.319	15108.1	16.56	101.94	81.9	667.2	419.5
93.75	Bot - Section 3	0.4375	44.195	60.761	14698.7	16.40	101.02	82.1	655.1	363.5
95.00		0.4375	43.908	60.361	14410.9	16.29	100.36	82.2	646.4	482.5
99.75	Top - Section 2	0.3750	43.565	51.405	12115.2	19.07	116.17	0.0	0.0	1804.8
100.00		0.3750	43.508	51.337	12066.9	19.05	116.02	79.0	546.3	43.7
105.00		0.3750	42.358	49.968	11127.3	18.51	112.95	79.6	517.4	861.8
110.00		0.3750	41.208	48.600	10237.8	17.97	109.89	80.3	489.3	838.5
115.00		0.3750	40.058	47.231	9397.1	17.42	106.82	80.9	462.0	815.2
120.00		0.3750	38.908	45.862	8603.6	16.88	103.76	81.5	435.5	791.9
125.00		0.3750	37.758	44.494	7856.2	16.34	100.69	82.2	409.8	768.7
130.00		0.3750	36.608	43.125	7153.3	15.80	97.62	82.5	384.9	745.4
135.00		0.3750	35.459	41.757	6493.6	15.26	94.56	82.5	360.7	722.1
140.00		0.3750	34.309	40.388	5875.9	14.72	91.49	82.5	337.3	698.8
142.75	Bot - Section 4	0.3750	33.676	39.635	5553.4	14.42	89.80	82.5	324.8	374.4
145.00		0.3750	33.159	39.020	5298.5	14.18	88.42	82.5	314.7	505.6
147.25	Top - Section 3	0.2500	33.141	26.098	3567.2	21.96	132.57	0.0	0.0	497.8
150.00		0.2500	32.509	25.597	3365.4	21.52	130.04	76.1	203.9	241.9
155.00		0.2500	31.359	24.684	3018.2	20.71	125.44	77.0	189.6	427.7
160.00		0.2500	30.209	23.772	2695.7	19.90	120.84	78.0	175.8	412.2
165.00		0.2500	29.059	22.859	2397.1	19.09	116.24	79.0	162.5	396.7
168.20		0.2500	28.323	22.276	2218.1	18.57	113.29	79.6	154.2	245.7
170.00		0.2500	27.910	21.947	2121.4	18.27	111.64	79.9	149.7	135.4
171.80		0.2500	27.496	21.619	2027.6	17.98	109.98	80.3	145.2	133.4
175.00		0.2500	26.760	21.035	1867.7	17.46	107.04	80.9	137.5	232.2
180.00		0.2500	25.610	20.122	1635.0	16.65	102.44	81.8	125.7	350.1
185.00		0.2500	24.460	19.210	1422.5	15.84	97.84	82.5	114.5	334.6
187.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	129.5
										40789.2

Wind Loading - Shaft

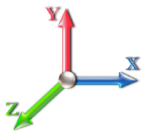
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	490.97	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	482.27	0.650	0.000	5.00	27.207	17.68	605.4	0.0	2067.3
10.00		1.00	0.85	19.450	21.40	473.57	0.650	0.000	5.00	26.721	17.37	594.6	0.0	2030.0
15.00		1.00	0.86	19.690	21.66	467.73	0.650	0.000	5.00	26.234	17.05	590.9	0.0	1992.8
20.00		1.00	0.91	20.851	22.94	472.30	0.650	0.000	5.00	25.748	16.74	614.2	0.0	1955.5
25.00		1.00	0.95	21.810	23.99	473.83	0.650	0.000	5.00	25.261	16.42	630.3	0.0	1918.3
30.00		1.00	0.99	22.632	24.90	473.30	0.650	0.000	5.00	24.775	16.10	641.4	0.0	1881.0
35.00		1.00	1.02	23.356	25.69	471.27	0.650	0.000	5.00	24.288	15.79	649.0	0.0	1843.8
40.00		1.00	1.05	24.004	26.40	468.10	0.650	0.000	5.00	23.802	15.47	653.6	0.0	1806.5
45.00		1.00	1.07	24.593	27.05	464.02	0.650	0.000	5.00	23.315	15.15	656.0	0.0	1769.2
46.25	Bot - Section 2	1.00	1.08	24.732	27.21	462.88	0.650	0.000	1.25	5.753	3.74	162.8	0.0	436.5
50.00		1.00	1.10	25.133	27.65	459.20	0.650	0.000	3.75	17.353	11.28	499.0	0.0	2449.0
53.25	Top - Section 1	1.00	1.11	25.462	28.01	455.72	0.650	0.000	3.25	14.818	9.63	431.6	0.0	2090.7
55.00		1.00	1.12	25.633	28.20	461.35	0.650	0.000	1.75	7.894	5.13	231.5	0.0	524.6
60.00		1.00	1.14	26.099	28.71	455.44	0.650	0.000	5.00	22.226	14.45	663.6	0.0	1476.9
65.00		1.00	1.16	26.535	29.19	449.07	0.650	0.000	5.00	21.739	14.13	659.9	0.0	1444.3
70.00		1.00	1.18	26.946	29.64	442.30	0.650	0.000	5.00	21.253	13.81	655.1	0.0	1411.7
75.00		1.00	1.19	27.335	30.07	435.16	0.650	0.000	5.00	20.766	13.50	649.4	0.0	1379.1
80.00		1.00	1.21	27.704	30.47	427.70	0.650	0.000	5.00	20.280	13.18	642.7	0.0	1346.5
85.00		1.00	1.23	28.056	30.86	419.96	0.650	0.000	5.00	19.793	12.87	635.3	0.0	1313.9
90.00		1.00	1.24	28.391	31.23	411.95	0.650	0.000	5.00	19.307	12.55	627.1	0.0	1281.3
92.00	Appurtenance(s)	1.00	1.25	28.522	31.37	408.68	0.650	0.000	2.00	7.586	4.93	247.5	0.0	503.4
93.75	Bot - Section 3	1.00	1.25	28.634	31.50	405.79	0.650	0.000	1.75	6.574	4.27	215.4	0.0	436.2
95.00		1.00	1.25	28.713	31.58	403.70	0.650	0.000	1.25	4.739	3.08	155.7	0.0	579.0
99.75	Top - Section 2	1.00	1.27	29.006	31.91	395.67	0.650	0.000	4.75	17.730	11.52	588.3	0.0	2165.7
100.00		1.00	1.27	29.021	31.92	402.17	0.650	0.000	0.25	0.921	0.60	30.6	0.0	52.4
105.00		1.00	1.28	29.318	32.25	393.54	0.650	0.000	5.00	18.165	11.81	609.2	0.0	1034.2
110.00		1.00	1.29	29.604	32.56	384.72	0.650	0.000	5.00	17.678	11.49	598.7	0.0	1006.2
115.00		1.00	1.31	29.880	32.87	375.72	0.650	0.000	5.00	17.192	11.17	587.7	0.0	978.3
120.00		1.00	1.32	30.147	33.16	366.56	0.650	0.000	5.00	16.705	10.86	576.1	0.0	950.3
125.00		1.00	1.33	30.405	33.45	357.25	0.650	0.000	5.00	16.219	10.54	564.1	0.0	922.4
130.00	Appurtenance(s)	1.00	1.34	30.655	33.72	347.79	0.650	0.000	5.00	15.732	10.23	551.7	0.0	894.4
135.00		1.00	1.35	30.898	33.99	338.20	0.650	0.000	5.00	15.246	9.91	538.9	0.0	866.5
140.00	Appurtenance(s)	1.00	1.36	31.133	34.25	328.48	0.650	0.000	5.00	14.759	9.59	525.7	0.0	838.6
142.75	Bot - Section 4	1.00	1.37	31.260	34.39	323.08	0.650	0.000	2.75	7.910	5.14	282.9	0.0	449.3
145.00		1.00	1.37	31.362	34.50	318.63	0.650	0.000	2.25	6.458	4.20	231.7	0.0	606.8
147.25	Top - Section 3	1.00	1.37	31.464	34.61	314.17	0.650	0.000	2.25	6.359	4.13	228.9	0.0	597.3
150.00	Appurtenance(s)	1.00	1.38	31.586	34.74	313.50	0.650	0.000	2.75	7.638	4.97	276.0	0.0	290.2
155.00		1.00	1.39	31.803	34.98	303.45	0.650	0.000	5.00	13.511	8.78	491.6	0.0	513.3
160.00	Appurtenance(s)	1.00	1.40	32.015	35.22	293.29	0.650	0.000	5.00	13.025	8.47	477.0	0.0	494.7
165.00		1.00	1.41	32.222	35.44	283.04	0.650	0.000	5.00	12.538	8.15	462.2	0.0	476.0
168.20	Appurtenance(s)	1.00	1.41	32.351	35.59	276.43	0.650	0.000	3.20	7.769	5.05	287.5	0.0	294.9
170.00	Appurtenance(s)	1.00	1.42	32.424	35.67	272.69	0.650	0.000	1.80	4.283	2.78	158.9	0.0	162.5
171.80	Appurtenance(s)	1.00	1.42	32.495	35.74	268.94	0.650	0.000	1.80	4.219	2.74	156.9	0.0	160.1
175.00		1.00	1.43	32.621	35.88	262.25	0.650	0.000	3.20	7.346	4.77	274.1	0.0	278.7
180.00		1.00	1.43	32.814	36.10	251.72	0.650	0.000	5.00	11.079	7.20	415.9	0.0	420.1
185.00		1.00	1.44	33.003	36.30	241.11	0.650	0.000	5.00	10.592	6.88	399.9	0.0	401.5

Wind Loading - Shaft

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

187.00	Appurtenance(s)	1.00	1.45	33.077	36.38	236.84	0.650	0.000	2.00	4.101	2.67	155.2	0.0	155.4
								Totals:	**187.00**			**21,581.4**		**48,947.1**

Discrete Appurtenance Forces

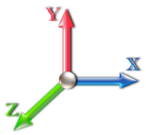
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	Low Profile Platform	1	33.077	36.385	1.00	1.00	22.00	1800.00	0.000	0.000	1280.75	0.00	0.00
2	187.00	DB201	2	33.251	36.576	1.00	1.00	7.08	60.00	0.000	4.750	414.34	0.00	1968.11
3	187.00	ANT450F6	1	33.221	36.543	1.00	1.00	1.86	25.20	0.000	3.917	108.75	0.00	425.95
4	187.00	ANT900D6-9	2	33.152	36.468	1.00	1.00	1.96	26.40	0.000	2.042	114.36	0.00	233.49
5	187.00	MF-900B	2	33.077	36.385	1.00	1.00	6.90	31.20	2.015	0.000	401.69	505.98	0.00
6	187.00	6' Lightning rod	1	33.077	36.385	1.00	1.00	0.38	7.80	0.000	0.000	22.12	0.00	0.00
7	171.80	Ericsson Air6419 N77G	3	32.495	35.745	0.57	0.75	6.50	237.96	0.000	0.000	371.63	0.00	0.00
8	170.00	CCI DTMABP7819VG12A	3	32.424	35.666	0.50	0.75	1.72	69.12	0.000	0.000	98.07	0.00	0.00
9	170.00	Ericsson RRUS-32	3	32.424	35.666	0.50	0.75	2.49	277.20	0.000	0.000	141.94	0.00	0.00
10	170.00	Ericsson RRUS 8843 B2	3	32.424	35.666	0.50	0.75	2.47	252.00	0.000	0.000	141.08	0.00	0.00
11	170.00	Quintel QD6616-7	3	32.424	35.666	0.55	0.75	23.47	285.84	0.000	0.000	1339.41	0.00	0.00
12	170.00	Cci DMP65R-BU6DA	3	32.424	35.666	0.54	0.75	20.59	285.84	0.000	0.000	1174.99	0.00	0.00
13	170.00	Kaelus DBC0061F1V51-2	6	32.424	35.666	0.50	0.75	1.30	182.88	0.000	0.000	73.98	0.00	0.00
14	170.00	Ericsson 4478 B14	3	32.424	35.666	0.50	0.75	2.77	215.64	0.000	0.000	158.29	0.00	0.00
15	170.00	CSS DBC-750	3	32.424	35.666	0.50	0.75	0.77	17.28	0.000	0.000	43.87	0.00	0.00
16	170.00	Raycap DC6-48-60-18-8F	3	32.424	35.666	0.75	0.75	2.07	114.48	0.000	0.000	118.13	0.00	0.00
17	170.00	Commscope	3	32.424	35.666	0.50	0.75	0.08	3.96	0.000	0.000	4.30	0.00	0.00
18	170.00	Low Profile Platform w/	1	32.424	35.666	1.00	1.00	27.70	2040.00	0.000	0.000	1580.72	0.00	0.00
19	170.00	Ericsson RRUS 4449	3	32.424	35.666	0.50	0.75	2.97	255.60	0.000	0.000	169.47	0.00	0.00
20	168.20	Ericsson Air6449 N77D	3	32.351	35.587	0.64	0.75	7.90	316.80	0.000	0.000	449.74	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	32.015	35.216	1.00	1.00	32.00	1920.00	0.000	0.000	1803.08	0.00	0.00
22	160.00	Air32	3	32.015	35.216	0.65	0.75	12.74	475.92	0.000	0.000	718.04	0.00	0.00
23	160.00	APXVAARR24_43-U-NA2	3	32.015	35.216	0.52	0.75	31.88	460.80	0.000	0.000	1796.21	0.00	0.00
24	160.00	SDX1926Q-43	3	32.015	35.216	0.38	0.75	0.58	15.48	0.000	0.000	32.96	0.00	0.00
25	160.00	AIR6449 B41	3	32.015	35.216	0.53	0.75	9.03	370.80	0.000	0.000	508.57	0.00	0.00
26	160.00	MS-KI22-5 (Kickers)	1	32.015	35.216	1.00	1.00	5.33	175.20	0.000	0.000	300.33	0.00	0.00
27	160.00	KRY 112 144/1	3	32.015	35.216	0.38	0.75	0.46	39.60	0.000	0.000	25.99	0.00	0.00
28	160.00	RRUS 4415 B25	3	32.015	35.216	0.50	0.75	2.47	165.60	0.000	0.000	139.30	0.00	0.00
29	160.00	4449 B71+B12	3	32.015	35.216	0.50	0.75	2.49	252.00	0.000	0.000	140.15	0.00	0.00
30	160.00	MS-1436 (Light Collar	1	32.015	35.216	1.00	1.00	1.50	78.72	0.000	0.000	84.52	0.00	0.00
31	150.00	MC-PK8-DSH	1	31.586	34.744	1.00	1.00	37.59	2072.40	0.000	0.000	2089.65	0.00	0.00
32	150.00	RDIDC-9181-OF-48	1	31.586	34.744	0.75	0.75	1.51	26.28	0.000	0.000	83.80	0.00	0.00
33	150.00	TA08025-B605	3	31.586	34.744	0.50	0.75	2.95	270.00	0.000	0.000	164.25	0.00	0.00
34	150.00	MX08FRO665-21	3	31.586	34.744	0.55	0.75	20.80	232.20	0.000	0.000	1156.06	0.00	0.00
35	150.00	TA08025-B604	3	31.586	34.744	0.50	0.75	2.95	230.04	0.000	0.000	164.25	0.00	0.00
36	140.00	Samsung RF4440d-13A	3	31.133	34.247	0.50	0.75	2.82	253.08	0.000	0.000	154.47	0.00	0.00
37	140.00	Commscope	3	31.133	34.247	0.62	0.75	15.09	173.16	0.000	0.000	826.82	0.00	0.00
38	140.00	Samsung MT6407-77A	3	31.133	34.247	0.52	0.75	7.39	285.84	0.000	0.000	404.75	0.00	0.00
39	140.00	VZWSMART-PLK1	1	31.133	34.247	1.00	1.00	12.25	604.80	0.000	0.000	671.23	0.00	0.00
40	140.00	PRK-SFS	1	31.133	34.247	1.00	1.00	9.50	705.60	0.000	0.000	520.55	0.00	0.00
41	140.00	Commscope	3	31.133	34.247	0.62	0.75	15.09	157.32	0.000	0.000	826.82	0.00	0.00
42	140.00	Samsung RF4439d-25A	3	31.133	34.247	0.50	0.75	2.83	268.92	0.000	0.000	155.29	0.00	0.00
43	140.00	Samsung LTE CBRS	3	31.133	34.247	0.50	0.75	1.49	66.96	0.000	0.000	81.78	0.00	0.00
44	140.00	LNX-6514DS-VTM	3	31.133	34.247	0.60	0.75	14.56	139.68	0.000	0.000	797.92	0.00	0.00
45	140.00	DB-T1-6Z-8AB-0Z	2	31.133	34.247	0.68	0.75	5.60	105.60	0.000	0.000	306.66	0.00	0.00
46	140.00	KS-24019	6	31.133	34.247	1.00	1.00	0.72	3.60	0.000	0.000	39.45	0.00	0.00
47	140.00	Low Profile Platform	1	31.133	34.247	1.00	1.00	22.00	1800.00	0.000	0.000	1205.48	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

48	130.00	APXVSPP18-C-A20	3	30.655	33.720	0.66	0.80	15.98	205.20	0.000	0.000	861.94	0.00	0.00
49	130.00	APXVTM14-C-120	3	30.655	33.720	0.63	0.80	12.02	201.60	0.000	0.000	648.54	0.00	0.00
50	130.00	TD-RRH8x20-25	3	30.655	33.720	0.40	0.80	4.86	252.00	0.000	0.000	262.21	0.00	0.00
51	130.00	1900MHz RRH	3	30.655	33.720	0.54	0.80	6.11	158.40	0.000	0.000	329.67	0.00	0.00
52	130.00	800 MHz RRH	3	30.655	33.720	0.54	0.80	4.00	190.80	0.000	0.000	216.02	0.00	0.00
53	130.00	800MHz Filter	3	30.655	33.720	0.54	0.80	1.25	31.68	0.000	0.000	67.67	0.00	0.00
54	130.00	RF Filters	3	30.655	33.720	0.54	0.80	1.50	55.80	0.000	0.000	80.68	0.00	0.00
55	130.00	ACU-A20-N	4	30.655	33.720	0.40	0.80	0.22	4.80	0.000	0.000	12.09	0.00	0.00
56	130.00	Low Profile Platform	1	30.655	33.720	1.00	1.00	22.00	1800.00	0.000	0.000	1186.95	0.00	0.00
57	92.00	Low Profile Platform	1	28.522	31.374	1.00	1.00	22.00	1800.00	0.000	0.000	1104.36	0.00	0.00
58	92.00	DB205	1	29.082	31.990	1.00	1.00	1.80	45.60	0.000	9.000	92.13	0.00	829.18
59	92.00	ANT450Y10-WR	1	28.522	31.374	1.00	1.00	0.49	6.00	0.000	0.000	24.60	0.00	0.00
60	92.00	ANT150D3	1	28.838	31.722	1.00	1.00	2.18	21.60	0.000	5.000	110.65	0.00	553.23
61	92.00	ANT4506-9	1	28.713	31.584	1.00	1.00	2.77	21.60	0.000	3.000	139.98	0.00	419.94
62	92.00	MF-900B	2	28.522	31.374	1.00	1.00	6.90	31.20	2.887	0.000	346.37	624.95	0.00
							Totals:		**22,681.08**			**28,889.87**		

Total Applied Force Summary

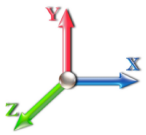
Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		605.39	2389.14	0.00	0.00
10.00		594.56	2351.89	0.00	0.00
15.00		590.95	2314.63	0.00	0.00
20.00		614.16	2277.37	0.00	0.00
25.00		630.27	2240.12	0.00	0.00
30.00		641.45	2202.86	0.00	0.00
35.00		648.96	2165.61	0.00	0.00
40.00		653.62	2128.35	0.00	0.00
45.00		655.96	2091.10	0.00	0.00
46.25		162.77	516.95	0.00	0.00
50.00		498.95	2690.38	0.00	0.00
53.25		431.64	2299.88	0.00	0.00
55.00		231.48	637.25	0.00	0.00
60.00		663.59	1798.72	0.00	0.00
65.00		659.92	1766.12	0.00	0.00
70.00		655.15	1733.52	0.00	0.00
75.00		649.39	1700.93	0.00	0.00
80.00		642.74	1668.33	0.00	0.00
85.00		635.28	1635.73	0.00	0.00
90.00		627.08	1603.13	0.00	0.00
92.00	(7) attachments	2065.62	2558.12	624.95	1802.35
93.75		215.36	546.81	0.00	0.00
95.00		155.66	658.03	0.00	0.00
99.75		588.34	2465.99	0.00	0.00
100.00		30.58	68.25	0.00	0.00
105.00		609.24	1350.25	0.00	0.00
110.00		598.71	1322.31	0.00	0.00
115.00		587.65	1294.36	0.00	0.00
120.00		576.12	1266.42	0.00	0.00
125.00		564.13	1238.48	0.00	0.00
130.00	(26) attachments	4217.48	4110.82	0.00	0.00
135.00		538.88	1163.02	0.00	0.00
140.00	(32) attachments	6516.88	5699.64	0.00	0.00
142.75		282.88	566.85	0.00	0.00
145.00		231.69	702.93	0.00	0.00
147.25		228.89	693.50	0.00	0.00
150.00	(11) attachments	3934.03	3238.71	0.00	0.00
155.00		491.57	715.72	0.00	0.00
160.00	(24) attachments	6026.18	4651.22	0.00	0.00
165.00		462.18	595.91	0.00	0.00
168.20	(3) attachments	737.27	688.40	0.00	0.00
170.00	(37) attachments	5203.11	4205.51	0.00	0.00
171.80	(3) attachments	528.49	402.82	0.00	0.00
175.00		274.13	287.12	0.00	0.00
180.00		415.88	433.34	0.00	0.00
185.00		399.91	414.72	0.00	0.00

Total Applied Force Summary

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

187.00	(9) attachments	2497.18	2111.27	505.98	2627.55
	Totals:	**50,471.31**	**81,662.54**	**1,130.94**	**4,429.90**

Linear Appurtenance Segment Forces (Factored)

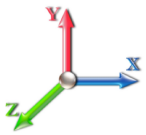
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.28
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.28
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.690	0.00	11.28
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.851	0.00	11.28
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.810	0.00	11.28
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.632	0.00	11.28
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.356	0.00	11.28
40.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.004	0.00	11.28
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.593	0.00	11.28
46.25	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	2.82
50.00	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.000	0.000	25.133	0.00	8.46
53.25	1.6" Hybrid	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.462	0.00	7.33
55.00	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.633	0.00	3.95
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.099	0.00	11.28
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.535	0.00	11.28
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.946	0.00	11.28
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.335	0.00	11.28
80.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.704	0.00	11.28
85.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.056	0.00	11.28
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.391	0.00	11.28
92.00	1.6" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	28.522	0.00	4.51
93.75	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	28.634	0.00	3.95
95.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	2.82
99.75	1.6" Hybrid	Yes	4.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	10.72
100.00	1.6" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	29.021	0.00	0.56
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.318	0.00	11.28
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.604	0.00	11.28
115.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.880	0.00	11.28
120.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	11.28
125.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.405	0.00	11.28
130.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.655	0.00	11.28
135.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.898	0.00	11.28
140.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.133	0.00	11.28
142.75	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	31.260	0.00	6.20
145.00	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	31.362	0.00	5.08
147.25	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	31.464	0.00	5.08
150.00	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	31.586	0.00	6.20
									Totals:		**0.0**	**338.4**

Calculated Forces

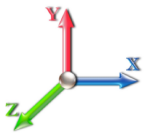
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-81.58	-50.60	-1.11	-6605.0	-0.02	6605.01	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.724
5.00	-79.04	-50.23	-1.11	-6352.0	-0.02	6352.03	6919.93	3459.96	17978.0	9002.40	0.09	-0.172	0.000	0.717
10.00	-76.54	-49.86	-1.11	-6100.9	-0.02	6100.90	6836.37	3418.19	17435.4	8730.69	0.37	-0.347	0.000	0.710
15.00	-74.08	-49.48	-1.11	-5851.6	-0.02	5851.61	6751.25	3375.63	16896.9	8461.01	0.83	-0.524	0.000	0.703
20.00	-71.65	-49.07	-1.11	-5604.2	-0.02	5604.22	6664.57	3332.28	16362.6	8193.47	1.47	-0.704	0.000	0.695
25.00	-69.27	-48.63	-1.11	-5358.8	-0.02	5358.88	6576.31	3288.16	15832.7	7928.16	2.31	-0.886	0.000	0.687
30.00	-66.92	-48.17	-1.11	-5115.7	-0.02	5115.75	6486.49	3243.25	15307.6	7665.22	3.33	-1.070	0.000	0.678
35.00	-64.61	-47.69	-1.11	-4874.9	-0.02	4874.92	6395.11	3197.55	14787.5	7404.75	4.56	-1.257	0.000	0.669
40.00	-62.34	-47.19	-1.11	-4636.5	-0.02	4636.50	6302.15	3151.08	14272.4	7146.85	5.97	-1.446	0.000	0.659
45.00	-60.17	-46.60	-1.11	-4400.5	-0.02	4400.56	6207.63	3103.82	13762.8	6891.65	7.59	-1.636	0.000	0.648
46.25	-59.58	-46.53	-1.11	-4342.3	-0.02	4342.31	6183.76	3091.88	13636.3	6828.29	8.03	-1.686	0.000	0.646
50.00	-56.80	-46.08	-1.11	-4167.8	-0.03	4167.84	6111.55	3055.77	13258.8	6639.26	9.41	-1.831	0.000	0.637
53.25	-54.44	-45.67	-1.12	-4018.0	-0.03	4018.08	5153.03	2576.51	11233.0	5624.85	10.70	-1.959	0.000	0.725
55.00	-53.69	-45.55	-1.12	-3938.1	-0.03	3938.17	5126.51	2563.25	11089.7	5553.12	11.43	-2.029	0.000	0.720
60.00	-51.76	-45.01	-1.12	-3710.4	-0.03	3710.44	5049.68	2524.84	10683.1	5349.50	13.67	-2.241	-0.001	0.704
65.00	-49.85	-44.46	-1.12	-3485.4	-0.03	3485.40	4971.29	2485.64	10280.5	5147.92	16.13	-2.454	-0.001	0.687
70.00	-47.99	-43.91	-1.12	-3263.0	-0.03	3263.09	4891.33	2445.66	9882.29	4948.49	18.82	-2.668	-0.001	0.670
75.00	-46.16	-43.35	-1.12	-3043.5	-0.04	3043.54	4809.80	2404.90	9488.55	4751.33	21.73	-2.883	-0.001	0.650
80.00	-44.36	-42.79	-1.12	-2826.7	-0.04	2826.78	4726.70	2363.35	9099.56	4556.54	24.86	-3.097	-0.001	0.630
85.00	-42.61	-42.22	-1.12	-2612.8	-0.04	2612.84	4642.04	2321.02	8715.55	4364.25	28.22	-3.311	-0.001	0.608
90.00	-40.94	-41.61	-1.12	-2401.7	-0.04	2401.73	4555.82	2277.91	8336.73	4174.56	31.80	-3.523	-0.001	0.585
92.00	-38.46	-39.44	-0.50	-2316.7	0.00	2316.72	4520.89	2260.44	8186.70	4099.44	33.29	-3.609	-0.001	0.574
93.75	-37.88	-39.23	-0.50	-2247.7	0.00	2247.70	4490.12	2245.06	8056.16	4034.07	34.63	-3.684	-0.001	0.566
95.00	-37.15	-39.12	-0.50	-2198.6	-0.01	2198.66	4468.02	2234.01	7963.33	3987.58	35.60	-3.738	-0.001	0.560
99.75	-34.66	-38.43	-0.50	-2012.8	-0.01	2012.85	3653.35	1826.67	6478.28	3243.96	39.42	-3.935	-0.001	0.630
100.00	-34.51	-38.46	-0.50	-2003.2	-0.01	2003.25	3649.96	1824.98	6463.57	3236.59	39.62	-3.946	-0.001	0.629
105.00	-33.06	-37.89	-0.50	-1810.9	-0.01	1810.93	3581.25	1790.63	6171.38	3090.28	43.88	-4.171	-0.001	0.596
110.00	-31.65	-37.31	-0.50	-1621.4	-0.02	1621.48	3510.98	1755.49	5883.11	2945.93	48.36	-4.390	-0.001	0.560
115.00	-30.27	-36.74	-0.50	-1434.9	-0.02	1434.92	3439.14	1719.57	5598.97	2803.65	53.07	-4.603	-0.001	0.521
120.00	-28.93	-36.16	-0.50	-1251.2	-0.02	1251.24	3365.73	1682.87	5319.21	2663.56	57.99	-4.806	-0.001	0.479
125.00	-27.63	-35.58	-0.50	-1070.4	-0.03	1070.45	3290.76	1645.38	5044.03	2525.77	63.13	-4.998	-0.001	0.433
130.00	-23.82	-31.08	-0.50	-892.56	-0.03	892.56	3204.00	1602.00	4758.48	2382.78	68.45	-5.176	-0.002	0.382
135.00	-22.63	-30.50	-0.50	-737.14	-0.03	737.14	3102.32	1551.16	4459.76	2233.19	73.96	-5.338	-0.002	0.338
140.00	-17.53	-23.51	-0.50	-584.63	-0.04	584.63	3000.64	1500.32	4170.72	2088.46	79.62	-5.482	-0.002	0.286
142.75	-16.96	-23.19	-0.50	-519.98	-0.04	519.98	2944.72	1472.36	4015.87	2010.92	82.79	-5.556	-0.002	0.265
145.00	-16.26	-22.91	-0.50	-467.80	-0.04	467.80	2898.96	1449.48	3891.36	1948.57	85.42	-5.613	-0.002	0.246
147.25	-15.57	-22.63	-0.50	-416.26	-0.04	416.26	1774.96	887.48	2399.50	1201.53	88.08	-5.666	-0.002	0.356
150.00	-12.71	-18.41	-0.50	-354.03	-0.04	354.03	1752.91	876.46	2323.79	1163.62	91.35	-5.726	-0.002	0.312
155.00	-12.01	-17.88	-0.50	-261.96	-0.05	261.96	1711.62	855.81	2187.55	1095.40	97.41	-5.856	-0.002	0.247
160.00	-7.99	-11.42	-0.50	-172.58	-0.05	172.58	1668.76	834.38	2053.31	1028.18	103.60	-5.959	-0.002	0.173
165.00	-7.43	-10.90	-0.50	-115.50	-0.05	115.50	1624.34	812.17	1921.31	962.08	109.87	-6.035	-0.003	0.125
168.20	-6.82	-10.10	-0.50	-80.62	-0.05	80.62	1595.09	797.54	1838.10	920.41	113.92	-6.072	-0.003	0.092
170.00	-3.19	-4.48	-0.50	-62.44	-0.05	62.44	1578.35	789.17	1791.75	897.21	116.21	-6.088	-0.003	0.072
171.80	-2.85	-3.91	-0.50	-54.37	-0.05	54.37	1561.41	780.70	1745.76	874.18	118.50	-6.102	-0.003	0.064
175.00	-2.59	-3.61	-0.50	-41.85	-0.05	41.85	1530.79	765.40	1664.88	833.68	122.59	-6.124	-0.003	0.052
180.00	-2.20	-3.15	-0.50	-23.80	-0.05	23.80	1481.67	740.83	1540.90	771.60	129.01	-6.149	-0.004	0.032
185.00	-1.83	-2.71	-0.50	-8.05	-0.05	8.05	1427.20	713.60	1416.30	709.20	135.44	-6.163	-0.004	0.013
187.00	0.00	-2.50	-0.51	-2.63	0.00	2.63	1400.09	700.04	1362.73	682.38	138.02	-6.165	-0.004	0.004

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Wind Loading - Shaft

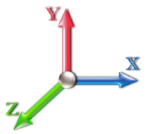
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	490.97	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	482.27	0.650	0.000	5.00	27.207	17.68	605.4	0.0	1550.5
10.00		1.00	0.85	19.450	21.40	473.57	0.650	0.000	5.00	26.721	17.37	594.6	0.0	1522.5
15.00		1.00	0.86	19.690	21.66	467.73	0.650	0.000	5.00	26.234	17.05	590.9	0.0	1494.6
20.00		1.00	0.91	20.851	22.94	472.30	0.650	0.000	5.00	25.748	16.74	614.2	0.0	1466.6
25.00		1.00	0.95	21.810	23.99	473.83	0.650	0.000	5.00	25.261	16.42	630.3	0.0	1438.7
30.00		1.00	0.99	22.632	24.90	473.30	0.650	0.000	5.00	24.775	16.10	641.4	0.0	1410.8
35.00		1.00	1.02	23.356	25.69	471.27	0.650	0.000	5.00	24.288	15.79	649.0	0.0	1382.8
40.00		1.00	1.05	24.004	26.40	468.10	0.650	0.000	5.00	23.802	15.47	653.6	0.0	1354.9
45.00		1.00	1.07	24.593	27.05	464.02	0.650	0.000	5.00	23.315	15.15	656.0	0.0	1326.9
46.25	Bot - Section 2	1.00	1.08	24.732	27.21	462.88	0.650	0.000	1.25	5.753	3.74	162.8	0.0	327.4
50.00		1.00	1.10	25.133	27.65	459.20	0.650	0.000	3.75	17.353	11.28	499.0	0.0	1836.7
53.25	Top - Section 1	1.00	1.11	25.462	28.01	455.72	0.650	0.000	3.25	14.818	9.63	431.6	0.0	1568.0
55.00		1.00	1.12	25.633	28.20	461.35	0.650	0.000	1.75	7.894	5.13	231.5	0.0	393.5
60.00		1.00	1.14	26.099	28.71	455.44	0.650	0.000	5.00	22.226	14.45	663.6	0.0	1107.7
65.00		1.00	1.16	26.535	29.19	449.07	0.650	0.000	5.00	21.739	14.13	659.9	0.0	1083.2
70.00		1.00	1.18	26.946	29.64	442.30	0.650	0.000	5.00	21.253	13.81	655.1	0.0	1058.8
75.00		1.00	1.19	27.335	30.07	435.16	0.650	0.000	5.00	20.766	13.50	649.4	0.0	1034.3
80.00		1.00	1.21	27.704	30.47	427.70	0.650	0.000	5.00	20.280	13.18	642.7	0.0	1009.9
85.00		1.00	1.23	28.056	30.86	419.96	0.650	0.000	5.00	19.793	12.87	635.3	0.0	985.4
90.00		1.00	1.24	28.391	31.23	411.95	0.650	0.000	5.00	19.307	12.55	627.1	0.0	961.0
92.00	Appurtenance(s)	1.00	1.25	28.522	31.37	408.68	0.650	0.000	2.00	7.586	4.93	247.5	0.0	377.5
93.75	Bot - Section 3	1.00	1.25	28.634	31.50	405.79	0.650	0.000	1.75	6.574	4.27	215.4	0.0	327.1
95.00		1.00	1.25	28.713	31.58	403.70	0.650	0.000	1.25	4.739	3.08	155.7	0.0	434.3
99.75	Top - Section 2	1.00	1.27	29.006	31.91	395.67	0.650	0.000	4.75	17.730	11.52	588.3	0.0	1624.3
100.00		1.00	1.27	29.021	31.92	402.17	0.650	0.000	0.25	0.921	0.60	30.6	0.0	39.3
105.00		1.00	1.28	29.318	32.25	393.54	0.650	0.000	5.00	18.165	11.81	609.2	0.0	775.6
110.00		1.00	1.29	29.604	32.56	384.72	0.650	0.000	5.00	17.678	11.49	598.7	0.0	754.7
115.00		1.00	1.31	29.880	32.87	375.72	0.650	0.000	5.00	17.192	11.17	587.7	0.0	733.7
120.00		1.00	1.32	30.147	33.16	366.56	0.650	0.000	5.00	16.705	10.86	576.1	0.0	712.7
125.00		1.00	1.33	30.405	33.45	357.25	0.650	0.000	5.00	16.219	10.54	564.1	0.0	691.8
130.00	Appurtenance(s)	1.00	1.34	30.655	33.72	347.79	0.650	0.000	5.00	15.732	10.23	551.7	0.0	670.8
135.00		1.00	1.35	30.898	33.99	338.20	0.650	0.000	5.00	15.246	9.91	538.9	0.0	649.9
140.00	Appurtenance(s)	1.00	1.36	31.133	34.25	328.48	0.650	0.000	5.00	14.759	9.59	525.7	0.0	628.9
142.75	Bot - Section 4	1.00	1.37	31.260	34.39	323.08	0.650	0.000	2.75	7.910	5.14	282.9	0.0	337.0
145.00		1.00	1.37	31.362	34.50	318.63	0.650	0.000	2.25	6.458	4.20	231.7	0.0	455.1
147.25	Top - Section 3	1.00	1.37	31.464	34.61	314.17	0.650	0.000	2.25	6.359	4.13	228.9	0.0	448.0
150.00	Appurtenance(s)	1.00	1.38	31.586	34.74	313.50	0.650	0.000	2.75	7.638	4.97	276.0	0.0	217.7
155.00		1.00	1.39	31.803	34.98	303.45	0.650	0.000	5.00	13.511	8.78	491.6	0.0	385.0
160.00	Appurtenance(s)	1.00	1.40	32.015	35.22	293.29	0.650	0.000	5.00	13.025	8.47	477.0	0.0	371.0
165.00		1.00	1.41	32.222	35.44	283.04	0.650	0.000	5.00	12.538	8.15	462.2	0.0	357.0
168.20	Appurtenance(s)	1.00	1.41	32.351	35.59	276.43	0.650	0.000	3.20	7.769	5.05	287.5	0.0	221.2
170.00	Appurtenance(s)	1.00	1.42	32.424	35.67	272.69	0.650	0.000	1.80	4.283	2.78	158.9	0.0	121.9
171.80	Appurtenance(s)	1.00	1.42	32.495	35.74	268.94	0.650	0.000	1.80	4.219	2.74	156.9	0.0	120.1
175.00		1.00	1.43	32.621	35.88	262.25	0.650	0.000	3.20	7.346	4.77	274.1	0.0	209.0
180.00		1.00	1.43	32.814	36.10	251.72	0.650	0.000	5.00	11.079	7.20	415.9	0.0	315.1
185.00		1.00	1.44	33.003	36.30	241.11	0.650	0.000	5.00	10.592	6.88	399.9	0.0	301.1

Wind Loading - Shaft

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

187.00 Appurtenance(s)	1.00	1.45	33.077	36.38	236.84	0.650	0.000	2.00	4.101	2.67	155.2	0.0	116.5
							Totals:	**187.00**			**21,581.4**		**36,710.3**

Discrete Appurtenance Forces

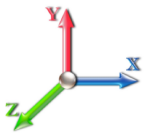
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	Low Profile Platform	1	33.077	36.385	1.00	1.00	22.00	1350.00	0.000	0.000	1280.75	0.00	0.00
2	187.00	DB201	2	33.251	36.576	1.00	1.00	7.08	45.00	0.000	4.750	414.34	0.00	1968.11
3	187.00	ANT450F6	1	33.221	36.543	1.00	1.00	1.86	18.90	0.000	3.917	108.75	0.00	425.95
4	187.00	ANT900D6-9	2	33.152	36.468	1.00	1.00	1.96	19.80	0.000	2.042	114.36	0.00	233.49
5	187.00	MF-900B	2	33.077	36.385	1.00	1.00	6.90	23.40	2.015	0.000	401.69	505.98	0.00
6	187.00	6' Lightning rod	1	33.077	36.385	1.00	1.00	0.38	5.85	0.000	0.000	22.12	0.00	0.00
7	171.80	Ericsson Air6419 N77G	3	32.495	35.745	0.57	0.75	6.50	178.47	0.000	0.000	371.63	0.00	0.00
8	170.00	CCI DTMABP7819VG12A	3	32.424	35.666	0.50	0.75	1.72	51.84	0.000	0.000	98.07	0.00	0.00
9	170.00	Ericsson RRUS-32	3	32.424	35.666	0.50	0.75	2.49	207.90	0.000	0.000	141.94	0.00	0.00
10	170.00	Ericsson RRUS 8843 B2	3	32.424	35.666	0.50	0.75	2.47	189.00	0.000	0.000	141.08	0.00	0.00
11	170.00	Quintel QD6616-7	3	32.424	35.666	0.55	0.75	23.47	214.38	0.000	0.000	1339.41	0.00	0.00
12	170.00	Cci DMP65R-BU6DA	3	32.424	35.666	0.54	0.75	20.59	214.38	0.000	0.000	1174.99	0.00	0.00
13	170.00	Kaelus DBC0061F1V51-2	6	32.424	35.666	0.50	0.75	1.30	137.16	0.000	0.000	73.98	0.00	0.00
14	170.00	Ericsson 4478 B14	3	32.424	35.666	0.50	0.75	2.77	161.73	0.000	0.000	158.29	0.00	0.00
15	170.00	CSS DBC-750	3	32.424	35.666	0.50	0.75	0.77	12.96	0.000	0.000	43.87	0.00	0.00
16	170.00	Raycap DC6-48-60-18-8F	3	32.424	35.666	0.75	0.75	2.07	85.86	0.000	0.000	118.13	0.00	0.00
17	170.00	Commscope	3	32.424	35.666	0.50	0.75	0.08	2.97	0.000	0.000	4.30	0.00	0.00
18	170.00	Low Profile Platform w/	1	32.424	35.666	1.00	1.00	27.70	1530.00	0.000	0.000	1580.72	0.00	0.00
19	170.00	Ericsson RRUS 4449	3	32.424	35.666	0.50	0.75	2.97	191.70	0.000	0.000	169.47	0.00	0.00
20	168.20	Ericsson Air6449 N77D	3	32.351	35.587	0.64	0.75	7.90	237.60	0.000	0.000	449.74	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	32.015	35.216	1.00	1.00	32.00	1440.00	0.000	0.000	1803.08	0.00	0.00
22	160.00	Air32	3	32.015	35.216	0.65	0.75	12.74	356.94	0.000	0.000	718.04	0.00	0.00
23	160.00	APXVAARR24_43-U-NA2	3	32.015	35.216	0.52	0.75	31.88	345.60	0.000	0.000	1796.21	0.00	0.00
24	160.00	SDX1926Q-43	3	32.015	35.216	0.38	0.75	0.58	11.61	0.000	0.000	32.96	0.00	0.00
25	160.00	AIR6449 B41	3	32.015	35.216	0.53	0.75	9.03	278.10	0.000	0.000	508.57	0.00	0.00
26	160.00	MS-KI22-5 (Kickers)	1	32.015	35.216	1.00	1.00	5.33	131.40	0.000	0.000	300.33	0.00	0.00
27	160.00	KRY 112 144/1	3	32.015	35.216	0.38	0.75	0.46	29.70	0.000	0.000	25.99	0.00	0.00
28	160.00	RRUS 4415 B25	3	32.015	35.216	0.50	0.75	2.47	124.20	0.000	0.000	139.30	0.00	0.00
29	160.00	4449 B71+B12	3	32.015	35.216	0.50	0.75	2.49	189.00	0.000	0.000	140.15	0.00	0.00
30	160.00	MS-1436 (Light Collar	1	32.015	35.216	1.00	1.00	1.50	59.04	0.000	0.000	84.52	0.00	0.00
31	150.00	MC-PK8-DSH	1	31.586	34.744	1.00	1.00	37.59	1554.30	0.000	0.000	2089.65	0.00	0.00
32	150.00	RDIDC-9181-OF-48	1	31.586	34.744	0.75	0.75	1.51	19.71	0.000	0.000	83.80	0.00	0.00
33	150.00	TA08025-B605	3	31.586	34.744	0.50	0.75	2.95	202.50	0.000	0.000	164.25	0.00	0.00
34	150.00	MX08FRO665-21	3	31.586	34.744	0.55	0.75	20.80	174.15	0.000	0.000	1156.06	0.00	0.00
35	150.00	TA08025-B604	3	31.586	34.744	0.50	0.75	2.95	172.53	0.000	0.000	164.25	0.00	0.00
36	140.00	Samsung RF4440d-13A	3	31.133	34.247	0.50	0.75	2.82	189.81	0.000	0.000	154.47	0.00	0.00
37	140.00	Commscope	3	31.133	34.247	0.62	0.75	15.09	129.87	0.000	0.000	826.82	0.00	0.00
38	140.00	Samsung MT6407-77A	3	31.133	34.247	0.52	0.75	7.39	214.38	0.000	0.000	404.75	0.00	0.00
39	140.00	VZWSMART-PLK1	1	31.133	34.247	1.00	1.00	12.25	453.60	0.000	0.000	671.23	0.00	0.00
40	140.00	PRK-SFS	1	31.133	34.247	1.00	1.00	9.50	529.20	0.000	0.000	520.55	0.00	0.00
41	140.00	Commscope	3	31.133	34.247	0.62	0.75	15.09	117.99	0.000	0.000	826.82	0.00	0.00
42	140.00	Samsung RF4439d-25A	3	31.133	34.247	0.50	0.75	2.83	201.69	0.000	0.000	155.29	0.00	0.00
43	140.00	Samsung LTE CBRS	3	31.133	34.247	0.50	0.75	1.49	50.22	0.000	0.000	81.78	0.00	0.00
44	140.00	LNX-6514DS-VTM	3	31.133	34.247	0.60	0.75	14.56	104.76	0.000	0.000	797.92	0.00	0.00
45	140.00	DB-T1-6Z-8AB-0Z	2	31.133	34.247	0.68	0.75	5.60	79.20	0.000	0.000	306.66	0.00	0.00
46	140.00	KS-24019	6	31.133	34.247	1.00	1.00	0.72	2.70	0.000	0.000	39.45	0.00	0.00
47	140.00	Low Profile Platform	1	31.133	34.247	1.00	1.00	22.00	1350.00	0.000	0.000	1205.48	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

48	130.00	APXVSPP18-C-A20	3	30.655	33.720	0.66	0.80	15.98	153.90	0.000	0.000	861.94	0.00	0.00
49	130.00	APXVTM14-C-120	3	30.655	33.720	0.63	0.80	12.02	151.20	0.000	0.000	648.54	0.00	0.00
50	130.00	TD-RRH8x20-25	3	30.655	33.720	0.40	0.80	4.86	189.00	0.000	0.000	262.21	0.00	0.00
51	130.00	1900MHz RRH	3	30.655	33.720	0.54	0.80	6.11	118.80	0.000	0.000	329.67	0.00	0.00
52	130.00	800 MHz RRH	3	30.655	33.720	0.54	0.80	4.00	143.10	0.000	0.000	216.02	0.00	0.00
53	130.00	800MHz Filter	3	30.655	33.720	0.54	0.80	1.25	23.76	0.000	0.000	67.67	0.00	0.00
54	130.00	RF Filters	3	30.655	33.720	0.54	0.80	1.50	41.85	0.000	0.000	80.68	0.00	0.00
55	130.00	ACU-A20-N	4	30.655	33.720	0.40	0.80	0.22	3.60	0.000	0.000	12.09	0.00	0.00
56	130.00	Low Profile Platform	1	30.655	33.720	1.00	1.00	22.00	1350.00	0.000	0.000	1186.95	0.00	0.00
57	92.00	Low Profile Platform	1	28.522	31.374	1.00	1.00	22.00	1350.00	0.000	0.000	1104.36	0.00	0.00
58	92.00	DB205	1	29.082	31.990	1.00	1.00	1.80	34.20	0.000	9.000	92.13	0.00	829.18
59	92.00	ANT450Y10-WR	1	28.522	31.374	1.00	1.00	0.49	4.50	0.000	0.000	24.60	0.00	0.00
60	92.00	ANT150D3	1	28.838	31.722	1.00	1.00	2.18	16.20	0.000	5.000	110.65	0.00	553.23
61	92.00	ANT4506-9	1	28.713	31.584	1.00	1.00	2.77	16.20	0.000	3.000	139.98	0.00	419.94
62	92.00	MF-900B	2	28.522	31.374	1.00	1.00	6.90	23.40	2.887	0.000	346.37	624.95	0.00
							Totals:		**17,010.81**			**28,889.87**		

Total Applied Force Summary

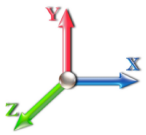
Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		605.39	1791.86	0.00	0.00
10.00		594.56	1763.91	0.00	0.00
15.00		590.95	1735.97	0.00	0.00
20.00		614.16	1708.03	0.00	0.00
25.00		630.27	1680.09	0.00	0.00
30.00		641.45	1652.15	0.00	0.00
35.00		648.96	1624.21	0.00	0.00
40.00		653.62	1596.26	0.00	0.00
45.00		655.96	1568.32	0.00	0.00
46.25		162.77	387.71	0.00	0.00
50.00		498.95	2017.79	0.00	0.00
53.25		431.64	1724.91	0.00	0.00
55.00		231.48	477.94	0.00	0.00
60.00		663.59	1349.04	0.00	0.00
65.00		659.92	1324.59	0.00	0.00
70.00		655.15	1300.14	0.00	0.00
75.00		649.39	1275.69	0.00	0.00
80.00		642.74	1251.24	0.00	0.00
85.00		635.28	1226.80	0.00	0.00
90.00		627.08	1202.35	0.00	0.00
92.00	(7) attachments	2065.62	1918.59	624.95	1802.35
93.75		215.36	410.11	0.00	0.00
95.00		155.66	493.52	0.00	0.00
99.75		588.34	1849.50	0.00	0.00
100.00		30.58	51.18	0.00	0.00
105.00		609.24	1012.69	0.00	0.00
110.00		598.71	991.73	0.00	0.00
115.00		587.65	970.77	0.00	0.00
120.00		576.12	949.82	0.00	0.00
125.00		564.13	928.86	0.00	0.00
130.00	(26) attachments	4217.48	3083.11	0.00	0.00
135.00		538.88	872.27	0.00	0.00
140.00	(32) attachments	6516.88	4274.73	0.00	0.00
142.75		282.88	425.13	0.00	0.00
145.00		231.69	527.20	0.00	0.00
147.25		228.89	520.13	0.00	0.00
150.00	(11) attachments	3934.03	2429.03	0.00	0.00
155.00		491.57	536.79	0.00	0.00
160.00	(24) attachments	6026.18	3488.41	0.00	0.00
165.00		462.18	446.93	0.00	0.00
168.20	(3) attachments	737.27	516.30	0.00	0.00
170.00	(37) attachments	5203.11	3154.14	0.00	0.00
171.80	(3) attachments	528.49	302.11	0.00	0.00
175.00		274.13	215.34	0.00	0.00
180.00		415.88	325.01	0.00	0.00
185.00		399.91	311.04	0.00	0.00

Total Applied Force Summary

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

Tower Engineering Solutions

187.00	(9) attachments	2497.18	1583.45	505.98	2627.55
	Totals:	**50,471.31**	**61,246.91**	**1,130.94**	**4,429.90**

Linear Appurtenance Segment Forces (Factored)

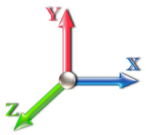
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	8.46
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	8.46
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.690	0.00	8.46
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.851	0.00	8.46
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.810	0.00	8.46
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.632	0.00	8.46
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.356	0.00	8.46
40.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.004	0.00	8.46
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.593	0.00	8.46
46.25	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	2.11
50.00	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.000	0.000	25.133	0.00	6.34
53.25	1.6" Hybrid	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.462	0.00	5.50
55.00	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.633	0.00	2.96
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.099	0.00	8.46
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.535	0.00	8.46
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.946	0.00	8.46
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.335	0.00	8.46
80.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.704	0.00	8.46
85.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.056	0.00	8.46
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.391	0.00	8.46
92.00	1.6" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	28.522	0.00	3.38
93.75	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	28.634	0.00	2.96
95.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	2.11
99.75	1.6" Hybrid	Yes	4.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	8.04
100.00	1.6" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	29.021	0.00	0.42
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.318	0.00	8.46
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.604	0.00	8.46
115.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.880	0.00	8.46
120.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	8.46
125.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.405	0.00	8.46
130.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.655	0.00	8.46
135.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.898	0.00	8.46
140.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.133	0.00	8.46
142.75	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	31.260	0.00	4.65
145.00	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	31.362	0.00	3.81
147.25	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	31.464	0.00	3.81
150.00	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	31.586	0.00	4.65
									Totals:		**0.0**	**253.8**

Calculated Forces

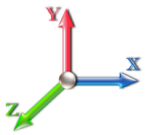
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.17	-50.56	-1.11	-6519.9	-0.01	6519.90	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.712
5.00	-59.23	-50.13	-1.11	-6267.0	-0.01	6267.08	6919.93	3459.96	17978.0	9002.40	0.09	-0.170	0.000	0.705
10.00	-57.32	-49.70	-1.11	-6016.4	-0.01	6016.42	6836.37	3418.19	17435.4	8730.69	0.36	-0.342	0.000	0.698
15.00	-55.44	-49.27	-1.11	-5767.9	-0.01	5767.90	6751.25	3375.63	16896.9	8461.01	0.82	-0.517	0.000	0.690
20.00	-53.58	-48.81	-1.11	-5521.5	-0.02	5521.55	6664.57	3332.28	16362.6	8193.47	1.45	-0.694	0.000	0.682
25.00	-51.76	-48.32	-1.11	-5277.5	-0.02	5277.53	6576.31	3288.16	15832.7	7928.16	2.28	-0.873	0.000	0.674
30.00	-49.97	-47.81	-1.11	-5035.9	-0.02	5035.95	6486.49	3243.25	15307.6	7665.22	3.29	-1.055	0.000	0.665
35.00	-48.20	-47.28	-1.11	-4796.9	-0.02	4796.93	6395.11	3197.55	14787.5	7404.75	4.49	-1.239	0.000	0.656
40.00	-46.47	-46.74	-1.11	-4560.5	-0.02	4560.53	6302.15	3151.08	14272.4	7146.85	5.89	-1.424	0.000	0.646
45.00	-44.83	-46.14	-1.12	-4326.8	-0.02	4326.83	6207.63	3103.82	13762.8	6891.65	7.48	-1.612	0.000	0.635
46.25	-44.37	-46.04	-1.12	-4269.1	-0.02	4269.16	6183.76	3091.88	13636.3	6828.29	7.91	-1.660	0.000	0.633
50.00	-42.26	-45.58	-1.12	-4096.5	-0.02	4096.52	6111.55	3055.77	13258.8	6639.26	9.27	-1.804	0.000	0.624
53.25	-40.47	-45.16	-1.12	-3948.4	-0.02	3948.40	5153.03	2576.51	11233.0	5624.85	10.54	-1.929	0.000	0.710
55.00	-39.89	-45.01	-1.12	-3869.3	-0.02	3869.38	5126.51	2563.25	11089.7	5553.12	11.27	-1.998	0.000	0.705
60.00	-38.41	-44.43	-1.12	-3644.3	-0.02	3644.35	5049.68	2524.84	10683.1	5349.50	13.47	-2.206	-0.001	0.689
65.00	-36.95	-43.86	-1.12	-3422.1	-0.03	3422.19	4971.29	2485.64	10280.5	5147.92	15.89	-2.416	-0.001	0.673
70.00	-35.52	-43.28	-1.12	-3202.9	-0.03	3202.91	4891.33	2445.66	9882.29	4948.49	18.54	-2.626	-0.001	0.655
75.00	-34.12	-42.69	-1.12	-2986.5	-0.03	2986.53	4809.80	2404.90	9488.55	4751.33	21.40	-2.836	-0.001	0.636
80.00	-32.75	-42.11	-1.12	-2773.0	-0.03	2773.07	4726.70	2363.35	9099.56	4556.54	24.48	-3.047	-0.001	0.616
85.00	-31.41	-41.52	-1.12	-2562.5	-0.04	2562.55	4642.04	2321.02	8715.55	4364.25	27.78	-3.256	-0.001	0.594
90.00	-30.14	-40.90	-1.12	-2354.9	-0.04	2354.96	4555.82	2277.91	8336.73	4174.56	31.30	-3.464	-0.001	0.571
92.00	-28.30	-38.76	-0.50	-2271.3	0.00	2271.36	4520.89	2260.44	8186.70	4099.44	32.77	-3.548	-0.001	0.561
93.75	-27.86	-38.55	-0.50	-2203.5	0.00	2203.53	4490.12	2245.06	8056.16	4034.07	34.09	-3.622	-0.001	0.553
95.00	-27.29	-38.42	-0.50	-2155.3	0.00	2155.34	4468.02	2234.01	7963.33	3987.58	35.04	-3.675	-0.001	0.547
99.75	-25.42	-37.76	-0.50	-1972.8	0.00	1972.84	3653.35	1826.67	6478.28	3243.96	38.79	-3.868	-0.001	0.616
100.00	-25.30	-37.78	-0.50	-1963.4	-0.01	1963.41	3649.96	1824.98	6463.57	3236.59	39.00	-3.879	-0.001	0.614
105.00	-24.19	-37.19	-0.50	-1774.5	-0.01	1774.53	3581.25	1790.63	6171.38	3090.28	43.18	-4.099	-0.001	0.581
110.00	-23.11	-36.61	-0.50	-1588.5	-0.01	1588.59	3510.98	1755.49	5883.11	2945.93	47.58	-4.314	-0.001	0.546
115.00	-22.06	-36.02	-0.50	-1405.5	-0.02	1405.57	3439.14	1719.57	5598.97	2803.65	52.21	-4.522	-0.001	0.508
120.00	-21.04	-35.44	-0.50	-1225.4	-0.02	1225.45	3365.73	1682.87	5319.21	2663.56	57.05	-4.721	-0.001	0.467
125.00	-20.05	-34.87	-0.50	-1048.2	-0.02	1048.24	3290.76	1645.38	5044.03	2525.77	62.09	-4.909	-0.001	0.422
130.00	-17.26	-30.45	-0.50	-873.91	-0.03	873.91	3204.00	1602.00	4758.48	2382.78	67.32	-5.083	-0.002	0.373
135.00	-16.36	-29.87	-0.50	-721.68	-0.03	721.68	3102.32	1551.16	4459.76	2233.19	72.73	-5.242	-0.002	0.329
140.00	-12.66	-23.01	-0.50	-572.30	-0.03	572.30	3000.64	1500.32	4170.72	2088.46	78.29	-5.384	-0.002	0.278
142.75	-12.24	-22.70	-0.50	-509.02	-0.04	509.02	2944.72	1472.36	4015.87	2010.92	81.41	-5.456	-0.002	0.258
145.00	-11.72	-22.43	-0.50	-457.94	-0.04	457.94	2898.96	1449.48	3891.36	1948.57	83.99	-5.511	-0.002	0.239
147.25	-11.20	-22.17	-0.50	-407.46	-0.04	407.46	1774.96	887.48	2399.50	1201.53	86.60	-5.564	-0.002	0.346
150.00	-9.14	-18.03	-0.50	-346.50	-0.04	346.50	1752.91	876.46	2323.79	1163.62	89.81	-5.622	-0.002	0.303
155.00	-8.62	-17.51	-0.50	-256.35	-0.04	256.35	1711.62	855.81	2187.55	1095.40	95.76	-5.749	-0.002	0.239
160.00	-5.74	-11.17	-0.50	-168.82	-0.05	168.82	1668.76	834.38	2053.31	1028.18	101.83	-5.850	-0.002	0.168
165.00	-5.33	-10.67	-0.50	-112.99	-0.05	112.99	1624.34	812.17	1921.31	962.08	107.99	-5.924	-0.003	0.121
168.20	-4.89	-9.88	-0.50	-78.86	-0.05	78.86	1595.09	797.54	1838.10	920.41	111.97	-5.960	-0.003	0.089
170.00	-2.29	-4.38	-0.50	-61.08	-0.05	61.08	1578.35	789.17	1791.75	897.21	114.22	-5.977	-0.003	0.070
171.80	-2.05	-3.82	-0.50	-53.20	-0.05	53.20	1561.41	780.70	1745.76	874.18	116.47	-5.990	-0.003	0.062
175.00	-1.86	-3.53	-0.50	-40.97	-0.05	40.97	1530.79	765.40	1664.88	833.68	120.48	-6.012	-0.003	0.050
180.00	-1.58	-3.08	-0.50	-23.33	-0.05	23.33	1481.67	740.83	1540.90	771.60	126.78	-6.036	-0.004	0.031
185.00	-1.31	-2.65	-0.50	-7.93	-0.05	7.93	1427.20	713.60	1416.30	709.20	133.10	-6.050	-0.004	0.012
187.00	0.00	-2.50	-0.51	-2.63	0.00	2.63	1400.09	700.04	1362.73	682.38	135.63	-6.052	-0.004	0.004

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Wind Loading - Shaft

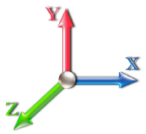
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	1.410	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.687	5.00	28.613	34.34	195.2	691.1	2758.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.792	5.00	28.214	33.86	192.5	722.5	2752.6
15.00		1.00	0.86	5.232	5.76	0.00	1.200	1.860	5.00	27.784	33.34	191.9	737.5	2730.3
20.00		1.00	0.91	5.540	6.09	0.00	1.200	1.912	5.00	27.341	32.81	199.9	744.7	2700.2
25.00		1.00	0.95	5.795	6.37	0.00	1.200	1.953	5.00	26.889	32.27	205.7	747.2	2665.4
30.00		1.00	0.99	6.013	6.61	0.00	1.200	1.988	5.00	26.431	31.72	209.8	746.5	2627.6
35.00		1.00	1.02	6.206	6.83	0.00	1.200	2.017	5.00	25.969	31.16	212.7	743.6	2587.4
40.00		1.00	1.05	6.378	7.02	0.00	1.200	2.044	5.00	25.505	30.61	214.7	739.0	2545.5
45.00		1.00	1.07	6.534	7.19	0.00	1.200	2.068	5.00	25.038	30.05	216.0	732.9	2502.2
46.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	2.073	1.25	6.185	7.42	53.6	182.8	619.3
50.00		1.00	1.10	6.678	7.35	0.00	1.200	2.089	3.75	18.659	22.39	164.5	552.9	3001.9
53.25	Top - Section 1	1.00	1.11	6.765	7.44	0.00	1.200	2.102	3.25	15.957	19.15	142.5	475.9	2566.5
55.00		1.00	1.12	6.811	7.49	0.00	1.200	2.109	1.75	8.509	10.21	76.5	255.2	779.8
60.00		1.00	1.14	6.934	7.63	0.00	1.200	2.127	5.00	23.998	28.80	219.7	720.4	2197.2
65.00		1.00	1.16	7.050	7.76	0.00	1.200	2.144	5.00	23.526	28.23	218.9	710.8	2155.1
70.00		1.00	1.18	7.160	7.88	0.00	1.200	2.159	5.00	23.052	27.66	217.9	700.7	2112.4
75.00		1.00	1.19	7.263	7.99	0.00	1.200	2.174	5.00	22.578	27.09	216.5	690.0	2069.1
80.00		1.00	1.21	7.361	8.10	0.00	1.200	2.188	5.00	22.103	26.52	214.8	678.8	2025.3
85.00		1.00	1.23	7.454	8.20	0.00	1.200	2.201	5.00	21.627	25.95	212.8	667.2	1981.1
90.00		1.00	1.24	7.544	8.30	0.00	1.200	2.214	5.00	21.151	25.38	210.6	655.2	1936.5
92.00	Appurtenance(s)	1.00	1.25	7.578	8.34	0.00	1.200	2.218	2.00	8.326	9.99	83.3	260.1	763.5
93.75	Bot - Section 3	1.00	1.25	7.608	8.37	0.00	1.200	2.222	1.75	7.223	8.67	72.5	226.1	662.3
95.00		1.00	1.25	7.629	8.39	0.00	1.200	2.225	1.25	5.202	6.24	52.4	163.3	742.3
99.75	Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	2.236	4.75	19.500	23.40	198.4	609.3	2775.0
100.00		1.00	1.27	7.711	8.48	0.00	1.200	2.237	0.25	1.014	1.22	10.3	32.0	84.5
105.00		1.00	1.28	7.790	8.57	0.00	1.200	2.248	5.00	20.038	24.05	206.0	627.8	1661.9
110.00		1.00	1.29	7.866	8.65	0.00	1.200	2.258	5.00	19.560	23.47	203.1	614.5	1620.8
115.00		1.00	1.31	7.939	8.73	0.00	1.200	2.268	5.00	19.082	22.90	200.0	601.1	1579.3
120.00		1.00	1.32	8.010	8.81	0.00	1.200	2.277	5.00	18.603	22.32	196.7	587.3	1537.6
125.00		1.00	1.33	8.079	8.89	0.00	1.200	2.287	5.00	18.124	21.75	193.3	573.4	1495.7
130.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	2.296	5.00	17.645	21.17	189.7	559.2	1453.6
135.00		1.00	1.35	8.210	9.03	0.00	1.200	2.304	5.00	17.166	20.60	186.0	544.8	1411.3
140.00	Appurtenance(s)	1.00	1.36	8.272	9.10	0.00	1.200	2.313	5.00	16.686	20.02	182.2	530.2	1368.8
142.75	Bot - Section 4	1.00	1.37	8.306	9.14	0.00	1.200	2.317	2.75	8.972	10.77	98.4	287.2	736.5
145.00		1.00	1.37	8.333	9.17	0.00	1.200	2.321	2.25	7.328	8.79	80.6	235.2	842.0
147.25	Top - Section 3	1.00	1.37	8.360	9.20	0.00	1.200	2.324	2.25	7.231	8.68	79.8	232.2	829.5
150.00	Appurtenance(s)	1.00	1.38	8.392	9.23	0.00	1.200	2.329	2.75	8.706	10.45	96.4	279.3	569.6
155.00		1.00	1.39	8.450	9.30	0.00	1.200	2.336	5.00	15.458	18.55	172.4	492.8	1006.0
160.00	Appurtenance(s)	1.00	1.40	8.506	9.36	0.00	1.200	2.343	5.00	14.978	17.97	168.2	477.5	972.2
165.00		1.00	1.41	8.561	9.42	0.00	1.200	2.351	5.00	14.497	17.40	163.8	462.2	938.2
168.20	Appurtenance(s)	1.00	1.41	8.596	9.46	0.00	1.200	2.355	3.20	9.025	10.83	102.4	289.4	584.3
170.00	Appurtenance(s)	1.00	1.42	8.615	9.48	0.00	1.200	2.358	1.80	4.990	5.99	56.7	160.8	323.3
171.80	Appurtenance(s)	1.00	1.42	8.634	9.50	0.00	1.200	2.360	1.80	4.928	5.91	56.2	158.8	318.9
175.00		1.00	1.43	8.667	9.53	0.00	1.200	2.364	3.20	8.607	10.33	98.5	275.8	554.5
180.00		1.00	1.43	8.719	9.59	0.00	1.200	2.371	5.00	13.055	15.67	150.2	415.2	835.4
185.00		1.00	1.44	8.769	9.65	0.00	1.200	2.378	5.00	12.573	15.09	145.5	399.3	800.8

Wind Loading - Shaft

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

187.00	Appurtenance(s)	1.00	1.45	8.789	9.67	0.00	1.200	2.380	2.00	4.894	5.87	56.8	157.2	312.6
								Totals:	**187.00**			**7,286.5**		**72,094.3**

Discrete Appurtenance Forces

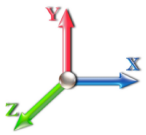
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	Low Profile Platform	1	8.789	9.668	1.00	1.00	46.09	3285.07	0.000	0.000	445.54	0.00	0.00
2	187.00	DB201	2	8.835	9.718	1.00	1.00	36.78	295.81	0.000	4.750	357.43	0.00	1697.79
3	187.00	ANT450F6	1	8.827	9.710	1.00	1.00	5.72	78.08	0.000	3.917	55.56	0.00	217.61
4	187.00	ANT900D6-9	2	8.809	9.690	1.00	1.00	8.52	108.38	0.000	2.042	82.55	0.00	168.53
5	187.00	MF-900B	2	8.789	9.668	1.00	1.00	73.40	273.22	2.015	0.000	709.59	1430.1	0.00
6	187.00	6' Lightning rod	1	8.789	9.668	1.00	1.00	1.86	52.01	0.000	0.000	18.01	0.00	0.00
7	171.80	Ericsson Air6419 N77G	3	8.634	9.497	0.57	0.75	8.34	560.18	0.000	0.000	79.19	0.00	0.00
8	170.00	CCI DTMABP7819VG12A	3	8.615	9.477	0.50	0.75	3.29	150.65	0.000	0.000	31.14	0.00	0.00
9	170.00	Ericsson RRUS-32	3	8.615	9.477	0.50	0.75	3.71	497.25	0.000	0.000	35.14	0.00	0.00
10	170.00	Ericsson RRUS 8843 B2	3	8.615	9.477	0.50	0.75	3.52	404.46	0.000	0.000	33.39	0.00	0.00
11	170.00	Quintel QD6616-7	3	8.615	9.477	0.55	0.75	26.88	1412.84	0.000	0.000	254.73	0.00	0.00
12	170.00	Cci DMP65R-BU6DA	3	8.615	9.477	0.54	0.75	23.79	1277.66	0.000	0.000	225.49	0.00	0.00
13	170.00	Kaelus DBC0061F1V51-2	6	8.615	9.477	0.50	0.75	2.46	279.73	0.000	0.000	23.29	0.00	0.00
14	170.00	Ericsson 4478 B14	3	8.615	9.477	0.50	0.75	3.85	371.02	0.000	0.000	36.45	0.00	0.00
15	170.00	CSS DBC-750	3	8.615	9.477	0.50	0.75	1.85	47.76	0.000	0.000	17.50	0.00	0.00
16	170.00	Raycap DC6-48-60-18-8F	3	8.615	9.477	0.75	0.75	3.40	311.94	0.000	0.000	32.23	0.00	0.00
17	170.00	Commscope	3	8.615	9.477	0.50	0.75	0.47	10.90	0.000	0.000	4.43	0.00	0.00
18	170.00	Low Profile Platform w/	1	8.615	9.477	1.00	1.00	57.74	3944.00	0.000	0.000	547.19	0.00	0.00
19	170.00	Ericsson RRUS 4449	3	8.615	9.477	0.50	0.75	4.08	431.14	0.000	0.000	38.71	0.00	0.00
20	168.20	Ericsson Air6449 N77D	3	8.596	9.455	0.64	0.75	10.16	910.47	0.000	0.000	96.10	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	8.506	9.357	1.00	1.00	69.50	4139.67	0.000	0.000	650.28	0.00	0.00
22	160.00	Air32	3	8.506	9.357	0.65	0.75	15.88	1265.97	0.000	0.000	148.55	0.00	0.00
23	160.00	APXVAARR24_43-U-NA2	3	8.506	9.357	0.52	0.75	35.95	2218.49	0.000	0.000	336.37	0.00	0.00
24	160.00	SDX1926Q-43	3	8.506	9.357	0.38	0.75	1.39	51.49	0.000	0.000	12.99	0.00	0.00
25	160.00	AIR6449 B41	3	8.506	9.357	0.53	0.75	11.06	828.07	0.000	0.000	103.54	0.00	0.00
26	160.00	MS-KI22-5 (Kickers)	1	8.506	9.357	1.00	1.00	12.82	384.92	0.000	0.000	120.00	0.00	0.00
27	160.00	KRY 112 144/1	3	8.506	9.357	0.38	0.75	1.18	73.73	0.000	0.000	11.03	0.00	0.00
28	160.00	RRUS 4415 B25	3	8.506	9.357	0.50	0.75	3.52	302.98	0.000	0.000	32.89	0.00	0.00
29	160.00	4449 B71+B12	3	8.506	9.357	0.50	0.75	3.62	551.83	0.000	0.000	33.84	0.00	0.00
30	160.00	MS-1436 (Light Collar	1	8.506	9.357	1.00	1.00	3.61	172.81	0.000	0.000	33.77	0.00	0.00
31	150.00	MC-PK8-DSH	1	8.392	9.232	1.00	1.00	100.61	3951.34	0.000	0.000	928.80	0.00	0.00
32	150.00	RDIDC-9181-OF-48	1	8.392	9.232	0.75	0.75	2.08	84.63	0.000	0.000	19.17	0.00	0.00
33	150.00	TA08025-B605	3	8.392	9.232	0.50	0.75	4.08	441.56	0.000	0.000	37.69	0.00	0.00
34	150.00	MX08FRO665-21	3	8.392	9.232	0.55	0.75	24.05	1194.86	0.000	0.000	222.02	0.00	0.00
35	150.00	TA08025-B604	3	8.392	9.232	0.50	0.75	4.08	396.39	0.000	0.000	37.69	0.00	0.00
36	140.00	Samsung RF4440d-13A	3	8.272	9.099	0.50	0.75	4.00	566.40	0.000	0.000	36.40	0.00	0.00
37	140.00	Commscope	3	8.272	9.099	0.62	0.75	18.36	1025.19	0.000	0.000	167.05	0.00	0.00
38	140.00	Samsung MT6407-77A	3	8.272	9.099	0.52	0.75	9.39	794.13	0.000	0.000	85.48	0.00	0.00
39	140.00	VZWSMART-PLK1	1	8.272	9.099	1.00	1.00	28.11	1901.37	0.000	0.000	255.83	0.00	0.00
40	140.00	PRK-SFS	1	8.272	9.099	1.00	1.00	22.68	1277.52	0.000	0.000	206.39	0.00	0.00
41	140.00	Commscope	3	8.272	9.099	0.62	0.75	18.36	1009.35	0.000	0.000	167.05	0.00	0.00
42	140.00	Samsung RF4439d-25A	3	8.272	9.099	0.50	0.75	3.94	314.57	0.000	0.000	35.81	0.00	0.00
43	140.00	Samsung LTE CBRS	3	8.272	9.099	0.50	0.75	2.33	158.46	0.000	0.000	21.24	0.00	0.00
44	140.00	LNX-6514DS-VTM	3	8.272	9.099	0.61	0.75	21.76	820.91	0.000	0.000	198.01	0.00	0.00
45	140.00	DB-T1-6Z-8AB-0Z	2	8.272	9.099	0.68	0.75	7.05	737.74	0.000	0.000	64.12	0.00	0.00
46	140.00	KS-24019	6	8.272	9.099	1.00	1.00	2.35	45.67	0.000	0.000	21.42	0.00	0.00
47	140.00	Low Profile Platform	1	8.272	9.099	1.00	1.00	45.40	3234.45	0.000	0.000	413.15	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

48	130.00	APXVSPP18-C-A20	3	8.145	8.960	0.68	0.80	23.86	738.81	0.000	0.000	213.75	0.00	0.00
49	130.00	APXVTM14-C-120	3	8.145	8.960	0.65	0.80	15.23	875.54	0.000	0.000	136.45	0.00	0.00
50	130.00	TD-RRH8x20-25	3	8.145	8.960	0.40	0.80	6.17	717.13	0.000	0.000	55.32	0.00	0.00
51	130.00	1900MHz RRH	3	8.145	8.960	0.54	0.80	9.05	495.58	0.000	0.000	81.09	0.00	0.00
52	130.00	800 MHz RRH	3	8.145	8.960	0.54	0.80	6.42	419.36	0.000	0.000	57.55	0.00	0.00
53	130.00	800MHz Filter	3	8.145	8.960	0.54	0.80	2.62	86.30	0.000	0.000	23.50	0.00	0.00
54	130.00	RF Filters	3	8.145	8.960	0.54	0.80	2.43	193.57	0.000	0.000	21.78	0.00	0.00
55	130.00	ACU-A20-N	4	8.145	8.960	0.40	0.80	0.85	22.20	0.000	0.000	7.60	0.00	0.00
56	130.00	Low Profile Platform	1	8.145	8.960	1.00	1.00	45.23	3221.74	0.000	0.000	405.26	0.00	0.00
57	92.00	Low Profile Platform	1	7.578	8.336	1.00	1.00	44.45	3163.75	0.000	0.000	370.54	0.00	0.00
58	92.00	DB205	1	7.727	8.500	1.00	1.00	9.86	102.64	0.000	9.000	83.80	0.00	754.23
59	92.00	ANT450Y10-WR	1	7.578	8.336	1.00	1.00	1.93	25.97	0.000	0.000	16.06	0.00	0.00
60	92.00	ANT150D3	1	7.662	8.429	1.00	1.00	12.98	93.67	0.000	5.000	109.38	0.00	546.92
61	92.00	ANT4506-9	1	7.629	8.392	1.00	1.00	6.62	102.90	0.000	3.000	55.57	0.00	166.70
62	92.00	MF-900B	2	7.578	8.336	1.00	1.00	68.88	252.39	2.887	0.000	574.18	1657.6	0.00
							Totals:		**53,158.61**			**9,736.06**		

Total Applied Force Summary

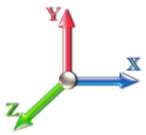
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		195.19	3109.19	0.00	0.00
10.00		192.47	3106.27	0.00	0.00
15.00		191.88	3085.93	0.00	0.00
20.00		199.94	3057.34	0.00	0.00
25.00		205.68	3023.81	0.00	0.00
30.00		209.80	2986.97	0.00	0.00
35.00		212.73	2947.71	0.00	0.00
40.00		214.73	2906.62	0.00	0.00
45.00		215.96	2864.06	0.00	0.00
46.25		53.65	709.81	0.00	0.00
50.00		164.48	3273.82	0.00	0.00
53.25		142.50	2802.48	0.00	0.00
55.00		76.50	906.94	0.00	0.00
60.00		219.67	2561.01	0.00	0.00
65.00		218.94	2519.43	0.00	0.00
70.00		217.86	2477.20	0.00	0.00
75.00		216.46	2434.41	0.00	0.00
80.00		214.77	2391.10	0.00	0.00
85.00		212.81	2347.33	0.00	0.00
90.00		210.62	2303.14	0.00	0.00
92.00	(7) attachments	1292.82	4651.56	1657.61	1467.86
93.75		72.53	788.69	0.00	0.00
95.00		52.39	832.65	0.00	0.00
99.75		198.38	3118.53	0.00	0.00
100.00		10.32	102.56	0.00	0.00
105.00		206.04	2023.93	0.00	0.00
110.00		203.09	1983.11	0.00	0.00
115.00		199.97	1942.02	0.00	0.00
120.00		196.69	1900.67	0.00	0.00
125.00		193.27	1859.07	0.00	0.00
130.00	(26) attachments	1192.02	8587.50	0.00	0.00
135.00		186.02	1755.66	0.00	0.00
140.00	(32) attachments	1854.14	13599.19	0.00	0.00
142.75		98.37	880.57	0.00	0.00
145.00		80.60	959.95	0.00	0.00
147.25		79.79	947.56	0.00	0.00
150.00	(11) attachments	1341.81	6782.64	0.00	0.00
155.00		172.42	1208.49	0.00	0.00
160.00	(24) attachments	1651.43	11164.59	0.00	0.00
165.00		163.83	1058.08	0.00	0.00
168.20	(3) attachments	198.50	1571.52	0.00	0.00
170.00	(37) attachments	1336.43	9505.81	0.00	0.00
171.80	(3) attachments	135.35	883.81	0.00	0.00
175.00		98.47	562.96	0.00	0.00
180.00		150.24	848.57	0.00	0.00
185.00		145.54	814.04	0.00	0.00

Total Applied Force Summary

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 32

Tower Engineering Solutions

187.00	(9) attachments	1725.45	4410.40	1430.12	2083.93
	Totals:	**17,022.56**	**136,558.69**	**3,087.73**	**3,551.79**

Linear Appurtenance Segment Forces (Factored)

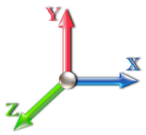
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	40.22
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	43.11
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.232	0.00	45.06
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.540	0.00	46.57
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.795	0.00	47.80
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.013	0.00	48.85
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.206	0.00	49.76
40.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.378	0.00	50.58
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.534	0.00	51.33
46.25	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	12.88
50.00	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.000	0.000	6.678	0.00	39.00
53.25	1.6" Hybrid	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.765	0.00	34.07
55.00	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.811	0.00	18.42
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.934	0.00	53.21
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.050	0.00	53.75
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.160	0.00	54.26
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.263	0.00	54.75
80.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.361	0.00	55.20
85.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.454	0.00	55.64
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.544	0.00	56.05
92.00	1.6" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.578	0.00	22.48
93.75	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	7.608	0.00	19.72
95.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	7.629	0.00	14.11
99.75	1.6" Hybrid	Yes	4.75	0.000	0.00	0.00	0.00	0.000	0.000	7.707	0.00	53.97
100.00	1.6" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	7.711	0.00	2.84
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.790	0.00	57.19
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.866	0.00	57.54
115.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.939	0.00	57.88
120.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.010	0.00	58.20
125.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.079	0.00	58.52
130.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.145	0.00	58.82
135.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.210	0.00	59.12
140.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.272	0.00	59.41
142.75	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	8.306	0.00	32.76
145.00	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	8.333	0.00	26.86
147.25	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	8.360	0.00	26.91
150.00	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	8.392	0.00	32.98
										Totals:	**0.0**	**1,609.8**

Calculated Forces

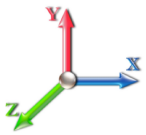
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-136.5	-17.10	-3.08	-2361.8	-0.04	2361.87	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.274
5.00	-133.4	-17.05	-3.08	-2276.3	-0.04	2276.38	6919.93	3459.96	17978.0	9002.40	0.03	-0.062	0.000	0.272
10.00	-130.3	-16.99	-3.08	-2191.1	-0.04	2191.15	6836.37	3418.19	17435.4	8730.69	0.13	-0.124	0.000	0.270
15.00	-127.1	-16.93	-3.08	-2106.2	-0.04	2106.20	6751.25	3375.63	16896.9	8461.01	0.30	-0.188	0.000	0.268
20.00	-124.1	-16.86	-3.08	-2021.5	-0.04	2021.53	6664.57	3332.28	16362.6	8193.47	0.53	-0.253	0.000	0.265
25.00	-121.0	-16.78	-3.08	-1937.2	-0.04	1937.21	6576.31	3288.16	15832.7	7928.16	0.83	-0.319	0.000	0.263
30.00	-118.0	-16.69	-3.08	-1853.3	-0.04	1853.30	6486.49	3243.25	15307.6	7665.22	1.20	-0.385	-0.001	0.260
35.00	-115.1	-16.60	-3.08	-1769.8	-0.05	1769.84	6395.11	3197.55	14787.5	7404.75	1.64	-0.453	-0.001	0.257
40.00	-112.1	-16.49	-3.08	-1686.8	-0.05	1686.86	6302.15	3151.08	14272.4	7146.85	2.15	-0.522	-0.001	0.254
45.00	-109.3	-16.33	-3.08	-1604.4	-0.05	1604.40	6207.63	3103.82	13762.8	6891.65	2.73	-0.591	-0.001	0.250
46.25	-108.5	-16.34	-3.08	-1583.9	-0.05	1583.99	6183.76	3091.88	13636.3	6828.29	2.89	-0.609	-0.001	0.250
50.00	-105.3	-16.23	-3.08	-1522.7	-0.05	1522.73	6111.55	3055.77	13258.8	6639.26	3.39	-0.662	-0.001	0.247
53.25	-102.4	-16.12	-3.08	-1469.9	-0.05	1469.99	5153.03	2576.51	11233.0	5624.85	3.86	-0.709	-0.001	0.281
55.00	-101.5	-16.12	-3.08	-1441.7	-0.05	1441.78	5126.51	2563.25	11089.7	5553.12	4.12	-0.734	-0.001	0.279
60.00	-98.99	-16.00	-3.08	-1361.1	-0.05	1361.18	5049.68	2524.84	10683.1	5349.50	4.93	-0.812	-0.001	0.274
65.00	-96.45	-15.88	-3.08	-1281.1	-0.05	1281.17	4971.29	2485.64	10280.5	5147.92	5.82	-0.890	-0.002	0.268
70.00	-93.96	-15.75	-3.08	-1201.7	-0.05	1201.79	4891.33	2445.66	9882.29	4948.49	6.80	-0.969	-0.002	0.262
75.00	-91.51	-15.62	-3.08	-1123.0	-0.06	1123.04	4809.80	2404.90	9488.55	4751.33	7.86	-1.048	-0.002	0.255
80.00	-89.10	-15.48	-3.08	-1044.9	-0.06	1044.97	4726.70	2363.35	9099.56	4556.54	9.00	-1.127	-0.002	0.248
85.00	-86.73	-15.34	-3.08	-967.57	-0.06	967.57	4642.04	2321.02	8715.55	4364.25	10.22	-1.206	-0.002	0.240
90.00	-84.42	-15.16	-3.08	-890.89	-0.06	890.89	4555.82	2277.91	8336.73	4174.56	11.53	-1.285	-0.003	0.232
92.00	-79.79	-13.80	-1.43	-859.11	-0.02	859.11	4520.89	2260.44	8186.70	4099.44	12.07	-1.317	-0.003	0.227
93.75	-79.00	-13.74	-1.43	-834.95	-0.02	834.95	4490.12	2245.06	8056.16	4034.07	12.56	-1.345	-0.003	0.225
95.00	-78.16	-13.74	-1.43	-817.77	-0.02	817.77	4468.02	2234.01	7963.33	3987.58	12.92	-1.365	-0.003	0.223
99.75	-75.04	-13.51	-1.43	-752.53	-0.03	752.53	3653.35	1826.67	6478.28	3243.96	14.31	-1.439	-0.003	0.253
100.00	-74.92	-13.56	-1.43	-749.15	-0.03	749.15	3649.96	1824.98	6463.57	3236.59	14.39	-1.443	-0.003	0.252
105.00	-72.89	-13.41	-1.43	-681.37	-0.03	681.37	3581.25	1790.63	6171.38	3090.28	15.94	-1.527	-0.003	0.241
110.00	-70.89	-13.25	-1.43	-614.35	-0.03	614.35	3510.98	1755.49	5883.11	2945.93	17.59	-1.610	-0.003	0.229
115.00	-68.94	-13.09	-1.43	-548.10	-0.03	548.10	3439.14	1719.57	5598.97	2803.65	19.32	-1.690	-0.004	0.216
120.00	-67.03	-12.92	-1.43	-482.66	-0.04	482.66	3365.73	1682.87	5319.21	2663.56	21.13	-1.768	-0.004	0.201
125.00	-65.16	-12.75	-1.43	-418.04	-0.04	418.04	3290.76	1645.38	5044.03	2525.77	23.02	-1.843	-0.004	0.185
130.00	-56.60	-11.35	-1.43	-354.27	-0.04	354.27	3204.00	1602.00	4758.48	2382.78	24.99	-1.913	-0.004	0.166
135.00	-54.84	-11.16	-1.43	-297.53	-0.04	297.53	3102.32	1551.16	4459.76	2233.19	27.03	-1.978	-0.005	0.151
140.00	-41.31	-8.86	-1.43	-241.73	-0.05	241.73	3000.64	1500.32	4170.72	2088.46	29.13	-2.037	-0.005	0.130
142.75	-40.43	-8.75	-1.43	-217.35	-0.05	217.35	2944.72	1472.36	4015.87	2010.92	30.31	-2.067	-0.005	0.122
145.00	-39.47	-8.65	-1.43	-197.66	-0.05	197.66	2898.96	1449.48	3891.36	1948.57	31.29	-2.091	-0.005	0.115
147.25	-38.52	-8.56	-1.43	-178.19	-0.05	178.19	1774.96	887.48	2399.50	1201.53	32.29	-2.114	-0.005	0.170
150.00	-31.79	-6.99	-1.43	-154.66	-0.05	154.66	1752.91	876.46	2323.79	1163.62	33.51	-2.140	-0.006	0.151
155.00	-30.58	-6.80	-1.43	-119.73	-0.05	119.73	1711.62	855.81	2187.55	1095.40	35.78	-2.198	-0.006	0.127
160.00	-19.48	-4.73	-1.43	-85.75	-0.05	85.75	1668.76	834.38	2053.31	1028.18	38.11	-2.246	-0.007	0.095
165.00	-18.43	-4.53	-1.43	-62.10	-0.05	62.10	1624.34	812.17	1921.31	962.08	40.49	-2.285	-0.008	0.076
168.20	-16.87	-4.28	-1.43	-47.60	-0.05	47.60	1595.09	797.54	1838.10	920.41	42.02	-2.306	-0.008	0.062
170.00	-7.42	-2.56	-1.43	-39.91	-0.05	39.91	1578.35	789.17	1791.75	897.21	42.90	-2.316	-0.009	0.049
171.80	-6.54	-2.39	-1.43	-35.30	-0.06	35.30	1561.41	780.70	1745.76	874.18	43.77	-2.325	-0.009	0.045
175.00	-5.99	-2.27	-1.43	-27.66	-0.06	27.66	1530.79	765.40	1664.88	833.68	45.33	-2.339	-0.010	0.037
180.00	-5.14	-2.08	-1.43	-16.32	-0.06	16.32	1481.67	740.83	1540.90	771.60	47.79	-2.356	-0.011	0.025
185.00	-4.34	-1.91	-1.43	-5.90	-0.06	5.90	1427.20	713.60	1416.30	709.20	50.27	-2.366	-0.012	0.011
187.00	0.00	-1.73	-1.43	-2.08	0.00	2.08	1400.09	700.04	1362.73	682.38	51.26	-2.367	-0.012	0.003

Calculated Forces

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

Seismic Segment Forces (Factored)

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

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Load Case:	1.2D + 1.0E							**Iterations**	22
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.27		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1722.7	0.00	0.03	0.02	34.71	
10.00		1691.6	0.01	0.05	0.03	46.75	
15.00		1660.6	0.01	0.06	0.03	52.68	
20.00		1629.6	0.02	0.07	0.04	55.46	
25.00		1598.5	0.04	0.07	0.04	56.59	
30.00		1567.5	0.05	0.07	0.04	56.92	
35.00		1536.4	0.07	0.07	0.04	56.93	
40.00		1505.4	0.09	0.07	0.04	56.86	
45.00		1474.3	0.11	0.07	0.04	56.79	
46.25	Bot - Section 2	363.74	0.12	0.07	0.03	14.08	
50.00		2040.8	0.14	0.07	0.03	80.11	
53.25	Top - Section 1	1742.2	0.16	0.07	0.03	69.10	
55.00		437.17	0.17	0.07	0.03	17.41	
60.00		1230.7	0.20	0.06	0.02	49.28	
65.00		1203.5	0.23	0.06	0.02	47.60	
70.00		1176.3	0.27	0.05	0.02	44.61	
75.00		1149.2	0.31	0.04	0.01	39.82	
80.00		1122.0	0.35	0.03	0.01	32.73	
85.00		1094.9	0.40	0.02	0.01	23.09	
90.00		1067.7	0.44	0.00	0.01	11.15	
92.00	Appurtenance(s)	2024.4	0.46	0.00	0.01	11.33	
93.75	Bot - Section 3	363.48	0.48	-0.01	0.01	0.43	
95.00		482.50	0.49	-0.01	0.01	-0.99	
99.75	Top - Section 2	1804.7	0.54	-0.03	0.01	-25.85	
100.00		43.70	0.55	-0.03	0.01	-0.65	
105.00		861.80	0.60	-0.05	0.01	-22.89	
110.00		838.51	0.66	-0.07	0.02	-29.82	
115.00		815.23	0.72	-0.09	0.03	-33.63	
120.00		791.94	0.78	-0.11	0.05	-34.40	
125.00		768.66	0.85	-0.12	0.07	-32.42	
130.00	Appurtenance(s)	3162.2	0.92	-0.12	0.09	-118.98	
135.00		722.09	0.99	-0.11	0.13	-21.59	
140.00	Appurtenance(s)	4502.6	1.06	-0.09	0.17	-85.82	
142.75	Bot - Section 4	374.42	1.10	-0.07	0.19	-4.42	
145.00		505.63	1.14	-0.04	0.21	-2.61	
147.25	Top - Section 3	497.77	1.18	-0.02	0.24	1.04	
150.00	Appurtenance(s)	2600.9	1.22	0.02	0.27	30.69	
155.00		427.74	1.30	0.12	0.34	13.63	
160.00	Appurtenance(s)	3707.3	1.39	0.26	0.42	204.16	
165.00		396.69	1.47	0.44	0.51	32.32	
168.20	Appurtenance(s)	509.73	1.53	0.58	0.58	51.02	
170.00	Appurtenance(s)	3468.6	1.56	0.67	0.62	385.52	
171.80	Appurtenance(s)	331.72	1.60	0.77	0.67	40.68	
175.00		232.22	1.66	0.96	0.75	33.47	
180.00		350.12	1.75	1.33	0.90	63.22	

Seismic Segment Forces (Factored)

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

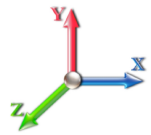
185.00			334.60	1.85	1.78	1.07	73.75		
187.00	Appurtenance(s)		1754.9	1.89	1.98	1.14	416.58		
		Totals:	**59,690.1**				**1,846.4**	**Total Wind:**	**50,471.3**

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

IES Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.19			**Iterations**	22
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.27	**SA**	0.03			**S1**	0.06
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-81.66	-2.26	0.00	-290.56	0.00	290.56	7001.91	3500.96	18524.4	9276.01		0.00	0.00	0.043
5.00	-79.27	-2.24	0.00	-279.23	0.00	279.23	6919.93	3459.96	17978.0	9002.40		0.00	-0.01	0.042
10.00	-76.92	-2.20	0.00	-268.03	0.00	268.03	6836.37	3418.19	17435.4	8730.69		0.02	-0.02	0.042
15.00	-74.61	-2.16	0.00	-257.01	0.00	257.01	6751.25	3375.63	16896.9	8461.01		0.04	-0.02	0.041
20.00	-72.33	-2.11	0.00	-246.21	0.00	246.21	6664.57	3332.28	16362.6	8193.47		0.06	-0.03	0.041
25.00	-70.09	-2.07	0.00	-235.64	0.00	235.64	6576.31	3288.16	15832.7	7928.16		0.10	-0.04	0.040
30.00	-67.88	-2.02	0.00	-225.31	0.00	225.31	6486.49	3243.25	15307.6	7665.22		0.15	-0.05	0.040
35.00	-65.72	-1.97	0.00	-215.23	0.00	215.23	6395.11	3197.55	14787.5	7404.75		0.20	-0.06	0.039
40.00	-63.59	-1.92	0.00	-205.39	0.00	205.39	6302.15	3151.08	14272.4	7146.85		0.26	-0.06	0.039
45.00	-61.50	-1.86	0.00	-195.80	0.00	195.80	6207.63	3103.82	13762.8	6891.65		0.33	-0.07	0.038
46.25	-60.98	-1.85	0.00	-193.47	0.00	193.47	6183.76	3091.88	13636.3	6828.29		0.35	-0.07	0.038
50.00	-58.29	-1.78	0.00	-186.52	0.00	186.52	6111.55	3055.77	13258.8	6639.26		0.41	-0.08	0.038
53.25	-55.99	-1.71	0.00	-180.74	0.00	180.74	5153.03	2576.51	11233.0	5624.85		0.47	-0.09	0.043
55.00	-55.35	-1.70	0.00	-177.76	0.00	177.76	5126.51	2563.25	11089.7	5553.12		0.50	-0.09	0.043
60.00	-53.56	-1.65	0.00	-169.27	0.00	169.27	5049.68	2524.84	10683.1	5349.50		0.60	-0.10	0.042
65.00	-51.79	-1.61	0.00	-161.01	0.00	161.01	4971.29	2485.64	10280.5	5147.92		0.71	-0.11	0.042
70.00	-50.06	-1.57	0.00	-152.95	0.00	152.95	4891.33	2445.66	9882.29	4948.49		0.83	-0.12	0.041
75.00	-48.35	-1.54	0.00	-145.09	0.00	145.09	4809.80	2404.90	9488.55	4751.33		0.96	-0.13	0.041
80.00	-46.69	-1.51	0.00	-137.41	0.00	137.41	4726.70	2363.35	9099.56	4556.54		1.10	-0.14	0.040
85.00	-45.05	-1.49	0.00	-129.86	0.00	129.86	4642.04	2321.02	8715.55	4364.25		1.25	-0.15	0.039
90.00	-43.45	-1.48	0.00	-122.41	0.00	122.41	4555.82	2277.91	8336.73	4174.56		1.42	-0.16	0.039
92.00	-40.89	-1.46	0.00	-119.45	0.00	119.45	4520.89	2260.44	8186.70	4099.44		1.48	-0.17	0.038
93.75	-40.34	-1.47	0.00	-116.89	0.00	116.89	4490.12	2245.06	8056.16	4034.07		1.55	-0.17	0.038
95.00	-39.68	-1.47	0.00	-115.06	0.00	115.06	4468.02	2234.01	7963.33	3987.58		1.59	-0.17	0.038
99.75	-37.22	-1.46	0.00	-108.09	0.00	108.09	3653.35	1826.67	6478.28	3243.96		1.77	-0.18	0.044
100.00	-37.15	-1.47	0.00	-107.72	0.00	107.72	3649.96	1824.98	6463.57	3236.59		1.78	-0.18	0.043
105.00	-35.80	-1.47	0.00	-100.38	0.00	100.38	3581.25	1790.63	6171.38	3090.28		1.97	-0.20	0.042
110.00	-34.48	-1.47	0.00	-93.03	0.00	93.03	3510.98	1755.49	5883.11	2945.93		2.19	-0.21	0.041
115.00	-33.18	-1.48	0.00	-85.66	0.00	85.66	3439.14	1719.57	5598.97	2803.65		2.41	-0.22	0.040
120.00	-31.91	-1.48	0.00	-78.28	0.00	78.28	3365.73	1682.87	5319.21	2663.56		2.65	-0.23	0.039
125.00	-30.68	-1.48	0.00	-70.89	0.00	70.89	3290.76	1645.38	5044.03	2525.77		2.90	-0.24	0.037
130.00	-26.56	-1.47	0.00	-63.49	0.00	63.49	3204.00	1602.00	4758.48	2382.78		3.16	-0.26	0.035
135.00	-25.40	-1.47	0.00	-56.16	0.00	56.16	3102.32	1551.16	4459.76	2233.19		3.43	-0.27	0.033
140.00	-19.70	-1.44	0.00	-48.82	0.00	48.82	3000.64	1500.32	4170.72	2088.46		3.72	-0.28	0.030
142.75	-19.13	-1.44	0.00	-44.85	0.00	44.85	2944.72	1472.36	4015.87	2010.92		3.89	-0.29	0.029
145.00	-18.43	-1.44	0.00	-41.61	0.00	41.61	2898.96	1449.48	3891.36	1948.57		4.02	-0.29	0.028
147.25	-17.74	-1.44	0.00	-38.37	0.00	38.37	1774.96	887.48	2399.50	1201.53		4.16	-0.30	0.042
150.00	-14.50	-1.39	0.00	-34.42	0.00	34.42	1752.91	876.46	2323.79	1163.62		4.33	-0.30	0.038
155.00	-13.78	-1.38	0.00	-27.46	0.00	27.46	1711.62	855.81	2187.55	1095.40		4.66	-0.31	0.033
160.00	-9.13	-1.15	0.00	-20.57	0.00	20.57	1668.76	834.38	2053.31	1028.18		4.99	-0.33	0.025
165.00	-8.54	-1.11	0.00	-14.83	0.00	14.83	1624.34	812.17	1921.31	962.08		5.34	-0.34	0.021
168.20	-7.85	-1.06	0.00	-11.26	0.00	11.26	1595.09	797.54	1838.10	920.41		5.57	-0.34	0.017
170.00	-3.65	-0.65	0.00	-9.35	0.00	9.35	1578.35	789.17	1791.75	897.21		5.69	-0.34	0.013
171.80	-3.24	-0.61	0.00	-8.19	0.00	8.19	1561.41	780.70	1745.76	874.18		5.82	-0.35	0.011
175.00	-2.96	-0.57	0.00	-6.24	0.00	6.24	1530.79	765.40	1664.88	833.68		6.06	-0.35	0.009
180.00	-2.52	-0.51	0.00	-3.39	0.00	3.39	1481.67	740.83	1540.90	771.60		6.42	-0.35	0.006
185.00	-2.11	-0.43	0.00	-0.86	0.00	0.86	1427.20	713.60	1416.30	709.20		6.79	-0.35	0.003

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

187.00	0.00	-0.42	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	6.94	-0.35	0.000

Seismic Segment Forces (Factored)

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.27		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1722.7	0.00	0.03	0.02	34.71	
10.00		1691.6	0.01	0.05	0.03	46.75	
15.00		1660.6	0.01	0.06	0.03	52.68	
20.00		1629.6	0.02	0.07	0.04	55.46	
25.00		1598.5	0.04	0.07	0.04	56.59	
30.00		1567.5	0.05	0.07	0.04	56.92	
35.00		1536.4	0.07	0.07	0.04	56.93	
40.00		1505.4	0.09	0.07	0.04	56.86	
45.00		1474.3	0.11	0.07	0.04	56.79	
46.25	Bot - Section 2	363.74	0.12	0.07	0.03	14.08	
50.00		2040.8	0.14	0.07	0.03	80.11	
53.25	Top - Section 1	1742.2	0.16	0.07	0.03	69.10	
55.00		437.17	0.17	0.07	0.03	17.41	
60.00		1230.7	0.20	0.06	0.02	49.28	
65.00		1203.5	0.23	0.06	0.02	47.60	
70.00		1176.3	0.27	0.05	0.02	44.61	
75.00		1149.2	0.31	0.04	0.01	39.82	
80.00		1122.0	0.35	0.03	0.01	32.73	
85.00		1094.9	0.40	0.02	0.01	23.09	
90.00		1067.7	0.44	0.00	0.01	11.15	
92.00	Appurtenance(s)	2024.4	0.46	0.00	0.01	11.33	
93.75	Bot - Section 3	363.48	0.48	-0.01	0.01	0.43	
95.00		482.50	0.49	-0.01	0.01	-0.99	
99.75	Top - Section 2	1804.7	0.54	-0.03	0.01	-25.85	
100.00		43.70	0.55	-0.03	0.01	-0.65	
105.00		861.80	0.60	-0.05	0.01	-22.89	
110.00		838.51	0.66	-0.07	0.02	-29.82	
115.00		815.23	0.72	-0.09	0.03	-33.63	
120.00		791.94	0.78	-0.11	0.05	-34.40	
125.00		768.66	0.85	-0.12	0.07	-32.42	
130.00	Appurtenance(s)	3162.2	0.92	-0.12	0.09	-118.98	
135.00		722.09	0.99	-0.11	0.13	-21.59	
140.00	Appurtenance(s)	4502.6	1.06	-0.09	0.17	-85.82	
142.75	Bot - Section 4	374.42	1.10	-0.07	0.19	-4.42	
145.00		505.63	1.14	-0.04	0.21	-2.61	
147.25	Top - Section 3	497.77	1.18	-0.02	0.24	1.04	
150.00	Appurtenance(s)	2600.9	1.22	0.02	0.27	30.69	
155.00		427.74	1.30	0.12	0.34	13.63	
160.00	Appurtenance(s)	3707.3	1.39	0.26	0.42	204.16	
165.00		396.69	1.47	0.44	0.51	32.32	
168.20	Appurtenance(s)	509.73	1.53	0.58	0.58	51.02	
170.00	Appurtenance(s)	3468.6	1.56	0.67	0.62	385.52	
171.80	Appurtenance(s)	331.72	1.60	0.77	0.67	40.68	
175.00		232.22	1.66	0.96	0.75	33.47	
180.00		350.12	1.75	1.33	0.90	63.22	

Seismic Segment Forces (Factored)

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

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185.00			334.60	1.85	1.78	1.07	73.75		
187.00	Appurtenance(s)		1754.9	1.89	1.98	1.14	416.58		
		Totals:	**59,690.1**				**1,846.4**	**Total Wind:**	**50,471.3**

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

IES Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 22

Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.27	**SA**	0.03			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.25	-2.26	0.00	-286.53	0.00	286.53	7001.91	3500.96	18524.4	9276.01		0.00	0.00	0.040
5.00	-59.45	-2.24	0.00	-275.21	0.00	275.21	6919.93	3459.96	17978.0	9002.40		0.00	-0.01	0.039
10.00	-57.69	-2.20	0.00	-264.03	0.00	264.03	6836.37	3418.19	17435.4	8730.69		0.02	-0.02	0.039
15.00	-55.95	-2.15	0.00	-253.05	0.00	253.05	6751.25	3375.63	16896.9	8461.01		0.04	-0.02	0.038
20.00	-54.25	-2.10	0.00	-242.29	0.00	242.29	6664.57	3332.28	16362.6	8193.47		0.06	-0.03	0.038
25.00	-52.57	-2.05	0.00	-231.78	0.00	231.78	6576.31	3288.16	15832.7	7928.16		0.10	-0.04	0.037
30.00	-50.91	-2.00	0.00	-221.52	0.00	221.52	6486.49	3243.25	15307.6	7665.22		0.14	-0.05	0.037
35.00	-49.29	-1.95	0.00	-211.51	0.00	211.51	6395.11	3197.55	14787.5	7404.75		0.20	-0.05	0.036
40.00	-47.69	-1.90	0.00	-201.76	0.00	201.76	6302.15	3151.08	14272.4	7146.85		0.26	-0.06	0.036
45.00	-46.12	-1.84	0.00	-192.27	0.00	192.27	6207.63	3103.82	13762.8	6891.65		0.33	-0.07	0.035
46.25	-45.74	-1.83	0.00	-189.97	0.00	189.97	6183.76	3091.88	13636.3	6828.29		0.35	-0.07	0.035
50.00	-43.72	-1.75	0.00	-183.10	0.00	183.10	6111.55	3055.77	13258.8	6639.26		0.41	-0.08	0.035
53.25	-41.99	-1.69	0.00	-177.40	0.00	177.40	5153.03	2576.51	11233.0	5624.85		0.46	-0.09	0.040
55.00	-41.52	-1.67	0.00	-174.45	0.00	174.45	5126.51	2563.25	11089.7	5553.12		0.50	-0.09	0.040
60.00	-40.17	-1.63	0.00	-166.08	0.00	166.08	5049.68	2524.84	10683.1	5349.50		0.59	-0.10	0.039
65.00	-38.84	-1.58	0.00	-157.95	0.00	157.95	4971.29	2485.64	10280.5	5147.92		0.70	-0.11	0.038
70.00	-37.54	-1.54	0.00	-150.02	0.00	150.02	4891.33	2445.66	9882.29	4948.49		0.82	-0.12	0.038
75.00	-36.26	-1.51	0.00	-142.31	0.00	142.31	4809.80	2404.90	9488.55	4751.33		0.95	-0.13	0.037
80.00	-35.01	-1.48	0.00	-134.77	0.00	134.77	4726.70	2363.35	9099.56	4556.54		1.08	-0.14	0.037
85.00	-33.79	-1.46	0.00	-127.38	0.00	127.38	4642.04	2321.02	8715.55	4364.25		1.23	-0.15	0.036
90.00	-32.58	-1.45	0.00	-120.09	0.00	120.09	4555.82	2277.91	8336.73	4174.56		1.39	-0.16	0.036
92.00	-30.67	-1.43	0.00	-117.19	0.00	117.19	4520.89	2260.44	8186.70	4099.44		1.46	-0.16	0.035
93.75	-30.26	-1.43	0.00	-114.69	0.00	114.69	4490.12	2245.06	8056.16	4034.07		1.52	-0.17	0.035
95.00	-29.76	-1.44	0.00	-112.89	0.00	112.89	4468.02	2234.01	7963.33	3987.58		1.56	-0.17	0.035
99.75	-27.91	-1.43	0.00	-106.08	0.00	106.08	3653.35	1826.67	6478.28	3243.96		1.74	-0.18	0.040
100.00	-27.86	-1.44	0.00	-105.72	0.00	105.72	3649.96	1824.98	6463.57	3236.59		1.75	-0.18	0.040
105.00	-26.85	-1.44	0.00	-98.54	0.00	98.54	3581.25	1790.63	6171.38	3090.28		1.94	-0.19	0.039
110.00	-25.86	-1.44	0.00	-91.35	0.00	91.35	3510.98	1755.49	5883.11	2945.93		2.15	-0.20	0.038
115.00	-24.88	-1.44	0.00	-84.15	0.00	84.15	3439.14	1719.57	5598.97	2803.65		2.37	-0.22	0.037
120.00	-23.93	-1.44	0.00	-76.94	0.00	76.94	3365.73	1682.87	5319.21	2663.56		2.60	-0.23	0.036
125.00	-23.01	-1.44	0.00	-69.73	0.00	69.73	3290.76	1645.38	5044.03	2525.77		2.85	-0.24	0.035
130.00	-19.92	-1.44	0.00	-62.51	0.00	62.51	3204.00	1602.00	4758.48	2382.78		3.10	-0.25	0.032
135.00	-19.05	-1.44	0.00	-55.33	0.00	55.33	3102.32	1551.16	4459.76	2233.19		3.37	-0.26	0.031
140.00	-14.77	-1.42	0.00	-48.16	0.00	48.16	3000.64	1500.32	4170.72	2088.46		3.66	-0.28	0.028
142.75	-14.35	-1.42	0.00	-44.26	0.00	44.26	2944.72	1472.36	4015.87	2010.92		3.82	-0.28	0.027
145.00	-13.82	-1.42	0.00	-41.07	0.00	41.07	2898.96	1449.48	3891.36	1948.57		3.95	-0.29	0.026
147.25	-13.30	-1.41	0.00	-37.89	0.00	37.89	1774.96	887.48	2399.50	1201.53		4.09	-0.29	0.039
150.00	-10.87	-1.37	0.00	-34.00	0.00	34.00	1752.91	876.46	2323.79	1163.62		4.26	-0.30	0.035
155.00	-10.34	-1.36	0.00	-27.15	0.00	27.15	1711.62	855.81	2187.55	1095.40		4.58	-0.31	0.031
160.00	-6.85	-1.14	0.00	-20.36	0.00	20.36	1668.76	834.38	2053.31	1028.18		4.91	-0.32	0.024
165.00	-6.40	-1.10	0.00	-14.69	0.00	14.69	1624.34	812.17	1921.31	962.08		5.25	-0.33	0.019
168.20	-5.89	-1.05	0.00	-11.16	0.00	11.16	1595.09	797.54	1838.10	920.41		5.47	-0.33	0.016
170.00	-2.73	-0.64	0.00	-9.28	0.00	9.28	1578.35	789.17	1791.75	897.21		5.60	-0.34	0.012
171.80	-2.43	-0.60	0.00	-8.12	0.00	8.12	1561.41	780.70	1745.76	874.18		5.72	-0.34	0.011
175.00	-2.22	-0.57	0.00	-6.19	0.00	6.19	1530.79	765.40	1664.88	833.68		5.95	-0.34	0.009
180.00	-1.89	-0.50	0.00	-3.36	0.00	3.36	1481.67	740.83	1540.90	771.60		6.31	-0.35	0.006
185.00	-1.58	-0.43	0.00	-0.85	0.00	0.85	1427.20	713.60	1416.30	709.20		6.68	-0.35	0.002

Calculated Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

187.00	0.00	-0.42	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	6.82	-0.35	0.000

Wind Loading - Shaft

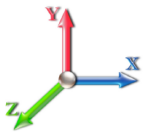
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	303.70	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	298.31	0.650	0.000	5.00	27.207	17.68	144.8	0.0	1722.7
10.00		1.00	0.85	7.442	8.19	292.93	0.650	0.000	5.00	26.721	17.37	142.2	0.0	1691.7
15.00		1.00	0.86	7.534	8.29	289.32	0.650	0.000	5.00	26.234	17.05	141.3	0.0	1660.6
20.00		1.00	0.91	7.978	8.78	292.15	0.650	0.000	5.00	25.748	16.74	146.9	0.0	1629.6
25.00		1.00	0.95	8.345	9.18	293.09	0.650	0.000	5.00	25.261	16.42	150.7	0.0	1598.6
30.00		1.00	0.99	8.659	9.53	292.76	0.650	0.000	5.00	24.775	16.10	153.4	0.0	1567.5
35.00		1.00	1.02	8.936	9.83	291.51	0.650	0.000	5.00	24.288	15.79	155.2	0.0	1536.5
40.00		1.00	1.05	9.184	10.10	289.55	0.650	0.000	5.00	23.802	15.47	156.3	0.0	1505.4
45.00		1.00	1.07	9.410	10.35	287.02	0.650	0.000	5.00	23.315	15.15	156.9	0.0	1474.4
46.25	Bot - Section 2	1.00	1.08	9.463	10.41	286.32	0.650	0.000	1.25	5.753	3.74	38.9	0.0	363.7
50.00		1.00	1.10	9.616	10.58	284.04	0.650	0.000	3.75	17.353	11.28	119.3	0.0	2040.8
53.25	Top - Section 1	1.00	1.11	9.742	10.72	281.89	0.650	0.000	3.25	14.818	9.63	103.2	0.0	1742.2
55.00		1.00	1.12	9.807	10.79	285.37	0.650	0.000	1.75	7.894	5.13	55.4	0.0	437.2
60.00		1.00	1.14	9.986	10.98	281.72	0.650	0.000	5.00	22.226	14.45	158.7	0.0	1230.7
65.00		1.00	1.16	10.153	11.17	277.78	0.650	0.000	5.00	21.739	14.13	157.8	0.0	1203.6
70.00		1.00	1.18	10.310	11.34	273.59	0.650	0.000	5.00	21.253	13.81	156.7	0.0	1176.4
75.00		1.00	1.19	10.459	11.50	269.17	0.650	0.000	5.00	20.766	13.50	155.3	0.0	1149.2
80.00		1.00	1.21	10.600	11.66	264.56	0.650	0.000	5.00	20.280	13.18	153.7	0.0	1122.1
85.00		1.00	1.23	10.734	11.81	259.77	0.650	0.000	5.00	19.793	12.87	151.9	0.0	1094.9
90.00		1.00	1.24	10.863	11.95	254.81	0.650	0.000	5.00	19.307	12.55	150.0	0.0	1067.7
92.00	Appurtenance(s)	1.00	1.25	10.913	12.00	252.79	0.650	0.000	2.00	7.586	4.93	59.2	0.0	419.5
93.75	Bot - Section 3	1.00	1.25	10.956	12.05	251.00	0.650	0.000	1.75	6.574	4.27	51.5	0.0	363.5
95.00		1.00	1.25	10.986	12.08	249.71	0.650	0.000	1.25	4.739	3.08	37.2	0.0	482.5
99.75	Top - Section 2	1.00	1.27	11.098	12.21	244.74	0.650	0.000	4.75	17.730	11.52	140.7	0.0	1804.8
100.00		1.00	1.27	11.104	12.21	248.77	0.650	0.000	0.25	0.921	0.60	7.3	0.0	43.7
105.00		1.00	1.28	11.218	12.34	243.43	0.650	0.000	5.00	18.165	11.81	145.7	0.0	861.8
110.00		1.00	1.29	11.327	12.46	237.97	0.650	0.000	5.00	17.678	11.49	143.2	0.0	838.5
115.00		1.00	1.31	11.432	12.58	232.40	0.650	0.000	5.00	17.192	11.17	140.5	0.0	815.2
120.00		1.00	1.32	11.534	12.69	226.74	0.650	0.000	5.00	16.705	10.86	137.8	0.0	791.9
125.00		1.00	1.33	11.633	12.80	220.98	0.650	0.000	5.00	16.219	10.54	134.9	0.0	768.7
130.00	Appurtenance(s)	1.00	1.34	11.729	12.90	215.13	0.650	0.000	5.00	15.732	10.23	131.9	0.0	745.4
135.00		1.00	1.35	11.822	13.00	209.19	0.650	0.000	5.00	15.246	9.91	128.9	0.0	722.1
140.00	Appurtenance(s)	1.00	1.36	11.912	13.10	203.18	0.650	0.000	5.00	14.759	9.59	125.7	0.0	698.8
142.75	Bot - Section 4	1.00	1.37	11.961	13.16	199.84	0.650	0.000	2.75	7.910	5.14	67.6	0.0	374.4
145.00		1.00	1.37	12.000	13.20	197.09	0.650	0.000	2.25	6.458	4.20	55.4	0.0	505.6
147.25	Top - Section 3	1.00	1.37	12.038	13.24	194.33	0.650	0.000	2.25	6.359	4.13	54.7	0.0	497.8
150.00	Appurtenance(s)	1.00	1.38	12.085	13.29	193.92	0.650	0.000	2.75	7.638	4.97	66.0	0.0	241.9
155.00		1.00	1.39	12.168	13.39	187.70	0.650	0.000	5.00	13.511	8.78	117.6	0.0	427.7
160.00	Appurtenance(s)	1.00	1.40	12.249	13.47	181.42	0.650	0.000	5.00	13.025	8.47	114.1	0.0	412.2
165.00		1.00	1.41	12.328	13.56	175.08	0.650	0.000	5.00	12.538	8.15	110.5	0.0	396.7
168.20	Appurtenance(s)	1.00	1.41	12.378	13.62	170.99	0.650	0.000	3.20	7.769	5.05	68.8	0.0	245.7
170.00	Appurtenance(s)	1.00	1.42	12.406	13.65	168.67	0.650	0.000	1.80	4.283	2.78	38.0	0.0	135.4
171.80	Appurtenance(s)	1.00	1.42	12.433	13.68	166.36	0.650	0.000	1.80	4.219	2.74	37.5	0.0	133.4
175.00		1.00	1.43	12.481	13.73	162.22	0.650	0.000	3.20	7.346	4.77	65.6	0.0	232.2
180.00		1.00	1.43	12.555	13.81	155.70	0.650	0.000	5.00	11.079	7.20	99.5	0.0	350.1
185.00		1.00	1.44	12.627	13.89	149.14	0.650	0.000	5.00	10.592	6.88	95.6	0.0	334.6

Wind Loading - Shaft

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

187.00	Appurtenance(s)	1.00	1.45	12.656	13.92	146.50	0.650	0.000	2.00	4.101	2.67	37.1	0.0	129.5
								Totals:	**187.00**			**5,160.8**		**40,789.2**

Discrete Appurtenance Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

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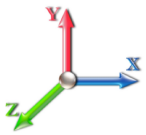
Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	Low Profile Platform	1	12.656	13.921	1.00	1.00	22.00	1500.00	0.000	0.000	306.27	0.00	0.00
2	187.00	DB201	2	12.722	13.995	1.00	1.00	7.08	50.00	0.000	4.750	99.08	0.00	470.64
3	187.00	ANT450F6	1	12.711	13.982	1.00	1.00	1.86	21.00	0.000	3.917	26.01	0.00	101.86
4	187.00	ANT900D6-9	2	12.685	13.953	1.00	1.00	1.96	22.00	0.000	2.042	27.35	0.00	55.84
5	187.00	MF-900B	2	12.656	13.921	1.00	1.00	6.90	26.00	2.015	0.000	96.06	193.60	0.00
6	187.00	6' Lightning rod	1	12.656	13.921	1.00	1.00	0.38	6.50	0.000	0.000	5.29	0.00	0.00
7	171.80	Ericsson Air6419 N77G	3	12.433	13.676	0.57	0.75	6.50	198.30	0.000	0.000	88.87	0.00	0.00
8	170.00	CCI DTMABP7819VG12A	3	12.406	13.646	0.50	0.75	1.72	57.60	0.000	0.000	23.45	0.00	0.00
9	170.00	Ericsson RRUS-32	3	12.406	13.646	0.50	0.75	2.49	231.00	0.000	0.000	33.94	0.00	0.00
10	170.00	Ericsson RRUS 8843 B2	3	12.406	13.646	0.50	0.75	2.47	210.00	0.000	0.000	33.74	0.00	0.00
11	170.00	Quintel QD6616-7	3	12.406	13.646	0.55	0.75	23.47	238.20	0.000	0.000	320.30	0.00	0.00
12	170.00	Cci DMP65R-BU6DA	3	12.406	13.646	0.54	0.75	20.59	238.20	0.000	0.000	280.98	0.00	0.00
13	170.00	Kaelus DBC0061F1V51-2	6	12.406	13.646	0.50	0.75	1.30	152.40	0.000	0.000	17.69	0.00	0.00
14	170.00	Ericsson 4478 B14	3	12.406	13.646	0.50	0.75	2.77	179.70	0.000	0.000	37.85	0.00	0.00
15	170.00	CSS DBC-750	3	12.406	13.646	0.50	0.75	0.77	14.40	0.000	0.000	10.49	0.00	0.00
16	170.00	Raycap DC6-48-60-18-8F	3	12.406	13.646	0.75	0.75	2.07	95.40	0.000	0.000	28.25	0.00	0.00
17	170.00	Commscope	3	12.406	13.646	0.50	0.75	0.08	3.30	0.000	0.000	1.03	0.00	0.00
18	170.00	Low Profile Platform w/	1	12.406	13.646	1.00	1.00	27.70	1700.00	0.000	0.000	378.00	0.00	0.00
19	170.00	Ericsson RRUS 4449	3	12.406	13.646	0.50	0.75	2.97	213.00	0.000	0.000	40.53	0.00	0.00
20	168.20	Ericsson Air6449 N77D	3	12.378	13.616	0.64	0.75	7.90	264.00	0.000	0.000	107.55	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	12.249	13.474	1.00	1.00	32.00	1600.00	0.000	0.000	431.18	0.00	0.00
22	160.00	Air32	3	12.249	13.474	0.65	0.75	12.74	396.60	0.000	0.000	171.71	0.00	0.00
23	160.00	APXVAARR24_43-U-NA2	3	12.249	13.474	0.52	0.75	31.88	384.00	0.000	0.000	429.53	0.00	0.00
24	160.00	SDX1926Q-43	3	12.249	13.474	0.38	0.75	0.58	12.90	0.000	0.000	7.88	0.00	0.00
25	160.00	AIR6449 B41	3	12.249	13.474	0.53	0.75	9.03	309.00	0.000	0.000	121.62	0.00	0.00
26	160.00	MS-KI22-5 (Kickers)	1	12.249	13.474	1.00	1.00	5.33	146.00	0.000	0.000	71.82	0.00	0.00
27	160.00	KRY 112 144/1	3	12.249	13.474	0.38	0.75	0.46	33.00	0.000	0.000	6.21	0.00	0.00
28	160.00	RRUS 4415 B25	3	12.249	13.474	0.50	0.75	2.47	138.00	0.000	0.000	33.31	0.00	0.00
29	160.00	4449 B71+B12	3	12.249	13.474	0.50	0.75	2.49	210.00	0.000	0.000	33.52	0.00	0.00
30	160.00	MS-1436 (Light Collar	1	12.249	13.474	1.00	1.00	1.50	65.60	0.000	0.000	20.21	0.00	0.00
31	150.00	MC-PK8-DSH	1	12.085	13.294	1.00	1.00	37.59	1727.00	0.000	0.000	499.70	0.00	0.00
32	150.00	RDIDC-9181-OF-48	1	12.085	13.294	0.75	0.75	1.51	21.90	0.000	0.000	20.04	0.00	0.00
33	150.00	TA08025-B605	3	12.085	13.294	0.50	0.75	2.95	225.00	0.000	0.000	39.28	0.00	0.00
34	150.00	MX08FRO665-21	3	12.085	13.294	0.55	0.75	20.80	193.50	0.000	0.000	276.45	0.00	0.00
35	150.00	TA08025-B604	3	12.085	13.294	0.50	0.75	2.95	191.70	0.000	0.000	39.28	0.00	0.00
36	140.00	Samsung RF4440d-13A	3	11.912	13.103	0.50	0.75	2.82	210.90	0.000	0.000	36.94	0.00	0.00
37	140.00	Commscope	3	11.912	13.103	0.62	0.75	15.09	144.30	0.000	0.000	197.72	0.00	0.00
38	140.00	Samsung MT6407-77A	3	11.912	13.103	0.52	0.75	7.39	238.20	0.000	0.000	96.79	0.00	0.00
39	140.00	VZWSMART-PLK1	1	11.912	13.103	1.00	1.00	12.25	504.00	0.000	0.000	160.51	0.00	0.00
40	140.00	PRK-SFS	1	11.912	13.103	1.00	1.00	9.50	588.00	0.000	0.000	124.48	0.00	0.00
41	140.00	Commscope	3	11.912	13.103	0.62	0.75	15.09	131.10	0.000	0.000	197.72	0.00	0.00
42	140.00	Samsung RF4439d-25A	3	11.912	13.103	0.50	0.75	2.83	224.10	0.000	0.000	37.14	0.00	0.00
43	140.00	Samsung LTE CBRS	3	11.912	13.103	0.50	0.75	1.49	55.80	0.000	0.000	19.56	0.00	0.00
44	140.00	LNX-6514DS-VTM	3	11.912	13.103	0.60	0.75	14.56	116.40	0.000	0.000	190.81	0.00	0.00
45	140.00	DB-T1-6Z-8AB-0Z	2	11.912	13.103	0.68	0.75	5.60	88.00	0.000	0.000	73.33	0.00	0.00
46	140.00	KS-24019	6	11.912	13.103	1.00	1.00	0.72	3.00	0.000	0.000	9.43	0.00	0.00
47	140.00	Low Profile Platform	1	11.912	13.103	1.00	1.00	22.00	1500.00	0.000	0.000	288.27	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 47

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48	130.00	APXVSPP18-C-A20	3	11.729	12.902	0.66	0.80	15.98	171.00	0.000	0.000	206.12	0.00	0.00
49	130.00	APXVTM14-C-120	3	11.729	12.902	0.63	0.80	12.02	168.00	0.000	0.000	155.09	0.00	0.00
50	130.00	TD-RRH8x20-25	3	11.729	12.902	0.40	0.80	4.86	210.00	0.000	0.000	62.70	0.00	0.00
51	130.00	1900MHz RRH	3	11.729	12.902	0.54	0.80	6.11	132.00	0.000	0.000	78.84	0.00	0.00
52	130.00	800 MHz RRH	3	11.729	12.902	0.54	0.80	4.00	159.00	0.000	0.000	51.66	0.00	0.00
53	130.00	800MHz Filter	3	11.729	12.902	0.54	0.80	1.25	26.40	0.000	0.000	16.18	0.00	0.00
54	130.00	RF Filters	3	11.729	12.902	0.54	0.80	1.50	46.50	0.000	0.000	19.29	0.00	0.00
55	130.00	ACU-A20-N	4	11.729	12.902	0.40	0.80	0.22	4.00	0.000	0.000	2.89	0.00	0.00
56	130.00	Low Profile Platform	1	11.729	12.902	1.00	1.00	22.00	1500.00	0.000	0.000	283.84	0.00	0.00
57	92.00	Low Profile Platform	1	10.913	12.004	1.00	1.00	22.00	1500.00	0.000	0.000	264.09	0.00	0.00
58	92.00	DB205	1	11.127	12.240	1.00	1.00	1.80	38.00	0.000	9.000	22.03	0.00	198.28
59	92.00	ANT450Y10-WR	1	10.913	12.004	1.00	1.00	0.49	5.00	0.000	0.000	5.88	0.00	0.00
60	92.00	ANT150D3	1	11.034	12.137	1.00	1.00	2.18	18.00	0.000	5.000	26.46	0.00	132.29
61	92.00	ANT4506-9	1	10.986	12.085	1.00	1.00	2.77	18.00	0.000	3.000	33.47	0.00	100.42
62	92.00	MF-900B	2	10.913	12.004	1.00	1.00	6.90	26.00	2.887	0.000	82.83	239.11	0.00
							Totals:		**18,900.90**			**6,908.51**		

Total Applied Force Summary

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

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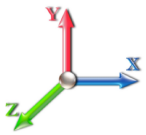
Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		144.77	1990.95	0.00	0.00
10.00		142.18	1959.90	0.00	0.00
15.00		141.31	1928.86	0.00	0.00
20.00		146.87	1897.81	0.00	0.00
25.00		150.72	1866.77	0.00	0.00
30.00		153.39	1835.72	0.00	0.00
35.00		155.19	1804.67	0.00	0.00
40.00		156.30	1773.63	0.00	0.00
45.00		156.86	1742.58	0.00	0.00
46.25		38.92	430.79	0.00	0.00
50.00		119.32	2241.98	0.00	0.00
53.25		103.22	1916.57	0.00	0.00
55.00		55.36	531.05	0.00	0.00
60.00		158.69	1498.93	0.00	0.00
65.00		157.81	1471.77	0.00	0.00
70.00		156.67	1444.60	0.00	0.00
75.00		155.29	1417.44	0.00	0.00
80.00		153.70	1390.27	0.00	0.00
85.00		151.92	1363.11	0.00	0.00
90.00		149.96	1335.94	0.00	0.00
92.00	(7) attachments	493.96	2131.77	239.11	431.00
93.75		51.50	455.68	0.00	0.00
95.00		37.22	548.36	0.00	0.00
99.75		140.69	2054.99	0.00	0.00
100.00		7.31	56.87	0.00	0.00
105.00		145.69	1125.21	0.00	0.00
110.00		143.17	1101.92	0.00	0.00
115.00		140.53	1078.64	0.00	0.00
120.00		137.77	1055.35	0.00	0.00
125.00		134.90	1032.07	0.00	0.00
130.00	(26) attachments	1008.54	3425.68	0.00	0.00
135.00		128.86	969.19	0.00	0.00
140.00	(32) attachments	1558.40	4749.70	0.00	0.00
142.75		67.65	472.37	0.00	0.00
145.00		55.41	585.78	0.00	0.00
147.25		54.74	577.92	0.00	0.00
150.00	(11) attachments	940.75	2698.93	0.00	0.00
155.00		117.55	596.44	0.00	0.00
160.00	(24) attachments	1441.06	3876.01	0.00	0.00
165.00		110.52	496.59	0.00	0.00
168.20	(3) attachments	176.31	573.67	0.00	0.00
170.00	(37) attachments	1244.23	3504.60	0.00	0.00
171.80	(3) attachments	126.38	335.68	0.00	0.00
175.00		65.55	239.26	0.00	0.00
180.00		99.45	361.12	0.00	0.00
185.00		95.63	345.60	0.00	0.00

Total Applied Force Summary

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 49

Tower Engineering Solutions

187.00	(9) attachments	597.16	1759.39	193.60	628.33
	Totals:	**12,069.34**	**68,052.12**	**432.71**	**1,059.33**

Linear Appurtenance Segment Forces (Factored)

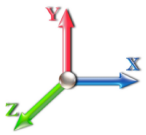
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	9.40
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	9.40
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.534	0.00	9.40
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.978	0.00	9.40
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.345	0.00	9.40
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.659	0.00	9.40
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.936	0.00	9.40
40.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.184	0.00	9.40
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.410	0.00	9.40
46.25	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	2.35
50.00	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.000	0.000	9.616	0.00	7.05
53.25	1.6" Hybrid	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.742	0.00	6.11
55.00	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.807	0.00	3.29
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.986	0.00	9.40
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.153	0.00	9.40
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.310	0.00	9.40
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.459	0.00	9.40
80.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.600	0.00	9.40
85.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.734	0.00	9.40
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.863	0.00	9.40
92.00	1.6" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.913	0.00	3.76
93.75	1.6" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	10.956	0.00	3.29
95.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	10.986	0.00	2.35
99.75	1.6" Hybrid	Yes	4.75	0.000	0.00	0.00	0.00	0.000	0.000	11.098	0.00	8.93
100.00	1.6" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	11.104	0.00	0.47
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.218	0.00	9.40
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.327	0.00	9.40
115.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.432	0.00	9.40
120.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.534	0.00	9.40
125.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.633	0.00	9.40
130.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.729	0.00	9.40
135.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.822	0.00	9.40
140.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.912	0.00	9.40
142.75	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	11.961	0.00	5.17
145.00	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	12.000	0.00	4.23
147.25	1.6" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	12.038	0.00	4.23
150.00	1.6" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	12.085	0.00	5.17
										Totals:	**0.0**	**282.0**

Calculated Forces

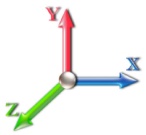
Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-68.05	-12.09	-0.43	-1568.2	0.00	1568.25	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.179
5.00	-66.05	-12.00	-0.43	-1507.7	0.00	1507.79	6919.93	3459.96	17978.0	9002.40	0.02	-0.041	0.000	0.177
10.00	-64.08	-11.90	-0.43	-1447.8	0.00	1447.81	6836.37	3418.19	17435.4	8730.69	0.09	-0.082	0.000	0.175
15.00	-62.14	-11.80	-0.43	-1388.3	0.00	1388.32	6751.25	3375.63	16896.9	8461.01	0.20	-0.124	0.000	0.173
20.00	-60.24	-11.69	-0.43	-1329.3	0.00	1329.32	6664.57	3332.28	16362.6	8193.47	0.35	-0.167	0.000	0.171
25.00	-58.36	-11.58	-0.43	-1270.8	0.00	1270.86	6576.31	3288.16	15832.7	7928.16	0.55	-0.210	0.000	0.169
30.00	-56.52	-11.46	-0.43	-1212.9	0.00	1212.96	6486.49	3243.25	15307.6	7665.22	0.79	-0.254	0.000	0.167
35.00	-54.70	-11.34	-0.43	-1155.6	0.00	1155.65	6395.11	3197.55	14787.5	7404.75	1.08	-0.298	0.000	0.165
40.00	-52.92	-11.22	-0.43	-1098.9	0.00	1098.94	6302.15	3151.08	14272.4	7146.85	1.42	-0.343	0.000	0.162
45.00	-51.18	-11.07	-0.43	-1042.8	0.00	1042.86	6207.63	3103.82	13762.8	6891.65	1.80	-0.388	0.000	0.160
46.25	-50.74	-11.05	-0.43	-1029.0	0.00	1029.02	6183.76	3091.88	13636.3	6828.29	1.90	-0.400	0.000	0.159
50.00	-48.49	-10.94	-0.43	-987.57	0.00	987.57	6111.55	3055.77	13258.8	6639.26	2.23	-0.434	0.000	0.157
53.25	-46.57	-10.84	-0.43	-952.01	0.00	952.01	5153.03	2576.51	11233.0	5624.85	2.54	-0.465	0.000	0.178
55.00	-46.04	-10.81	-0.43	-933.03	0.00	933.03	5126.51	2563.25	11089.7	5553.12	2.71	-0.481	0.000	0.177
60.00	-44.53	-10.68	-0.43	-878.97	0.00	878.97	5049.68	2524.84	10683.1	5349.50	3.24	-0.531	0.000	0.173
65.00	-43.05	-10.55	-0.43	-825.57	0.00	825.57	4971.29	2485.64	10280.5	5147.92	3.83	-0.582	0.000	0.169
70.00	-41.60	-10.41	-0.43	-772.84	0.00	772.84	4891.33	2445.66	9882.29	4948.49	4.46	-0.633	0.000	0.165
75.00	-40.17	-10.27	-0.43	-720.79	0.00	720.79	4809.80	2404.90	9488.55	4751.33	5.15	-0.683	0.000	0.160
80.00	-38.78	-10.14	-0.43	-669.42	0.00	669.42	4726.70	2363.35	9099.56	4556.54	5.90	-0.734	0.000	0.155
85.00	-37.41	-10.00	-0.43	-618.73	0.00	618.73	4642.04	2321.02	8715.55	4364.25	6.69	-0.785	0.000	0.150
90.00	-36.07	-9.85	-0.43	-568.73	0.00	568.73	4555.82	2277.91	8336.73	4174.56	7.54	-0.835	0.000	0.144
92.00	-33.94	-9.34	-0.19	-548.59	0.00	548.59	4520.89	2260.44	8186.70	4099.44	7.90	-0.855	0.000	0.141
93.75	-33.48	-9.29	-0.19	-532.25	0.00	532.25	4490.12	2245.06	8056.16	4034.07	8.21	-0.873	0.000	0.139
95.00	-32.93	-9.26	-0.19	-520.64	0.00	520.64	4468.02	2234.01	7963.33	3987.58	8.44	-0.886	0.000	0.138
99.75	-30.87	-9.10	-0.19	-476.64	0.00	476.64	3653.35	1826.67	6478.28	3243.96	9.35	-0.933	0.000	0.155
100.00	-30.81	-9.11	-0.19	-474.37	0.00	474.37	3649.96	1824.98	6463.57	3236.59	9.40	-0.935	0.000	0.155
105.00	-29.68	-8.97	-0.19	-428.82	0.00	428.82	3581.25	1790.63	6171.38	3090.28	10.41	-0.988	0.000	0.147
110.00	-28.57	-8.83	-0.19	-383.97	0.00	383.97	3510.98	1755.49	5883.11	2945.93	11.47	-1.040	0.000	0.139
115.00	-27.49	-8.70	-0.19	-339.80	0.00	339.80	3439.14	1719.57	5598.97	2803.65	12.59	-1.091	-0.001	0.129
120.00	-26.43	-8.56	-0.19	-296.31	0.00	296.31	3365.73	1682.87	5319.21	2663.56	13.76	-1.139	-0.001	0.119
125.00	-25.40	-8.42	-0.19	-253.51	0.00	253.51	3290.76	1645.38	5044.03	2525.77	14.97	-1.184	-0.001	0.108
130.00	-21.99	-7.36	-0.19	-211.38	0.00	211.38	3204.00	1602.00	4758.48	2382.78	16.24	-1.226	-0.001	0.096
135.00	-21.02	-7.22	-0.19	-174.59	0.00	174.59	3102.32	1551.16	4459.76	2233.19	17.54	-1.265	-0.001	0.085
140.00	-16.30	-5.57	-0.19	-138.47	0.00	138.47	3000.64	1500.32	4170.72	2088.46	18.89	-1.299	-0.001	0.072
142.75	-15.83	-5.49	-0.19	-123.17	0.00	123.17	2944.72	1472.36	4015.87	2010.92	19.64	-1.316	-0.001	0.067
145.00	-15.24	-5.43	-0.19	-110.81	0.00	110.81	2898.96	1449.48	3891.36	1948.57	20.26	-1.330	-0.001	0.062
147.25	-14.67	-5.36	-0.19	-98.60	0.00	98.60	1774.96	887.48	2399.50	1201.53	20.89	-1.343	-0.001	0.090
150.00	-11.99	-4.36	-0.19	-83.86	0.00	83.86	1752.91	876.46	2323.79	1163.62	21.67	-1.357	-0.001	0.079
155.00	-11.39	-4.24	-0.19	-62.05	0.00	62.05	1711.62	855.81	2187.55	1095.40	23.11	-1.388	-0.001	0.063
160.00	-7.55	-2.70	-0.19	-40.87	0.00	40.87	1668.76	834.38	2053.31	1028.18	24.58	-1.412	-0.001	0.044
165.00	-7.06	-2.58	-0.19	-27.35	0.00	27.35	1624.34	812.17	1921.31	962.08	26.07	-1.430	-0.001	0.033
168.20	-6.49	-2.39	-0.19	-19.09	0.00	19.09	1595.09	797.54	1838.10	920.41	27.03	-1.439	-0.001	0.025
170.00	-3.02	-1.06	-0.19	-14.79	0.00	14.79	1578.35	789.17	1791.75	897.21	27.57	-1.443	-0.001	0.018
171.80	-2.68	-0.93	-0.19	-12.88	0.00	12.88	1561.41	780.70	1745.76	874.18	28.11	-1.446	-0.001	0.016
175.00	-2.45	-0.85	-0.19	-9.91	0.00	9.91	1530.79	765.40	1664.88	833.68	29.09	-1.451	-0.001	0.013
180.00	-2.09	-0.75	-0.19	-5.64	0.00	5.64	1481.67	740.83	1540.90	771.60	30.61	-1.457	-0.001	0.009
185.00	-1.74	-0.64	-0.19	-1.91	0.00	1.91	1427.20	713.60	1416.30	709.20	32.14	-1.460	-0.002	0.004
187.00	0.00	-0.60	-0.19	-0.63	0.00	0.63	1400.09	700.04	1362.73	682.38	32.75	-1.461	-0.002	0.001

Calculated Forces

Structure:	CT07824-S-SBA		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 52

Final Analysis Summary

Structure:	CT07824-S-SBA	**Code:**	TIA-222-G	6/28/2022	
Site Name:	South Windsor	**Exposure:**	C		
Height:	187.00 (ft)	**Crest Height:**	0.00		
Base Elev:	1.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	50.6	0.00	81.58	0.02	1.11	6605.01
0.9D + 1.6W 97 mph Wind	50.6	0.00	61.17	0.01	1.11	6519.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	17.1	0.00	136.55	0.04	3.08	2361.87
1.2D + 1.0E	2.3	0.00	81.66	0.00	0.00	290.56
0.9D + 1.0E	2.3	0.00	61.25	0.00	0.00	286.53
1.0D + 1.0W 60 mph Wind	12.1	0.00	68.05	0.00	0.43	1568.25

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-54.44	-45.67	-1.12	-4018.0	-0.03	-4018.0	5153.03	2576.5	11233.0	5624.85	53.25	0.725
0.9D + 1.6W 97 mph Wind	-61.17	-50.56	-1.11	-6519.9	-0.01	-6519.9	7001.91	3500.9	18524.4	9276.01	0.00	0.712
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-102.49	-16.12	-3.08	-1469.9	-0.05	-1469.9	5153.03	2576.5	11233.0	5624.85	53.25	0.281
1.2D + 1.0E	-37.22	-1.46	0.00	-108.09	0.00	-108.09	3653.35	1826.6	6478.28	3243.96	99.75	0.044
0.9D + 1.0E	-27.91	-1.43	0.00	-106.08	0.00	-106.08	3653.35	1826.6	6478.28	3243.96	99.75	0.040
1.0D + 1.0W 60 mph Wind	-68.05	-12.09	-0.43	-1568.2	0.00	-1568.2	7001.91	3500.9	18524.4	9276.01	0.00	0.179

Base Plate Summary

Structure:	CT07824-S-SB		**Code:**	TIA-222-G	6/28/2022
Site Name:	South Windsor		**Exposure:**	C	
Height:	187.00 (ft)		**Crest Height:**	0.00	
Base Elev:	1.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 54

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	6540.46
Axial (kip):	82.75
Shear (kip):	47.90
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	6605.01
Axial (kip):	81.58
Shear (kip):	50.60

Base Plate	
Yield (ksi):	60.00
Width (in):	78.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	11.23
Moment (kip-in):	621.62
Allow Stress (ksi):	81.00
Applied Stress (ksi):	53.46
Stress Ratio:	0.66

Anchor Bolts	
Bolt Circle:	72.00
Number Bolts:	26.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	174.61
Allowable (kip):	260.00
Ratio:	0.69
Tension	
Force (kip):	164.11
Allowable (kip):	260.00
Ratio:	0.65

Monopole Mat Foundation Design

			Date: 6/24/2022
Customer Name:	AT&T	**EIA/TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	187
Site Number:	CT07824-S-SBA	**Engineer Name:**	J. Tibbetts
Engr. Number:	130879	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

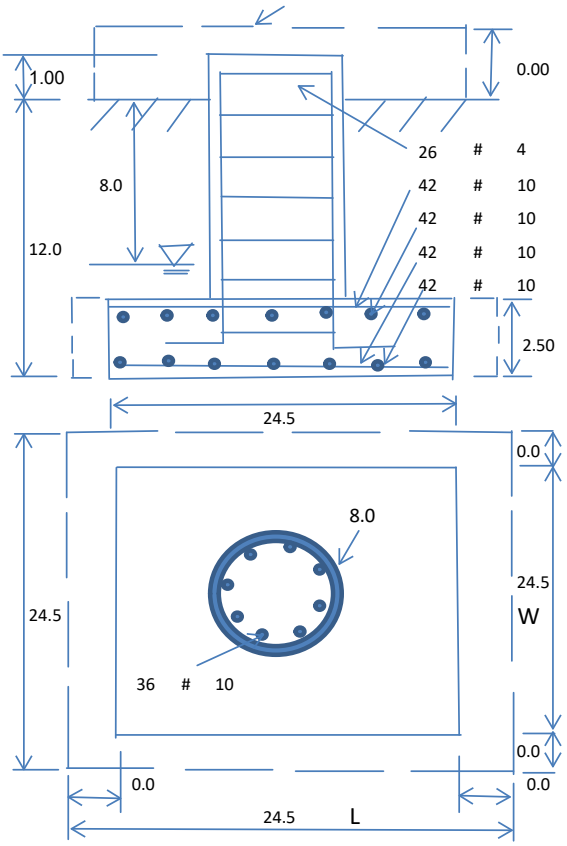
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	81.6	Shear Force (Kips):	50.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6605.0
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	12.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5
Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	8.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	4399.88	Total Dry Soil Weight (Kips):	527.99
Total Buoyant Soil Volume (cu. Ft.):	889.38	Total Buoyant Soil Weight (Kips):	44.47
Total Effective Soil Weight (Kips):	572.45	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	452.39	Total Dry Concrete Weight (Kips):	67.86
Total Buoyant Concrete Volume (cu. Ft.):	1576.02	Total Buoyant Concrete Weight (Kips):	138.06
Total Effective Concrete Weight (Kips):	205.92	Total Vertical Load on Base (Kips):	859.97

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	5209	<	Allowable Factored Soil Bearing (psf):	6000	0.87	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	9545.7	>	Design Factored Momont (kips-ft):	6577	0.69	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.45	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.27		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8888.9	>	Design Factored Moment (Mu, Kips-F	7136.3	0.80	OK!
Calculated Shear Capacity (Kips):	993.9	>	Design Factored Shear (Kips):	50.6	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	>	Design Factored Axial Load (Pu Kips):	81.6	0.01	OK!
Moment & Axial Strength Combination:	0.80	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	735.6	>	One-Way Factored Shear (L-D. Kips):	430.3	0.58	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	735.6	>	One-Way Factored Shear (W-D., Kips)	430.3	0.58	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	668.1	>	One-Way Factored Shear (C-C, Kips):	416.6	0.62	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0069		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5946.5	>	Moment at Bottom (L-Dir. K-Ft):	2122.4	0.36	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5946.5	>	Moment at Bottom (W-Dir. K-Ft):	2122.4	0.36	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8246.5	>	Moment at Bottom (C-C Dir. K-Ft):	3001.6	0.36	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0069		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5946.5	>	Moment at the top (L-Dir K-Ft):	799.7	0.13	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5946.5	>	Moment at the top (W-Dir K-Ft):	799.7	0.13	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8246.5	>	Moment at the top (C-C Dir. K-Ft):	756.3	0.09	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2642.0	k-ft.	Max. factored shear stress v_{u_CD}:		4.5	Psi
Max. factored shear stress v_{u_AB}:	17.8	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	17.8	Psi	Check Usage of Punching Shear Capacity:		0.09	OK!