May 3, 2019

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

Regarding:	Notice of Exempt Modification – Equipment Modification
Property Address:	90 North Plains Industrial Rd., Wallingford, CT 06492 (the "Property")
Applicant:	AT&T Mobility ("AT&T", Site # CT5173)

Dear Ms. Bachman:

AT&T currently maintains a (9) antenna wireless telecommunications facility at the 160' level on an existing 178.5-foot monopole at the above-referenced address, Latitude 41.48075°, Longitude -72.8177°. Said monopole is owned by American Tower. The property is owned by RLR Investments LLC

AT&T desires to modify its existing telecommunications facility by adding three (3) panel antennas and upgrading ancillary tower-mounted equipment as follows: swapping (3) remote radio heads (RRHs) and adding (6) RRHs, adding (3) low band combiners, and adding (1) squid surge suppressor. The centerline height of the existing antennas and ancillary tower-mounted equipment is and will remain at 160 feet.

Please accept this application 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 Hon. William W. Dickinson, Jr., Mayor of the Town of Wallingford; Kacie Hand, Town Planner; RLR Investments LLC, as property owner; and the tower owner, American Tower.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72 (b)(2). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The added antennas and accessory equipment will be installed at the existing height of 160 feet on the 187.5-foot monopole.

2. The proposed modifications will not involve any changes to AT&T's ground-space footprint, and therefore and therefore will not require an extension of the site boundary.

3. The proposed modification will not increase the noise level 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 (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (enclosed) for AT&T's modified facility is herein provided.

5. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation for AT&T's modified facility is herein provided.

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

7. The existing structure and its foundation can support AT&T's proposed modifications. Please see enclosed structural analysis completed by American Tower Corporation on May 2, 2019.

For the foregoing reasons, AT&T respectfully requests that the proposed installation be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Julia Coughlin

Julia Coughlin
Site Acquisition Specialist
Empire Telecom USA, LLC
jcoughlin@empiretelecomm.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

cc:

Hon. William W. Dickinson, Jr.
45 South Main Street
Wallingford Town Hall, Room #310
Wallingford, CT 06492

Kacie Hand, Town Planner
45 South Main Street
Wallingford Town Hall, Room #G-40
Wallingford, CT 06492

RLR Investments LLC
600 Gillam Rd.
Wilmington, OH 45177

American Tower Corp.
10 Presidential Way
Woburn, MA 01801
Attn: Ryan Tierney

EXHIBIT 1

Property Location: 90 NORTH PLAINS IND RD | MAP ID: 63/ / 15/ / | Bldg Name: | State Use: 3140
Vision ID: 15720 | Account # B0423200 | Bldg #: 1 of 1 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 02/16/2018 14:20

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
R L R INVESTMENTS LLC	1 Level	2 Public Water	1 Paved	5 Industrial
600 GILLAM RD				
WILMINGTON, OH 45177				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	059001023A	P/Z MAP #	01-20
Census:	1754	ENG MAP #	0-1231
Old MBLU		Easement	
TC MAP #		Town Line?	
TC MAP #		IND PARKS IN	
Record Lot			
GIS ID: 63/15		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
COM LAND	2-1	306,900	214,800
COM BLDG	2-2	1,165,800	816,100
COM OUTBL	2-5	231,800	162,300
UTL LAND	4-1	200,000	140,000
	Total	1,904,500	1,333,200

6148
WALLINGFORD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
R L R INVESTMENTS LLC	967/1109	09/12/2000		1	950,000	
BILKAYS EXPRESS CO	501/1027	09/11/1980			0	

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2017	2-1	214,800	2016	2-1	214,800	2015	2-1	214,800
2017	2-2	816,100	2016	2-2	816,100	2015	2-2	816,100
2017	2-5	162,300	2016	2-5	162,300	2015	2-5	162,300
2017	4-1	140,000	2016	4-1	140,000	2015	4-1	140,000
	Total:	1,333,200		Total:	1,333,200		Total:	1,333,200

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
I2/A				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	1,089,000
Appraised XF (B) Value (Bldg)	76,800
Appraised OB (L) Value (Bldg)	231,800
Appraised Land Value (Bldg)	506,900
Special Land Value	0
Total Appraised Parcel Value	1,904,500
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	1,904,500

NOTES

& L CARRIERS
EAT = PROPANE
8X100 BAS-SHOP
EE PID 133726
OMMUNICATIONS TOWER=5 SETS REPEATERS
-120' HT)-SPECTRASITE
COMMUN'S-888-773-2872
TANK=10000 GAL DIESEL=PP
TOWER BUILT 3/17/99
EYB=ADD(2001,ORIG (1989) ECO=MKT
ADDN-100 X 276 (2001)

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
27653	05/10/2013	CM	Commercial	15,000	07/10/2013	100		EQUIPMENT PADS
24344 CA	01/22/2010	CA	C - Approval	0	07/23/2010	100	10/29/2010	
24344	01/22/2010	CM	Commercial	15,000	07/23/2010	100	10/29/2010	INSTALL 3 ANTENNAS
23761 CA	05/19/2009	CA	C - Approval	0	07/20/2009	100	01/13/2010	C/A FOR BP #23761
23761	05/19/2009	CM	Commercial	26,000	07/20/2009	100	07/20/2009	CHANGE EXISTING A
20960	08/31/2006	CM	Commercial	10,000	09/27/2006	100	08/31/2006	Install new antennas
14259 CO	07/12/2002	CC	C of C	1,155,000	09/05/2002	100	03/04/2002	C/C Addition to Termina

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
07/10/2013	02		TH	63	Permit Check - No Measu
07/23/2010	02	8	DH	63	Permit Check - No Measu
05/11/2010	03		KPC	29	Field Review
07/27/2009	03		TH	00	Measur+Listed
07/20/2009	02	8	DH	63	Permit Check - No Measu

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	3140	TRK TERM M96	I40				43,560	SF	2.76	1.0000	C	1.0000	1.00	C60	0.85	3X L/B		1.00	2.35	102,200
1	3140	TRK TERM M96	I40				1.75	AC	120,200.00	1.0000	0	1.0000	1.00	C60	0.85			1.00	102,170.00	178,800
1	4310	TEL REL TW M96					1.00	BL	200,000.00	1.0000	0	1.0000	1.00		0.00	CELL SITE-2,500 SF		1.00	200,000.00	200,000
1	4310	TEL REL TW M96					2,500	SF	0.00	1.0000	0	1.0000	1.00		0.00	CELL SITE AREA		.00	0.00	0
1	3140	TRK TERM M96					2.59	AC	10,000.00	1.0000	0	1.0000	1.00		0.00			1.00	10,000.00	25,900

Total Card Land Units: 5.40 AC | Parcel Total Land Area: 5.4 AC | Total Land Value: 506,900

Property Location: 90 NORTH PLAINS IND RD | MAP ID: 63/ / 15/ / | Bldg Name: | State Use: 3140

Vision ID: 15720 | Account # B0423200 | Bldg #: 1 of 1 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 02/16/2018 14:20

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	414		Warehouse
Model	96		Ind/Comm
Grade	C+		
Stories	1		
Occupancy	1		
Exterior Wall 1	20		Brick/Masonry
Exterior Wall 2	27		Pre-finsh Metl
Roof Structure	03		Gable
Roof Cover	01		Metal/Tin
Interior Wall 1	01		Minim/Masonry
Interior Wall 2			
Interior Floor 1	04		Coner Abv Grad
Interior Floor 2			
Heating Fuel	03		Gas
Heating Type	08		Radiant
AC Type	06		Partial
Bldg Use	3140		TRK TERM M96
Total Rooms			
Total Bedrms	00		
Total Baths	0		
Heat/AC	00		Heat/Min
Frame Type	05		Steel
Baths/Plumbing	02		Average
Ceiling/Wall	04		Ceil & Min WL
Rooms/Prtns	02		Average
Wall Height	14		
% Comn Wall	0		

CONSTRUCTION DETAIL (CONTINUED)

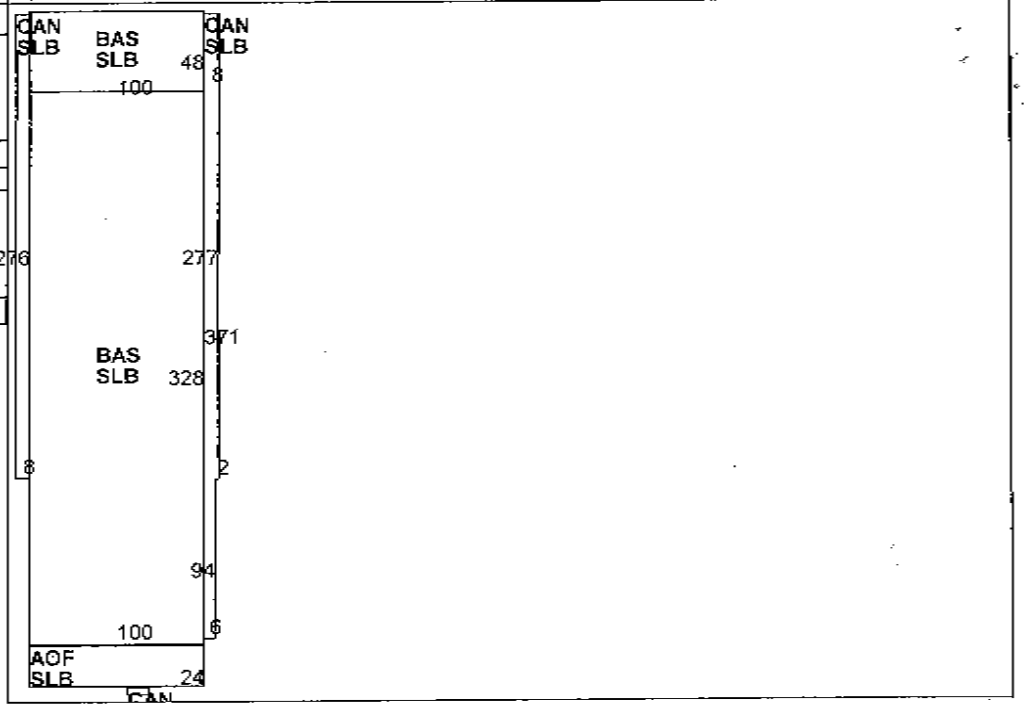
Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
3140	TRK TERM M96	100

COST/MARKET VALUATION

Adj. Base Rate:	36.25
	1,512,437
Net Other Adj:	0.00
Replace Cost	1,512,437
AYB	1981
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	28
Functional Obsinc	0
External Obsinc	0
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	72
Apprais Val	1,089,000
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



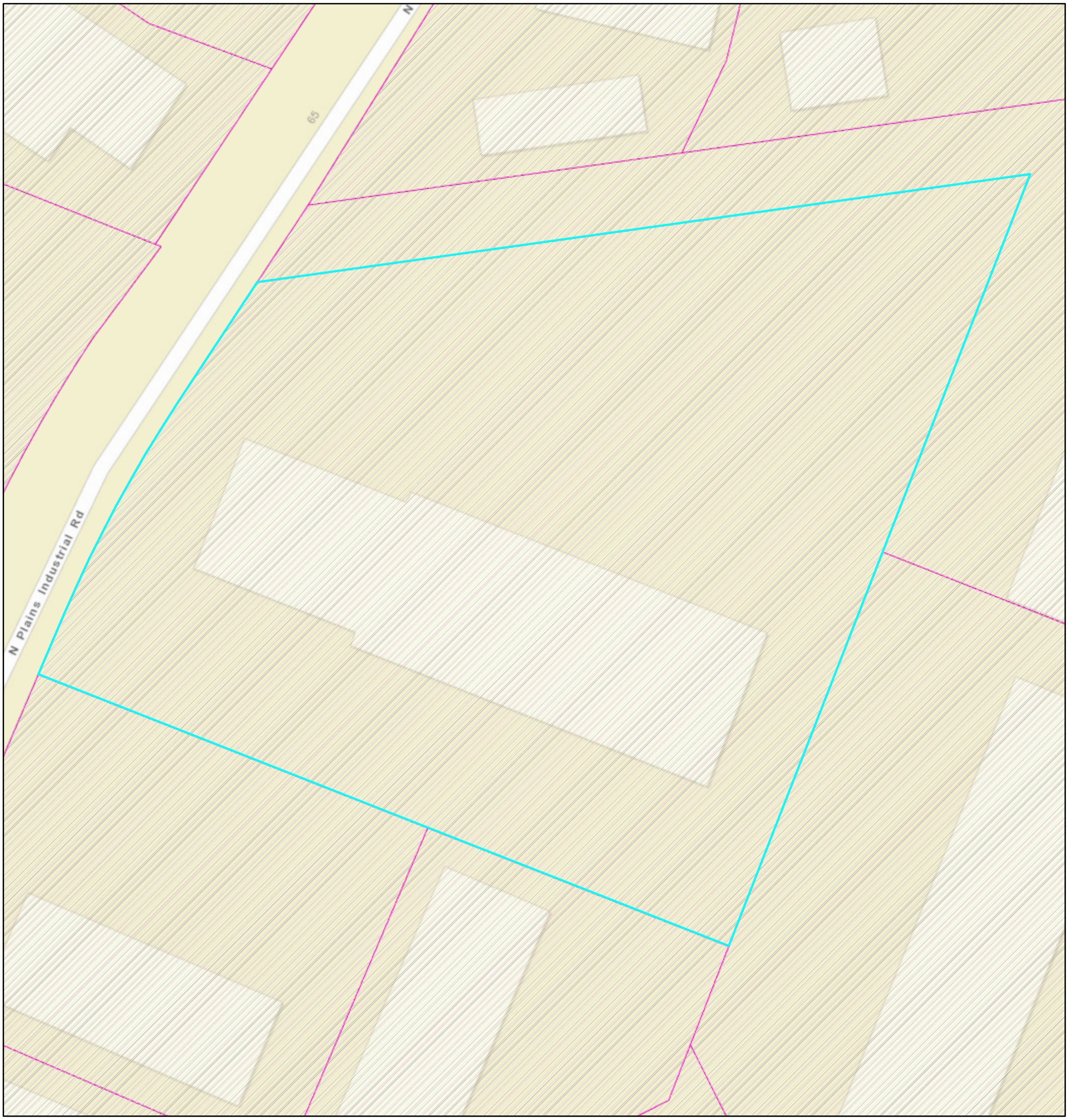
OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
	Lights-In w/PL			L	4	860.00	2001	C		A	50	1,700
	w/Double Ligh			L	1	1,400.00	2001	C		A	50	700
PAV2	Paving-Conc			L	40,100	3.50	2002	C		G	70	98,200
PAV1	Paving-Asphalt			L	67,000	3.00	2001	C		A	50	100,500
FN3	Fence-6' Chain			L	1,900	11.00	2001	C		G	70	14,600
CP3	Canopy-Comm			L	1,150	20.00	2001	C		G	70	16,100
	Air Condition			B	2,400	3.50	1987		1		100	6,000
2	w/Man Lift Ou			B	53	1,100.00	1987		1		100	42,000
1	Sprinklers Wet			B	40,000	1.00	1987		1		100	28,800

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
	Office	2,400	2,400	3,120	47.12	113,088
	First Floor	37,600	37,600	37,600	36.25	1,362,850
	Canopy	0	5,036	1,007	7.25	36,500
	Slab	0	44,988	0	0.00	0
	Tll. Gross Liv/Lease Area:	40,000	90,024	41,727		1,512,437

Town of Wallingford, CT



4/3/2019, 5:03:07 PM

Lot Boundaries

1:1,128

0 0.01 0.01 0.03 mi

0 0.01 0.03 0.06 km

Commerical/Industrial Mapping Resource
All data subject to verification

EXHIBIT 2

PROJECT NOTES

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
   A. PLAN ENTITLED "CT5173 YALESVILLE" PREPARED BY CENTEK ENGINEERING OF BRADFORD, CT LAST REVISED 11/21/17.
   B. LIMITED FIELD OBSERVATION BY MASER CONSULTING ON 05/29/2018.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
10. THE PROPOSED FACILITY WILL CAUSE AN INSIGNIFICANT OR "DE-MINIMUS" INCREASE IN STORM WATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
11. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
12. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
13. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
14. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
15. THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-G AS PER IBC REQUIREMENTS.
16. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
17. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
18. CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.

SITE NAME: YALESVILLE
FA NUMBER: 10071351
SITE NUMBER: CT5173
6C - MRCTB032271
7C - MRCTB032200
5G NR UPGRADE - MRCTB032229
90 NORTH PLAINS INDUSTRIAL ROAD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY
AMERICAN TOWER SITE ID#: 302467

VICINITY MAP

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC
2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70
3. 2017 NFPA 101
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10
5. AMERICAN CONCRETE INSTITUTE
6. TIA-222-G
7. TIA 607 FOR GROUNDING
8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 LATEST EDITION
9. TELCORDIA GR-1275
10. ANSI T1.311
11. PROPOSED USE: UNMANNED TELECOM FACILITY
12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
13. CONSTRUCTION TYPE: IIB
14. USE GROUP: U

PROJECT INFORMATION

SITE INFORMATION

LATITUDE:	41.4807610° N
LONGITUDE:	72.8177280° W
JURISDICTION:	NEW HAVEN COUNTY

APPLICANT/LESSEE

COMPANY:	NEW CINGULAR WIRELESS PCS, LLC
ADDRESS:	550 COCHITUATE ROAD
CITY, STATE, ZIP:	FRAMINGHAM, MA 01701

TOWER OWNER

COMPANY:	AMERICAN TOWER
ADDRESS:	116 HUNTINGTON AVE, 11TH FLOOR
CITY, STATE, ZIP:	BOSTON, MA 02116
SITE ID #	302467

CLIENT REPRESENTATIVE

COMPANY:	EMPIRE TELECOM
ADDRESS:	16 ESQUIRE ROAD
CITY, STATE, ZIP:	BILLERICA, MA 01862
CONTACT:	DAVID COOPER
E-MAIL:	DCOOPER@EMPIRETELECOM.COM

SITE ACQUISITION

COMPANY:	EMPIRE TELECOM
ADDRESS:	16 ESQUIRE ROAD
CITY, STATE, ZIP:	BILLERICA, MA 01862
CONTACT:	DAVID COOPER
E-MAIL:	DCOOPER@EMPIRETELECOM.COM

ENGINEER

COMPANY:	MASER CONSULTING CONNECTICUT
ADDRESS:	331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701-5699
CONTACT:	ROBERT ANDREWS
PHONE:	(856) 797-0412
E-MAIL:	RANDREWS@MASERCONSULTING.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- REMOVE (3) RRUS, INSTALL (9) NEW RRUS, (3) PER SECTOR
- INSTALL (3) NEW PANEL ANTENNAS, (1) PER SECTOR
- INSTALL (1) NEW DC-6 SURGE SUPPRESSION DOME
- INSTALL (2) NEW 6/C DC CABLES
- INSTALL (1) 18-PAIR FIBER TRUNK
- INSTALL (3) LOW BAND COMBINERS, (1) PER SECTOR
- INSTALL (3) LOW BAND COMBINERS AT GRADE
- SWAP (1) EXISTING IDL2 WITH (1) PROPOSED IDLE
- SWAP (1) EXISTING DUS WITH (1) PROPOSED 5216
- INSTALL (1) PROPOSED RBS 6630

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2282809, VERSION 3.00, LAST UPDATED 09/10/2018.

SHEET INDEX

MASER CONSULTING CONNECTICUT
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Landscape Architects ■ Environmental Scientists

at&t

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01862

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE :	JOB NUMBER :
AS SHOWN	18963020A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	11/29/18	FOR CONSTRUCTION	AJC	RA
2	10/22/18	REVISED PER COMMENTS	AJC	RA
1	09/20/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOURAKLAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32977
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

90 N. PLAINS INDUSTRIAL RD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
TITLE SHEET

SHEET NUMBER :
T-1

M:\Active_13044\Art\07131_A20_18918_CT5173_REV1_CD.dwg(T-1 By: RANDREWS

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5O HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. 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.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" 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.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

    CONTRACTOR - EMPIRE TELECOM
    SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
    OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)

23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. 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.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. 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.
30. 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.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. 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.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. 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.
49. 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.
50. 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 ALERT OF DANGEROUS EXPOSURE LEVELS.

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SCALE :	JOB NUMBER :
AS SHOWN	18963020A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	11/29/18	FOR CONSTRUCTION	AJC	RA
2	10/22/18	REVISED PER COMMENTS	AJC	RA
1	09/20/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT — PETROS E. TSOUKALAS — 32577 — REGISTERED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

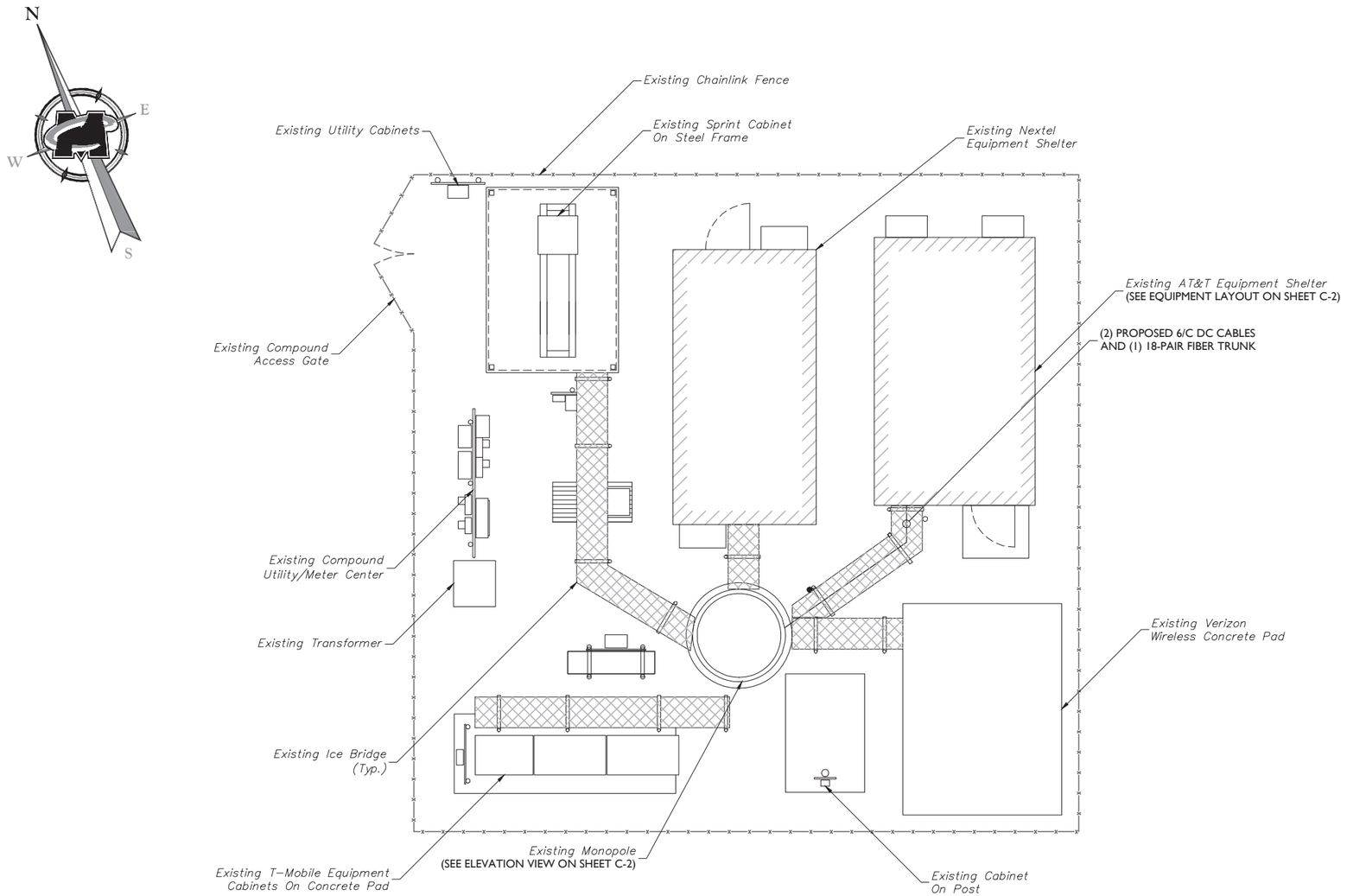
90 N. PLAINS INDUSTRIAL RD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
GENERAL NOTES

SHEET NUMBER :
GN-1

\\Maser...\18963020A\07131_A20_18918_CT5173_ REV_1_ CD.dwg\GN-1 By: RANDREWS



COMPOUND PLAN

5 4 3 2 1 0 2.5 5 10

SCALE : 1" = 5' FOR 22"X34"
(SCALE : 1" = 10' FOR 11"X17")

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STATE OF CONNECTICUT · PETROS E. TSOUKALAS · LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER, LICENSE NUMBER: 32073

SITE NAME:

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FA# 10071351
SITE# CT5173

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NEW HAVEN COUNTY

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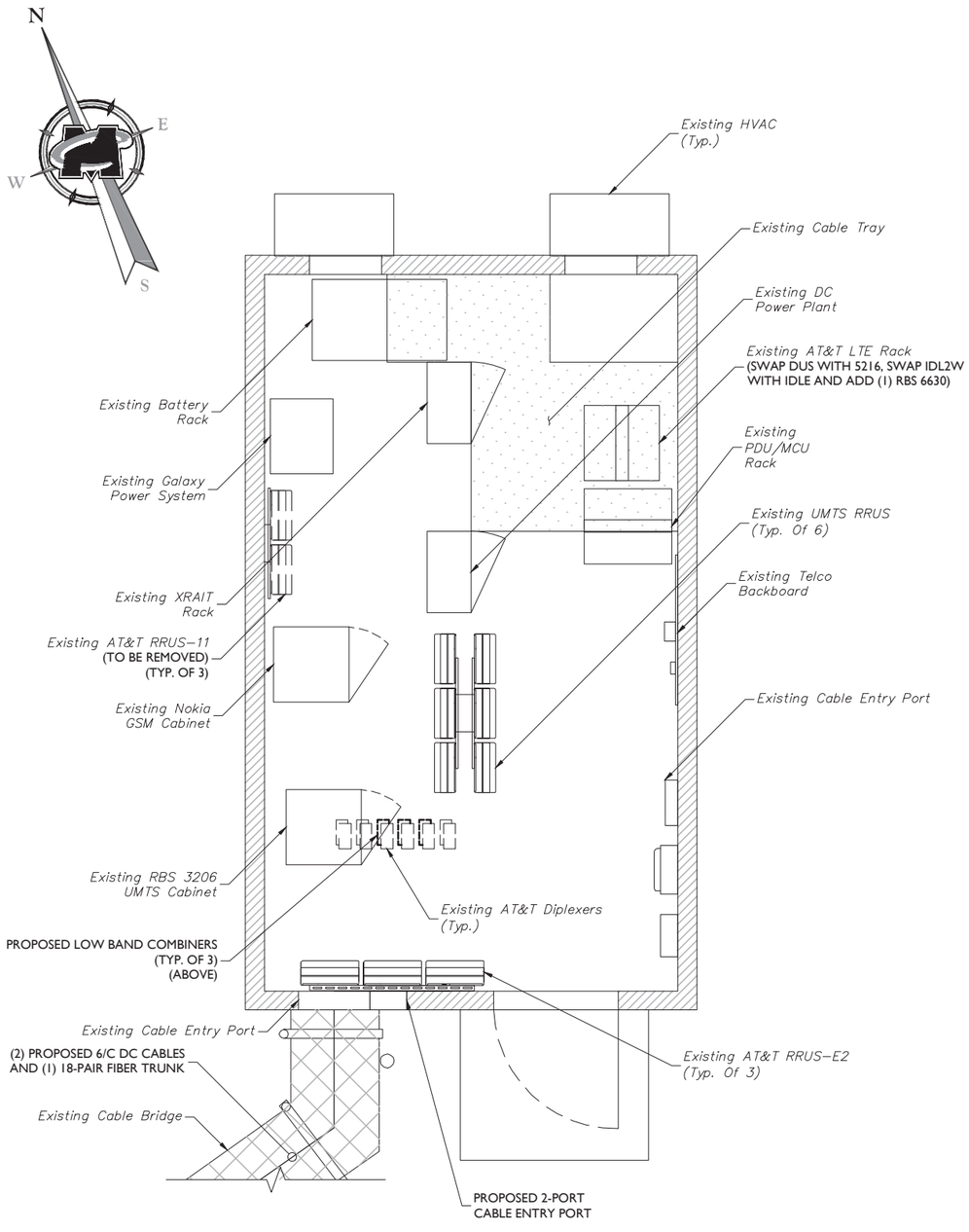
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

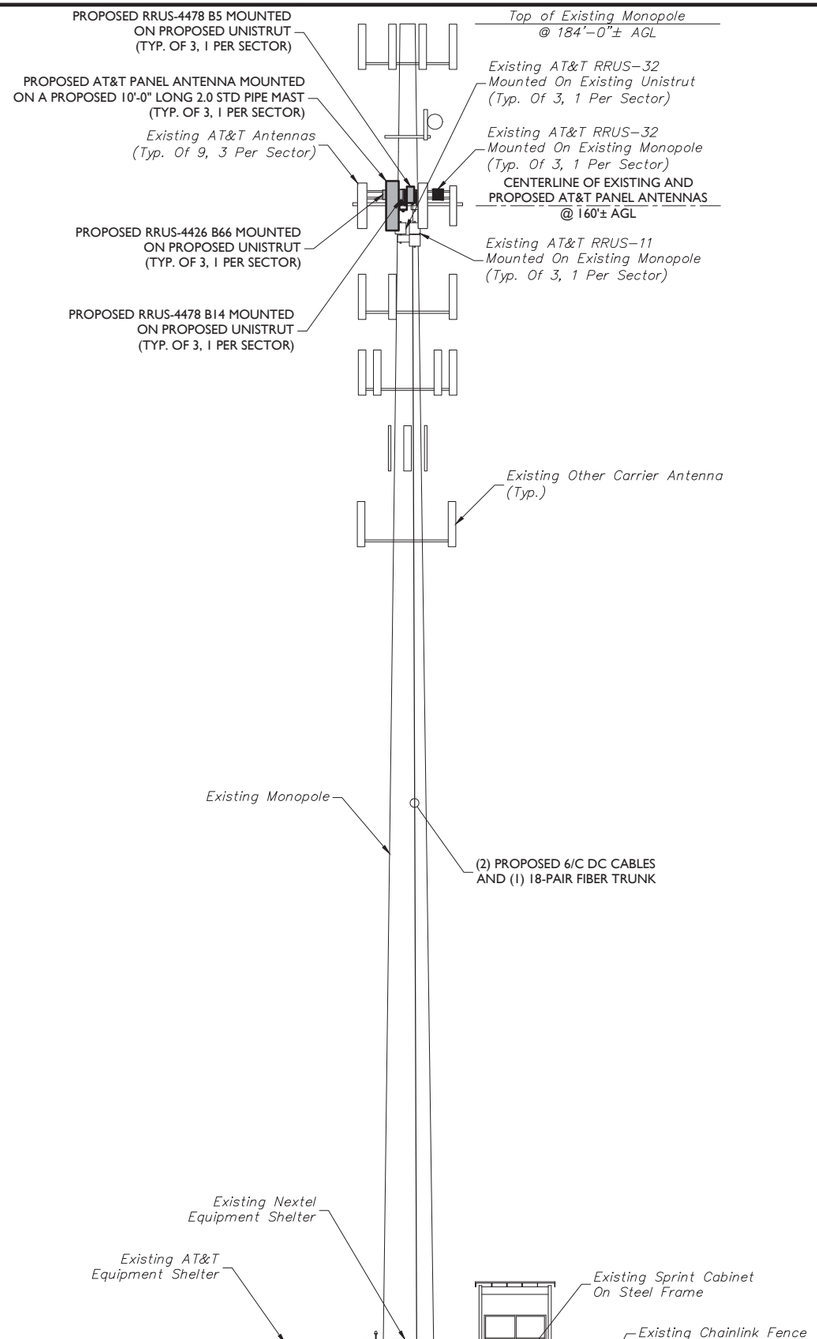
SHEET TITLE :
COMPOUND PLAN

SHEET NUMBER :
C-1



EQUIPMENT LAYOUT

SCALE : 1" = 2' FOR 22"X34"
(SCALE : 1" = 4' FOR 11"X17")



ELEVATION VIEW

SCALE : 1" = 10' FOR 22"X34"
(SCALE : 1" = 20' FOR 11"X17")

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STATE OF CONNECTICUT — PETROS E. STOUKALAS — LICENSED PROFESSIONAL ENGINEER

PETROS E. STOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32587

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

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NEW HAVEN COUNTY

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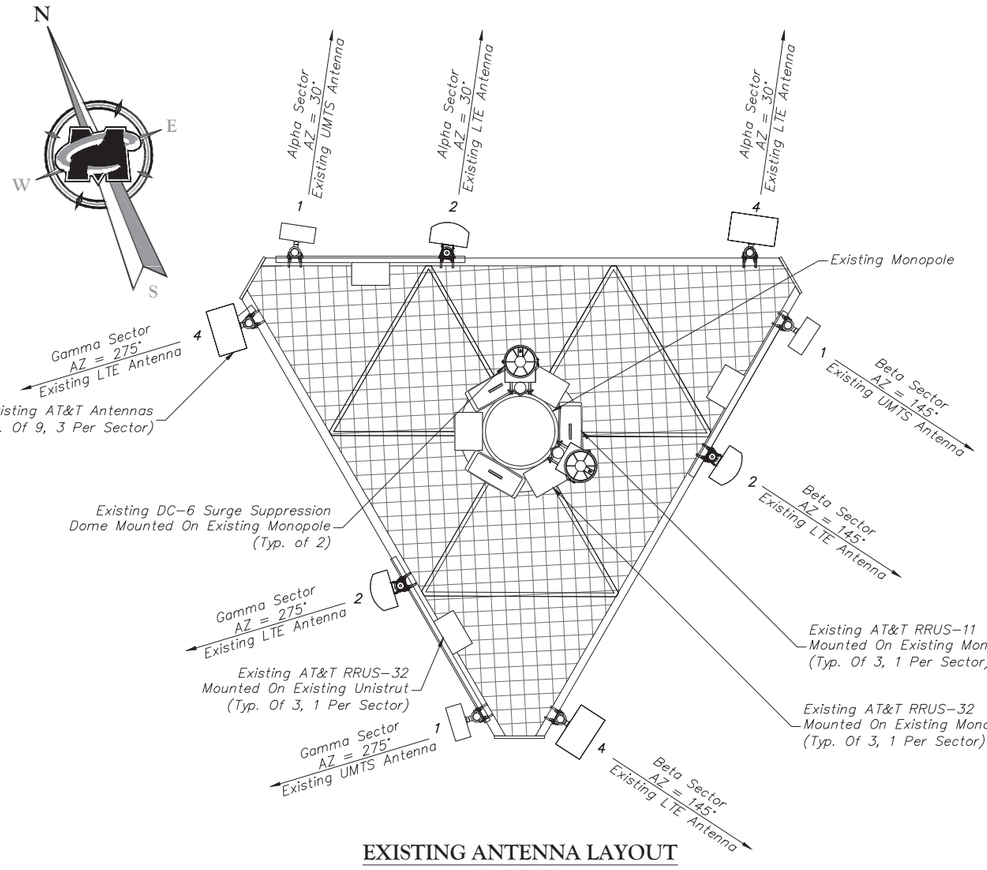
SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

SHEET NUMBER :
C-2

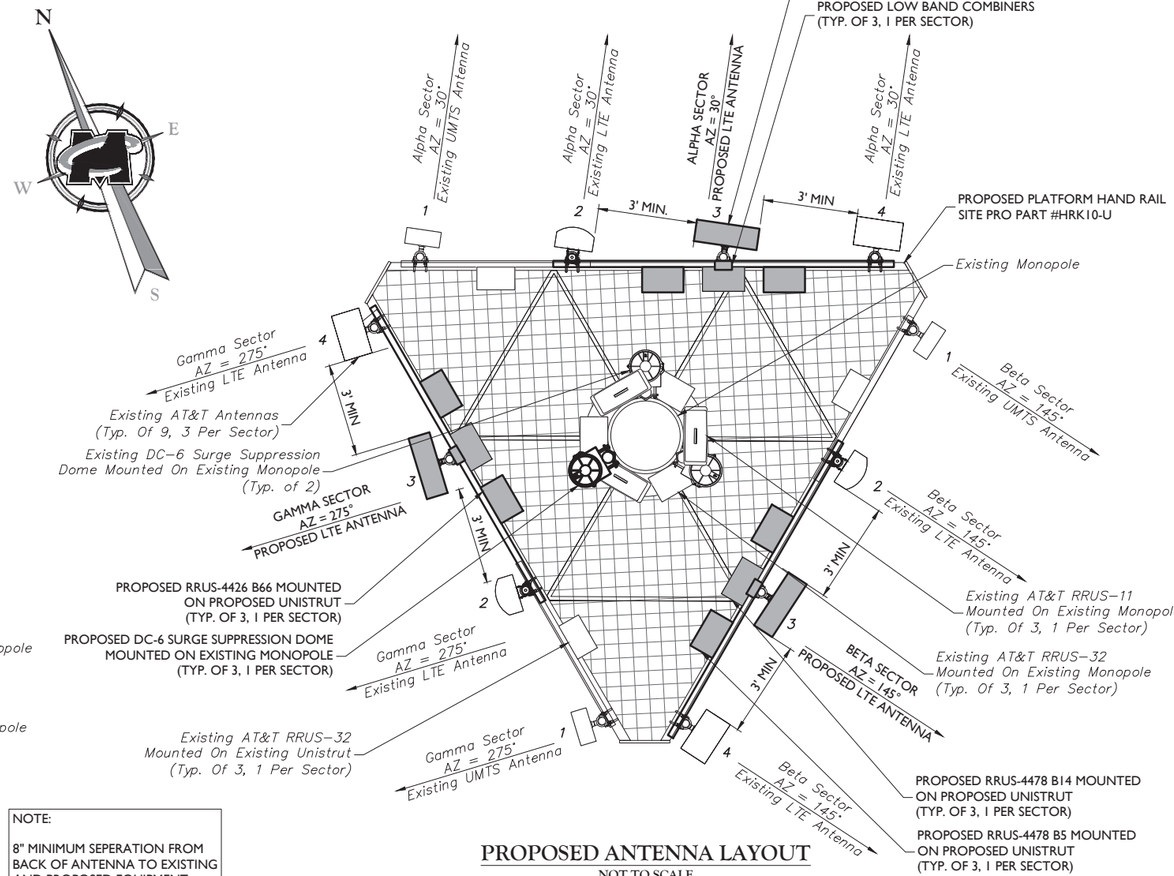


EXISTING ANTENNA LAYOUT

NOT TO SCALE

NOTE:

8" MINIMUM SEPERATION FROM BACK OF ANTENNA TO EXISTING AND PROPOSED EQUIPMENT.



PROPOSED ANTENNA LAYOUT

NOT TO SCALE

ANTENNA SCHEDULE

SECTOR		EXISTING ANTENNA	PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH (DEG.)	ANT. CL. ELEV. (ft.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE		
													QUANTITY	TYPE	STATUS
Sector 1	1	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	30°	160'	(2) 782-10250 DIPLEXER (GRADE) (2) LGP 21401 TMA	1	1 5/8" COAX	EXISTING
	2	CCI OPA-65R-LCUU-H6	CCI OPA-65R-LCUU-H6	LTE	EXISTING	72.30	14.40	7.30	69.50	30°	160'	(2) DBCT108FIV92-1 (1) RRUS-E2 B29 (GRADE) (1) RRUS-32	1	1 5/8" COAX	EXISTING
													1/2		EXISTING
	3	-	**KATHREIN**	**LTE**	**PROPOSED**	**78.70**	**20.00**	**6.90**	**108.60**	**30°**	**160'**	**(1) DBCT108FIV92-1 (1) DBCT108FIV92-1 (GRADE) (1) RRUS-4478 B14 (1) RRUS-4478 B5 (1) RRUS-4426 B66**	**1/2**	**FIBER/DC**	**PROPOSED**
		-	**80010965**												
	4	CCI HPA-65R-BUU-H6	CCI HPA-65R-BUU-H6	LTE	EXISTING	72.30	14.40	7.30	55.50	30°	160'	(1) RRUS-11 (1) RRUS-32 B2	3	FIBER	EXISTING
Sector 2	1	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	145°	160'	(2) 782-10250 DIPLEXER (2) LGP 21401 TMA	1	1 5/8" COAX	EXISTING
	2	CCI OPA-65R-LCUU-H6	CCI OPA-65R-LCUU-H6	LTE	EXISTING	72.30	14.40	7.30	69.50	145°	160'	(2) DBCT108FIV92-1 (GRADE) (1) RRUS-E2 B29 (GRADE) (1) RRUS-32	1	1 5/8" COAX	EXISTING
													1/2	FIBER/DC	EXISTING
	3	-	**KATHREIN**	**LTE**	**PROPOSED**	**78.70**	**20.00**	**6.90**	**108.60**	**145°**	**160'**	**(1) DBCT108FIV92-1 (1) DBCT108FIV92-1 (GRADE) (1) RRUS-4478 B14 (1) RRUS-4478 B5 (1) RRUS-4426 B66**	**1/2**	**FIBER/DC**	**PROPOSED**
		-	**80010965**												
	4	CCI HPA-65R-BUU-H6	CCI HPA-65R-BUU-H6	LTE	EXISTING	72.30	14.40	7.30	55.50	145°	160'	(1) RRUS-11 (1) RRUS-32 B2	3	FIBER	EXISTING
Sector 3	1	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	275°	160'	(2) 782-10250 DIPLEXER (GRADE) (2) LGP 21401 TMA	1	1 5/8" COAX	EXISTING
	2	CCI OPA-65R-LCUU-H6	CCI OPA-65R-LCUU-H6	LTE	EXISTING	72.30	14.40	7.30	69.50	275°	160'	(2) DBCT108FIV92-1 (1) RRUS-E2 B29 (GRADE) (1) RRUS-32	1	1 5/8" COAX	EXISTING
													1/2	FIBER/DC	EXISTING
	3	-	**KATHREIN**	**LTE**	**PROPOSED**	**78.70**	**20.00**	**6.90**	**108.60**	**275°**	**160'**	**(1) DBCT108FIV92-1 (1) DBCT108FIV92-1 (GRADE) (1) RRUS-4478 B14 (1) RRUS-4478 B5 (1) RRUS-4426 B66**	**1/2**	**FIBER/DC**	**PROPOSED**
		-	**80010965**												
	4	CCI HPA-65R-BUU-H6	CCI HPA-65R-BUU-H6	LTE	EXISTING	72.30	14.40	7.30	55.50	275°	160'	(1) RRUS-11 (1) RRUS-32 B2	3	FIBER	EXISTING

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SCALE :	JOB NUMBER :
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STATE OF CONNECTICUT
PETROS EFTOUKALAS
CONNECTICUT PROFESSIONAL # ENGINEER - LICENSE NUMBER: 33077
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

90 N. PLAINS INDUSTRIAL RD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

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Fax: .732.383.1984
email: solutions@maserconsulting.com

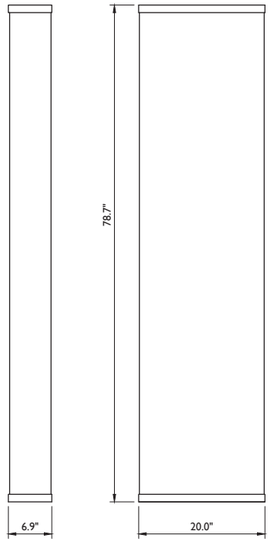
SHEET TITLE :

ANTENNA LAYOUT AND ANTENNA SCHEDULE

SHEET NUMBER :

C-3

A:\Projects\18963020A\10071351_AE20_00918_CT5173_REV 1 - CD.dwg(C-3) By: KAMDELVIS

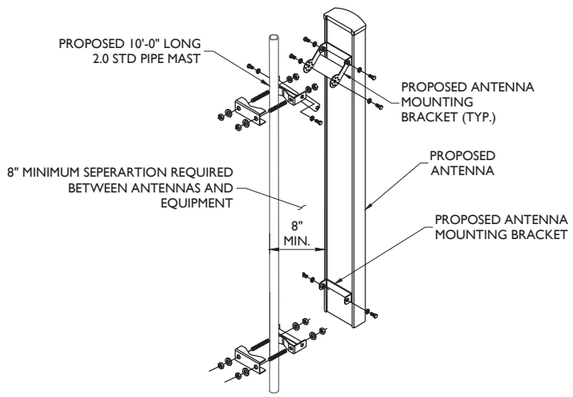


WEIGHT = 108.6 LBS

KATHREIN 800-10965

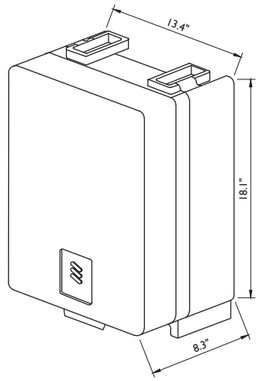
ANTENNA DETAIL

NOT TO SCALE



ANTENNA MOUNTING DETAIL

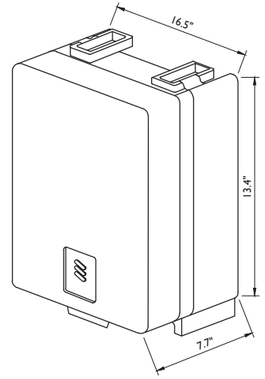
NOT TO SCALE



DIMENSIONS (H X W X D): 18.1"H X 13.4"W X 8.3"D (INCLUDES SUNSHIELD)
WEIGHT: 59.4 LBS

RRUS-4478 B14 DETAIL

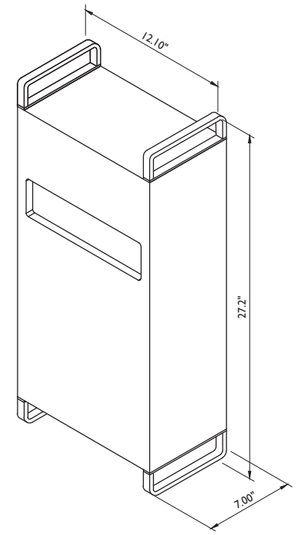
NOT TO SCALE



DIMENSIONS (H X W X D): 16.5"H X 13.4"W X 7.7"D (INCLUDES SUNSHIELD)
WEIGHT: 59.9 LBS

RRU-4478-B5 DETAIL

NOT TO SCALE

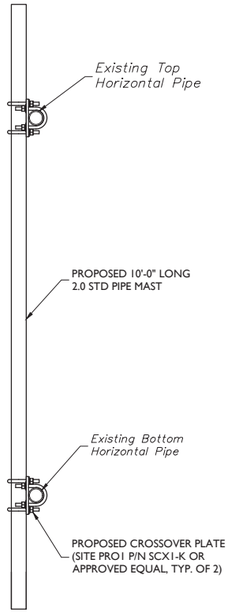


RRUS-4426 B66 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0"
(INCLUDES HANDLES, FEET AND SUNSHIELD)

WEIGHT: 53 LBS

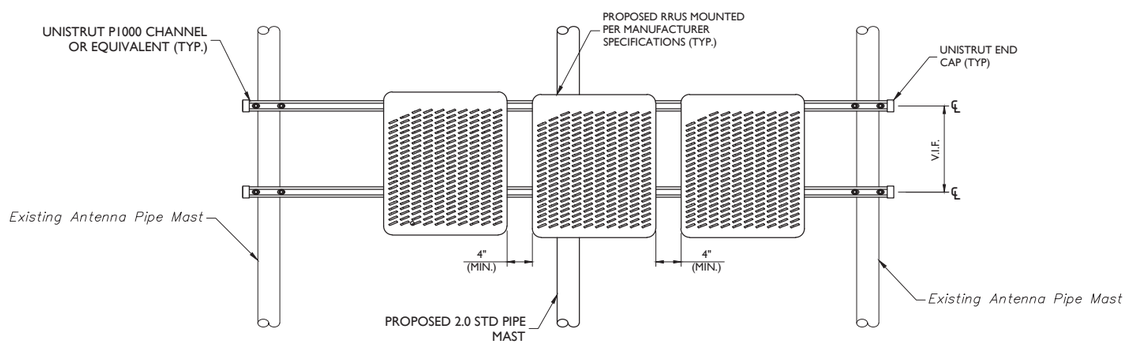
4426 B66 DETAIL

NOT TO SCALE



PIPE MAST MOUNTING DETAIL

NOT TO SCALE



NOTES:

1. INSTALL VERTICAL UNISTRUT CHANNELS AS REQUIRED TO ALIGN FRAME WITH EQUIPMENT MOUNTING HOLES. FASTEN UNISTRUT CHANNELS TOGETHER WITH 3/8" UNISTRUT BOLTING HARDWARE AND SPRING NUTS.
2. MOUNT RRU'S TO UNISTRUT PER MANUFACTURER'S SPECIFICATIONS.
3. NO PAINTING OF THE RRUS IS ALLOWED.

RRU MOUNTING TO UNISTRUT FRAME DETAIL

NOT TO SCALE

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AS SHOWN	18963020A

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0	11/29/18	FOR CONSTRUCTION	AJC	RA
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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER, LICENSE NUMBER: 32078

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

90 N. PLAINS INDUSTRIAL RD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
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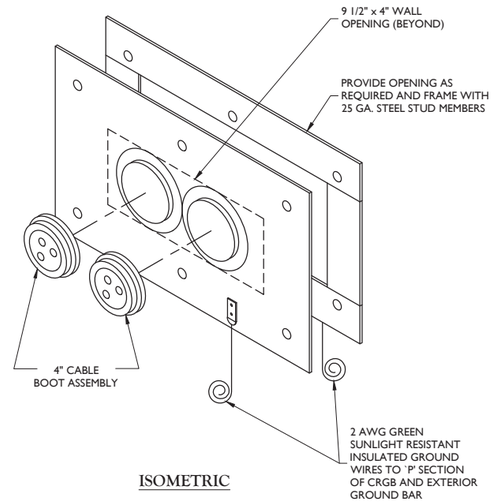
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :

DETAILS

SHEET NUMBER :

A-1



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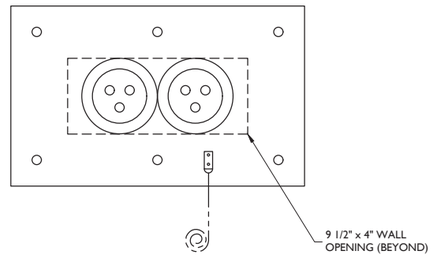

CABLE ENTRY PANEL CHART

SITE PRO E1448 FOR (2 PORTS)
SITE PRO BAZERO, 4" BOOT
SITE PRO BA78, 4" BOOT FOR (1) 7/8" COAX
SITE PRO B158, 4" BOOT FOR (1) 1-5/8" COAX

NOTES:

1. ENTRY PANEL AND BOOTS BY SITE PRO (SEE CHART FOR PART #). ORDER BOOTS SEPARATELY FOR SPECIFIC CABLE SIZE(S) & QUANTITY. PROVIDE PLUGS BY SITE PRO FOR EACH UNUSED HOLE IN BOOT.
2. AN APPROVED EQUAL MAY BE SUBSTITUTED FOR SITE PRO PARTS REFERENCED IN THIS DETAIL.
3. STEEL FRAMES ARE REQUIRED ON BOTH SIDES OF THE WALL. THE FRAMES SHALL BE SEALED WITH THE MANUFACTURER'S RECOMMENDED SEALANT TO HELP RESIST WEATHER EXPOSURE ON THE INTERIOR OF THE SHELTER.
4. OPENING IN WALL CAN BE EITHER ONE OVERALL RECTANGULAR OPENING OR SEVERAL ROUND CORE DRILLS PLACED TO MATCH BOOT LOCATIONS IN THE STEEL FRAMES.

CABLE ENTRY PANEL DETAIL 2 PORT

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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER , LICENSE NUMBER: 33073

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

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NEW HAVEN COUNTY

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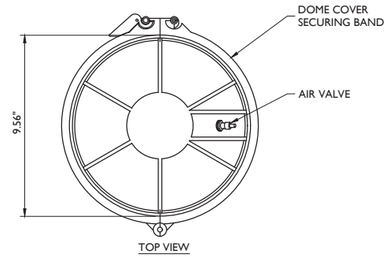
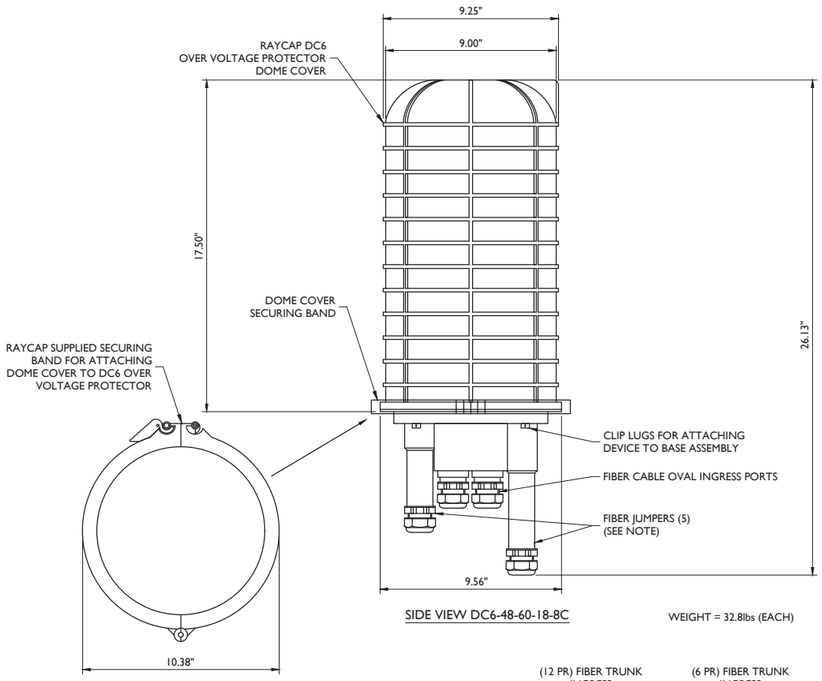
SHEET TITLE :
DETAILS

SHEET NUMBER :
A-2

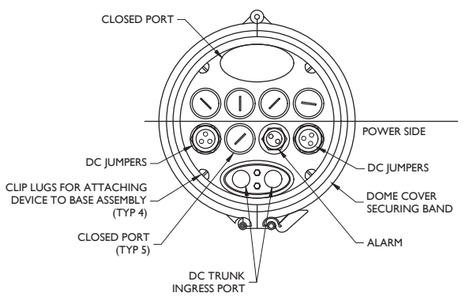


TOP VIEW

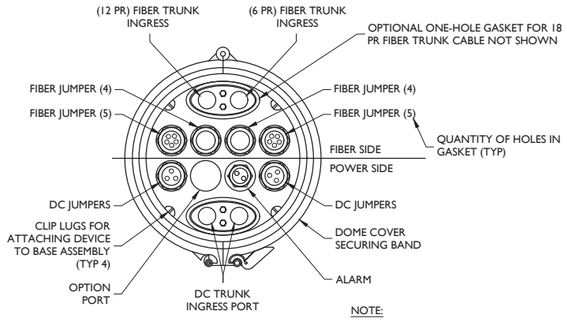


SIDE VIEW DC6-48-60-18-8C

WEIGHT = 32.8lbs (EACH)



BOTTOM VIEW
DC6-48-60-0-8C



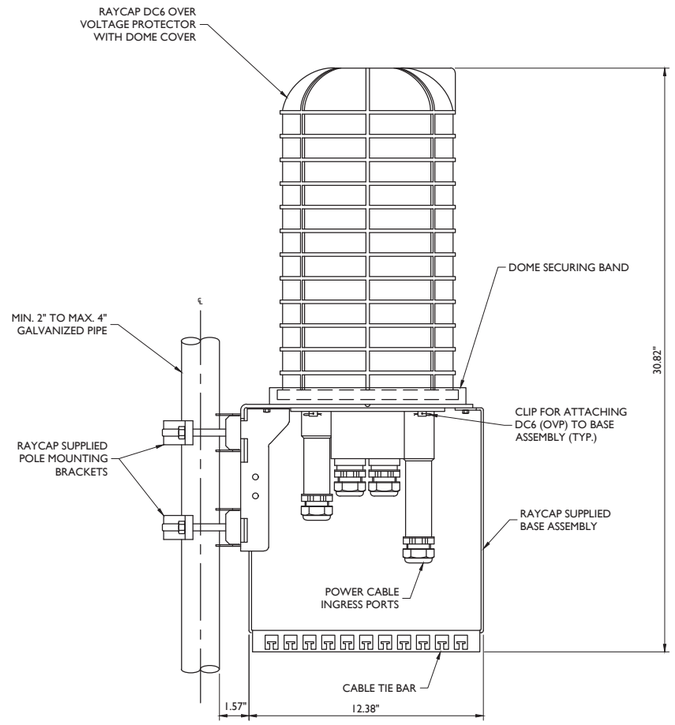
BOTTOM VIEW
DC6-48-60-18-8C

NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE



ELEVATION

NOTES:

RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

RAYCAP DC6-48-60-18-8F & DC6-48-60-0-8F
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY

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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE NUMBER: 32677
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

YALESVILLE
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SITE# CT5173

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NEW HAVEN COUNTY

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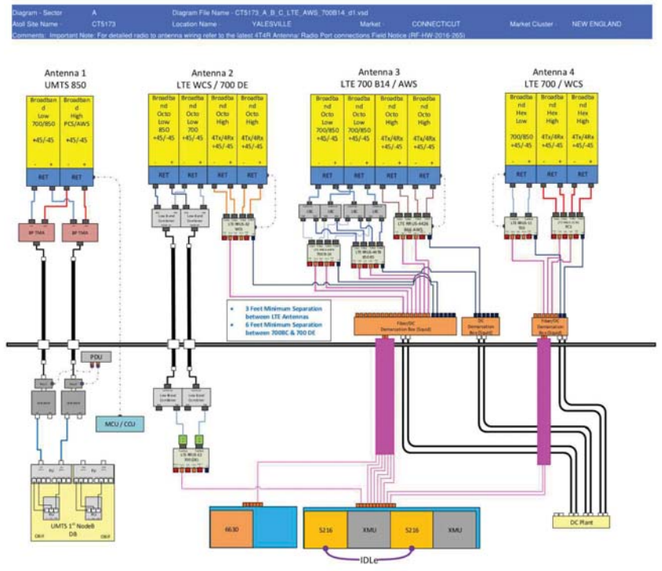
SHEET TITLE :

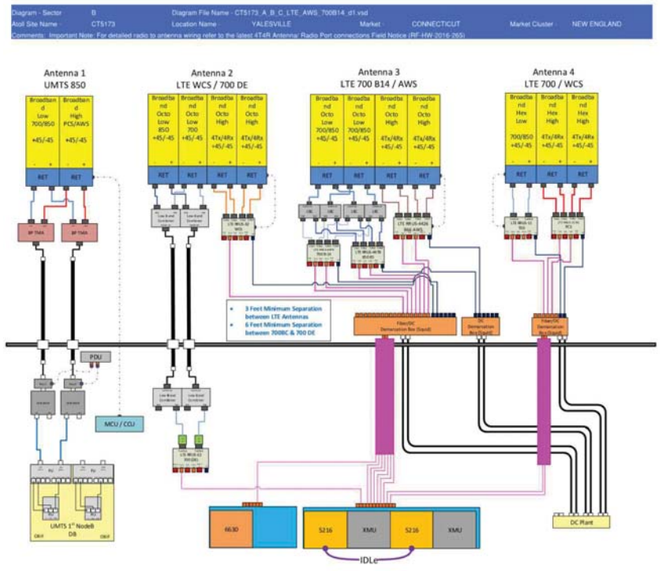
DETAILS

SHEET NUMBER :

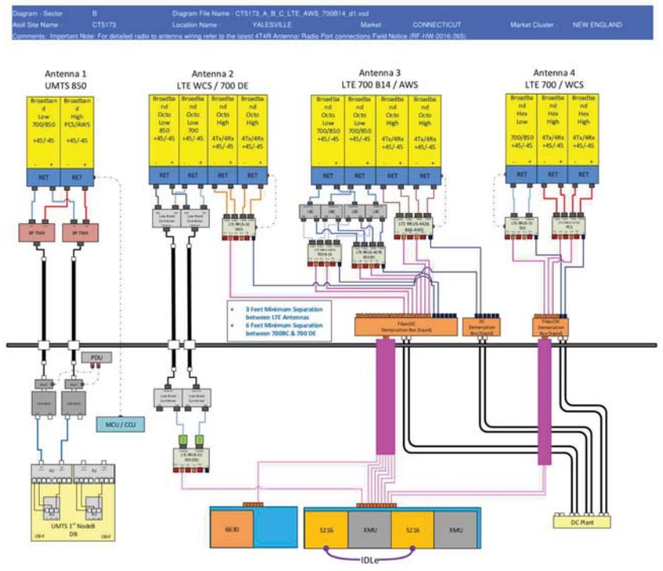
A-3



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "YALESVILLE_CT5173_2018-LTE-Next-Carrier_LTE_mh705r_2051A0G...", LAST REVISED 09/10/2018.

RF PLUMBING DIAGRAMS

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STATE OF CONNECTICUT — PETROS E. TSOUKALAS — LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 33577

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

90 N. PLAINS INDUSTRIAL RD
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NEW HAVEN COUNTY

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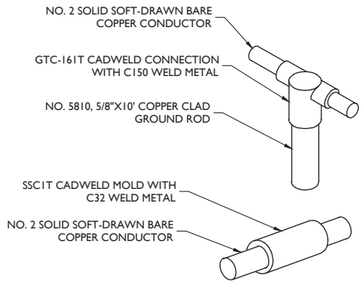
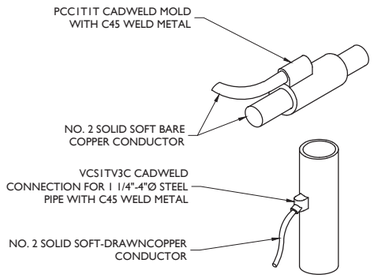
SHEET TITLE :
RF PLUMBING DIAGRAM

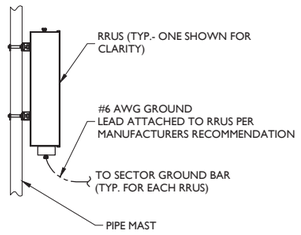
SHEET NUMBER :
A-4





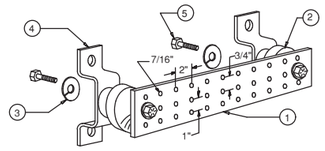
CADWELD DETAILS

NOT TO SCALE



RRU GROUNDING

NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056

5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

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

SECTION "P" - SURGE PRODUCERS

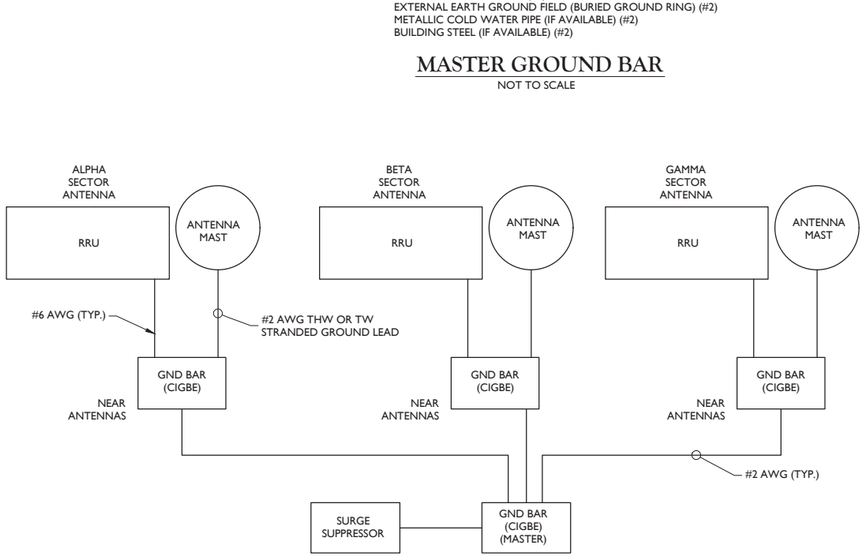
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLT RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

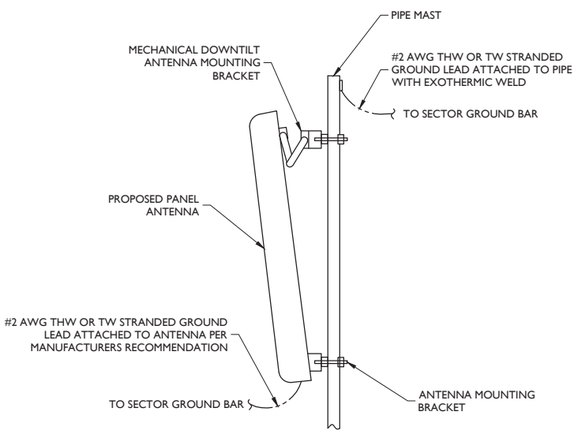
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

MASTER GROUND BAR

NOT TO SCALE

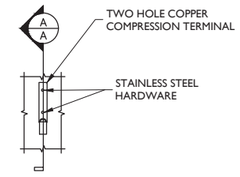


SCHEMATIC DIAGRAM GROUNDING SYSTEM

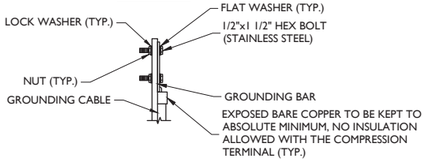


ANTENNA GROUNDING

NOT TO SCALE



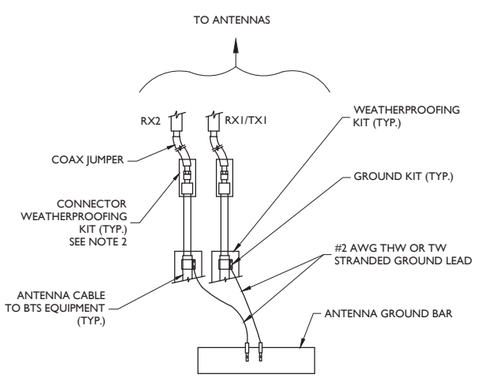
ELEVATION



SECTION A-A

TYPICAL GROUND BAR CONNECTION DETAIL

NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR

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STATE OF CONNECTICUT
PETROS E. STOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER, LICENSE NUMBER: 32071
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

YALESVILLE
FA# 10071351
SITE# CT5173

90 N. PLAINS INDUSTRIAL RD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :

GROUNDING DETAILS

SHEET NUMBER :

G-1

EXHIBIT 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**178.5 ft Monopole**
ATC Site Name	:	**Bilkays Express, CT**
ATC Site Number	:	**302467**
Engineering Number	:	**OAA748085_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Yalesville**
Carrier Site Number	:	**CT5173**
Site Location	:	**90 North Plains Industrial Rd.** **Wallingford, CT 06492-2334** **41.480800,-72.817700**
County	:	**New Haven**
Date	:	**May 2, 2019**
Max Usage	:	**59%**
Result	:	**Pass**

Prepared By:
Peter Giordano
Structural Engineer II

Peter J. Giordano

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
May 2 2019 4:55 PM

cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 178.5 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	FWT Job #18357, dated March 19, 1999
Foundation Drawing	FWT Job #18357, dated March 19, 1999
Geotechnical Report	Tectonic Work Order #1170.C947C, dated March 11, 1999

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 124 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
181.0	12	Decibel DB844H90E-XY	Low Profile Platform	(12) 1 5/8" Coax	SPRINT NEXTEL
171.0	1	DragonWave A-ANT-11G-2-C	Clearwire Side Arm	(2) 1/2" Coax (6) 5/16" (0.31"-7.9mm) Coax	CLEARWIRE CORPORATION
	1	DragonWave A-ANT-18G-2-C			
	3	Argus LLPX310R			
	3	NextNet BTS-2500			
	2	DragonWave Horizon Compact			
165.0	1	Generic 18" x 12" Junction Box		(1) 2" conduit	
160.0	6	Powerwave Allgon 7020	Low Profile Platform	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (3) 2" conduit (1) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	3	Ericsson RRUS 11 (Band 7)			
	3	Ericsson RRUS 32 B2			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	3	Quintel QS66512-2			
	3	CCI OPA-65R-LCUU-H6			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS-32 (77 lbs)			
148.0	3	Ericsson Radio 4449 B12,B71	T-Arms with Platforms	(2) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 1/4" Hybriflex Cable (12) 1 5/8" Coax	T-MOBILE
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
	3	Ericsson AIR32 B66Aa/B2a			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson KRY 112 144/1			
138.0	6	Commscope JAHH-65B-R3B	Low Profile Platform	(18) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Commscope SBNHH-1D65B			
	6	Amphenol Antel LPA-80063-6CF-EDIN-X			
	2	RFS DB-T1-6Z-8AB-0Z			
	3	Alcatel-Lucent B66A RRH4x45-4R w/o Solar Shield			
	3	Alcatel-Lucent RRH2x60 700			
	3	Nokia B5 RRH4x40-850			
	3	Alcatel-Lucent RRH 2X60-1900			
128.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax (1) 7/8" Coax	METRO PCS INC
	1	Nortel NTGB01MA			
122.0	3	Alcatel-Lucent 800 MHz RRH	Low Profile Platform	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
118.0	3	RFS APXVSPP18-C-A20			
	3	RFS APXV9TM14-ALU-I20*			
20.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
160.0	3	Ericsson RRUS-11 800 MHz	-	-	AT&T MOBILITY
	6	Kaelus DBC0061F1V51-2			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
160.0	9	Kaelus DBCT108F1V92-1	Low Profile Platform	-	AT&T MOBILITY
	3	Ericsson RRUS 4426 B66			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4478 B5 (56.1 lbs)			
	1	Raycap DC6-48-60-18-8C-EV			
	3	Kathrein Scala 80010965			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	58%	Pass
Shaft	53%	Pass
Base Plate	20%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,756.2	59%
Axial (Kips)	78.7	25%
Shear (Kips)	38.2	52%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
171.0	DragonWave A-ANT-11G-2-C	CLEARWIRE CORPORATION	1.322	0.800
	DragonWave A-ANT-18G-2-C			
160.0	Kaelus DBCT108F1V92-1	AT&T MOBILITY	1.170	0.789
	Ericsson RRUS 4426 B66			
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 4478 B5 (56.1 lbs)			
	Raycap DC6-48-60-18-8C-EV			
	Kathrein Scala 80010965			

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

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

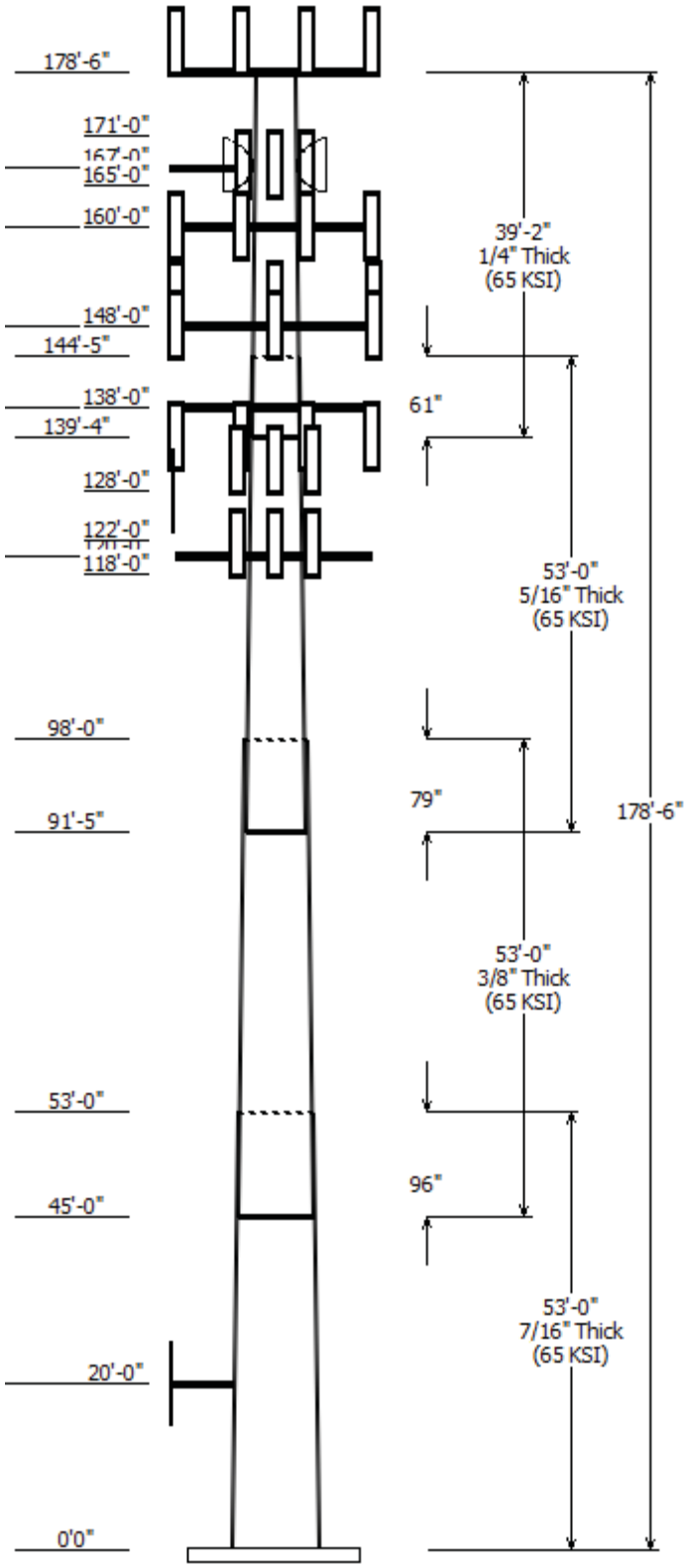
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

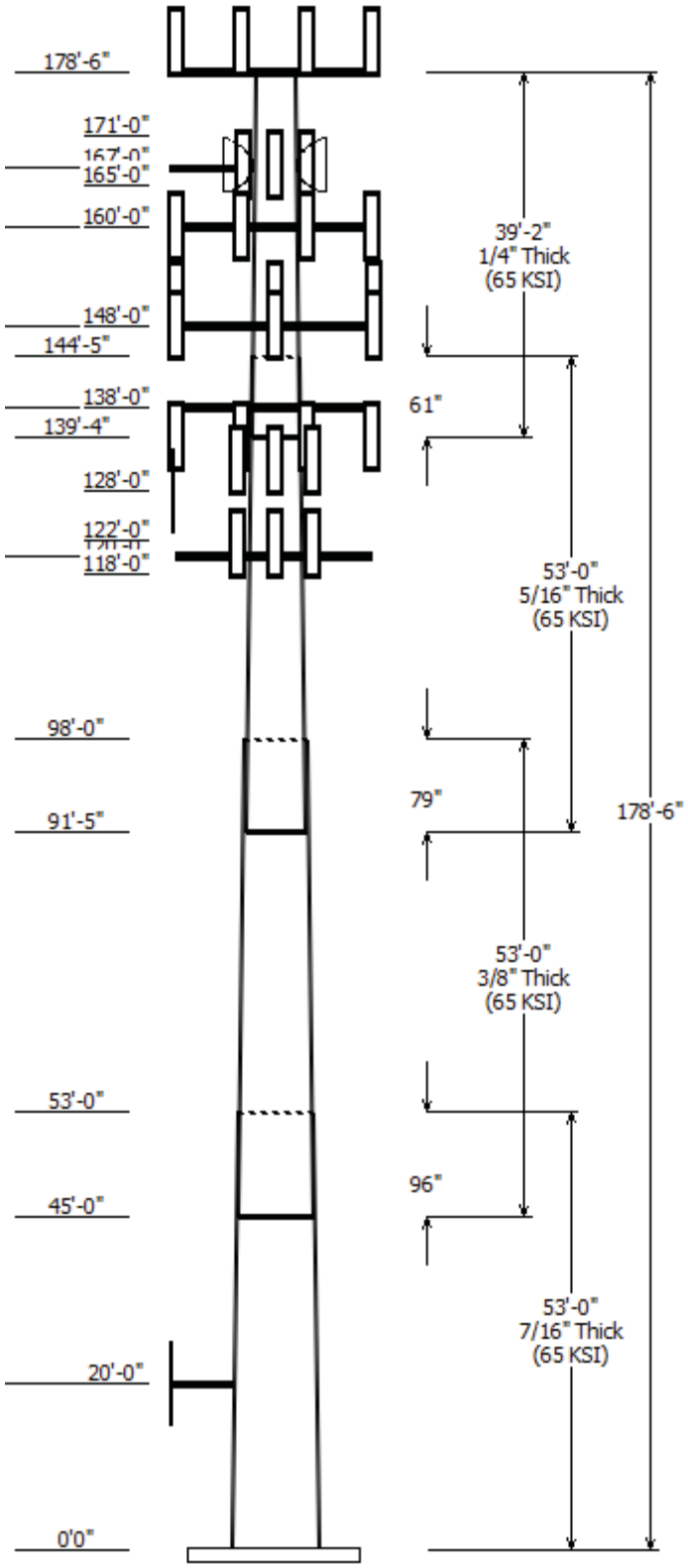
Pole :	302467	Code:	ANSI/TIA-222-G
Location :	Bilkays Express, CT		
Description :	178.5' FWT Monopole		
Client :	AT&T MOBILITY	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	178.50 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.251401 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.000	58.67	72.00	0.438		0.000	18 Sides	65
2	53.000	48.11	61.43	0.375	Slip Joint	96.000	18 Sides	65
3	53.000	37.06	50.39	0.313	Slip Joint	79.000	18 Sides	65
4	39.167	29.00	38.84	0.250	Slip Joint	61.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
178.500	181.000	12	Decibel DB844H90E-XY
178.500	178.500	1	Flat Low Profile Platform
171.000	168.000	1	DragonWave A-ANT-18G-2-C
171.000	168.000	1	DragonWave A-ANT-11G-2-C
171.000	167.000	3	Argus LLPX310R
171.000	168.000	3	NextNet BTS-2500
171.000	168.000	2	DragonWave Horizon Compact
167.000	167.000	1	Side Arms
165.000	165.000	1	Generic 18" x 12" Junction Box
160.000	160.000	1	Flat Low Profile Platform
160.000	160.000	3	Kathrein Scala 80010965
160.000	160.000	3	CCI OPA-65R-LCUU-H6
160.000	160.000	3	Quintel QS66512-2
160.000	160.000	3	Powerwave Allgon 7770.00
160.000	160.000	1	Raycap DC6-48-60-18-8C-EV
160.000	160.000	3	Ericsson RRUS-32 (77 lbs)
160.000	160.000	3	Ericsson RRUS 11 (Band 7)
160.000	160.000	3	Ericsson RRUS 32 B2
160.000	160.000	3	Ericsson RRUS 4478 B5 (56.1 lb
160.000	160.000	3	Ericsson RRUS 4478 B14
160.000	160.000	3	Ericsson RRUS 4426 B66
160.000	160.000	2	Raycap DC6-48-60-18-8F (23.5"
160.000	160.000	6	Powerwave Allgon LGP21401
160.000	160.000	9	Kaelus DBCT108F1V92-1
160.000	160.000	6	Powerwave Allgon 7020
148.000	148.000	1	T-Arm with Platform
148.000	148.000	3	RFS APXVAARR24_43-U-NA20
148.000	148.000	3	Ericsson AIR32 B66Aa/B2a
148.000	152.000	3	Ericsson AIR 21, 1.3 M, B2A B4
148.000	148.000	3	Ericsson Radio 4449 B12,B71
148.000	152.000	3	Ericsson KRY 112 144/1
138.000	138.000	1	Round Low Profile Platform
138.000	136.000	6	Commscope JAHH-65B-R3B
138.000	136.000	3	Commscope SBNHH-1D65B
138.000	136.000	6	Amphenol Antel LPA-80063-
138.000	136.000	2	RFS DB-T1-6Z-8AB-0Z
138.000	136.000	3	Alcatel-Lucent B66A RRH4x45-
138.000	136.000	3	Alcatel-Lucent RRH2x60 700
138.000	136.000	3	Alcatel-Lucent RRH 2X60-1900
138.000	136.000	3	Nokia B5 RRH4x40-850
128.000	129.000	3	RFS APXV18-206517S-C
128.000	128.000	1	Nortel NTGB01MA
122.000	122.000	3	Alcatel-Lucent TD-RRH8x20-25
122.000	122.000	3	Alcatel-Lucent 1900 MHz 4X45



122.000	122.000	3	Alcatel-Lucent 800 MHz RRH
120.000	120.000	1	Round Low Profile Platform
118.000	122.000	3	RFS APXVSPP18-C-A20
118.000	122.000	3	RFS APXV9TM14-ALU-I20*
20.000	20.000	1	Standoff
20.000	20.000	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	20.000	1/2" Coax	Yes
0.000	116.0	1 1/4" Hybriflex	Yes
0.000	118.0	1 1/4" Hybriflex	Yes
0.000	128.0	1 5/8" Coax	Yes
0.000	128.0	7/8" Coax	No
0.000	138.0	1 5/8" Coax	No
0.000	138.0	1 5/8" Hybriflex	Yes
0.000	148.0	1 1/4" (1.25"-	Yes
0.000	148.0	1 1/4" Hybriflex	Yes
0.000	148.0	1 5/8" Coax	Yes
0.000	160.0	0.39" (10mm)	No
0.000	160.0	0.78" (19.7mm) 8	No
0.000	160.0	1 5/8" Coax	No
0.000	160.0	2" conduit	No
0.000	160.0	3/8" (0.38"-	No
0.000	165.0	2" conduit	Yes
0.000	171.0	1/2" Coax	Yes
0.000	171.0	5/16" (0.31"-	No
0.000	182.0	1 5/8" Coax	No

Load Cases

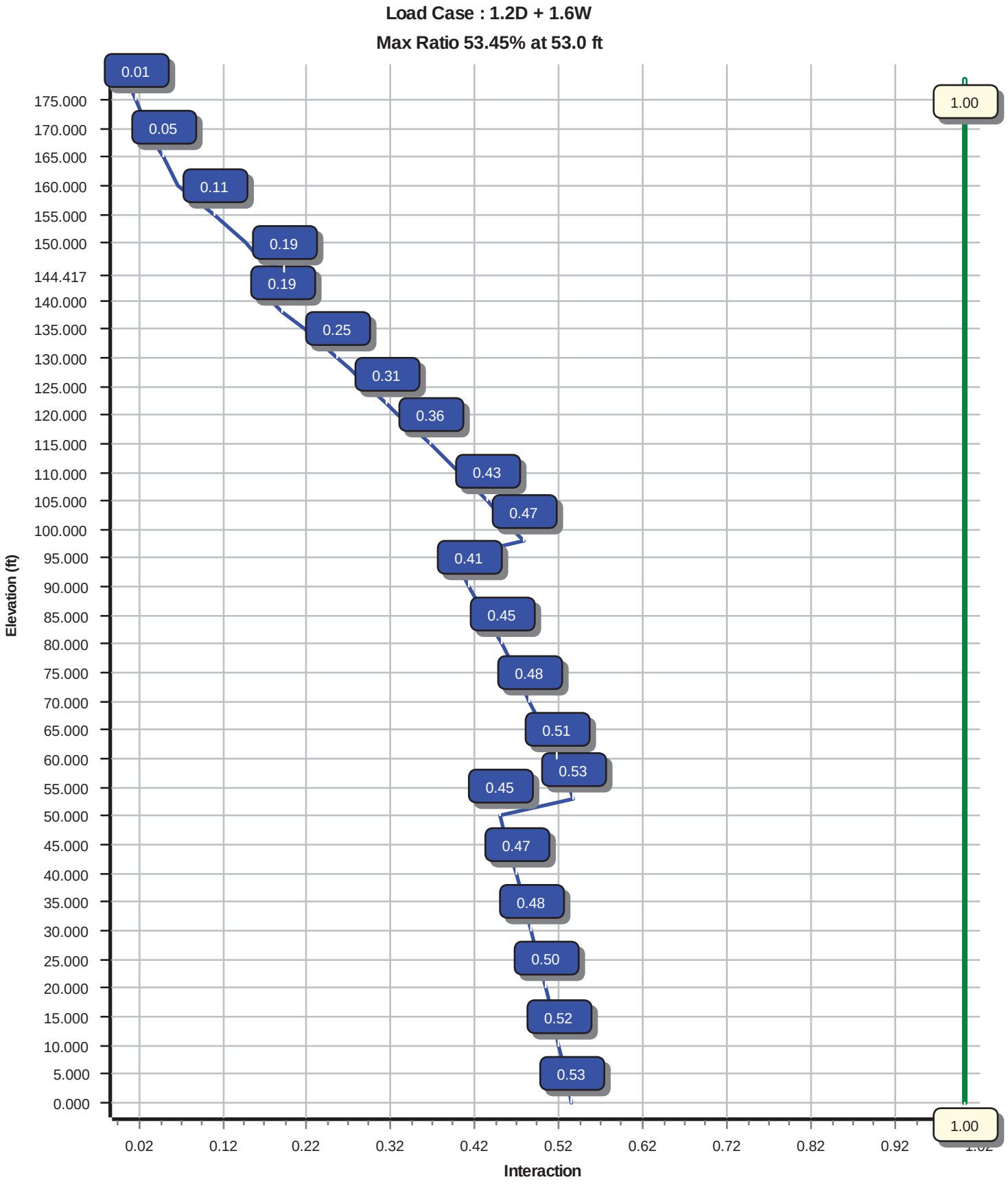
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4756.24	38.16	78.67
0.9D + 1.6W	4713.18	38.14	59.00
1.2D + 1.0Di + 1.0Wi	2942.69	32.11	118.92
(1.2 + 0.2Sds) * DL + E ELFM	273.87	2.00	78.71
(1.2 + 0.2Sds) * DL + E EMAM	272.29	2.20	78.71
(0.9 - 0.2Sds) * DL + E ELFM	270.85	2.00	54.69
(0.9 - 0.2Sds) * DL + E EMAM	269.11	2.20	54.69
1.0D + 1.0W	1130.96	9.12	65.59

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	171.00	16.323	0.820
1.0D + 1.0W	171.00	16.323	0.820


Load Case : 1.2D + 1.6W
Max Ratio 53.45% at 53.0 ft
0.01
0.05
0.11
0.19
0.19
0.25
0.31
0.36
0.43
0.47
0.41
0.45
0.48
0.51
0.53
0.45
0.47
0.48
0.50
0.52
0.53
1.00
1.00
175.000
170.000
165.000
160.000
155.000
150.000
144.417
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	**302467**	**Code: ANSI/TIA-222-G**	
Site Name:	**Bilkays Express, CT**	**Engineering Number:OAA748085_C3_01**	**5/2/2019 3:41:37 PM**
Customer:	**AT&T MOBILITY**		

Analysis Parameters

Location :	**New Haven County, CT**	**Height (ft) :**	**178.5**
Code :	**ANSI/TIA-222-G**	**Base Diameter (in) :**	**72.00**
Shape :	**18 Sides**	**Top Diameter (in) :**	**29.00**
Pole Type :	**Taper**	**Taper (in/ft) :**	**0.251**
Pole Manfacturer :	**FWT**	**Rotation (deg) :**	**0.00**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**97 mph**
Exposure Category:	**B**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**2.21**				
T_L (sec):	**6**	**p:**	**1**	**C_s:**	**0.030**
S_s:	**0.183**	**S_1:**	**0.063**	**C_s Max:**	**0.030**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.195**	**S_{d1}:**	**0.101**		

Load Cases

1.2D + 1.6W	**97 mph with No Ice**
0.9D + 1.6W	**97 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 302467 **Code:** ANSI/TIA-222-G

Site Name: Bilkays Express, CT **Engineering Number:**OAA748085_C3_01 **5/2/2019 3:41:37 PM**

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.000	0.4375	65		0.00	16,253	72.00	0.00	99.37	64295.3	27.26	164.57	58.67	53.00	80.87	34653.6	21.89	134.12	0.251401
2-18	53.000	0.3750	65	Slip	96.00	11,677	61.43	45.00	72.68	34236.4	27.12	163.83	48.11	98.00	56.82	16359.2	20.86	128.30	0.251401
3-18	53.000	0.3125	65	Slip	79.00	7,766	50.39	91.42	49.67	15739.6	26.67	161.26	37.06	144.42	36.46	6222.7	19.15	118.62	0.251401
4-18	39.167	0.2500	65	Slip	61.00	3,561	38.84	139.33	30.63	5764.1	25.64	155.39	29.00	178.50	22.81	2382.3	18.69	116.00	0.251401
					Shaft Weight	39,257													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
178.50	Decibel DB844H90E-XY	12	0.80	2.500	14.00	3.610	0.73	126.96	3.938	0.73
178.50	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,159.96	45.548	1.00
171.00	DragonWave Horizon Compact	2	0.80	-3.000	10.60	0.720	0.50	33.42	1.297	0.50
171.00	NextNet BTS-2500	3	0.80	-3.000	35.00	1.820	0.50	82.07	2.752	0.50
171.00	Argus LLPX310R	3	0.80	-4.000	28.60	4.290	0.63	120.07	5.967	0.63
171.00	DragonWave A-ANT-11G-2-C	1	0.80	-3.000	27.00	4.690	1.00	125.91	5.983	1.00
171.00	DragonWave A-ANT-18G-2-C	1	0.80	-3.000	27.10	4.690	1.00	126.15	5.983	1.00
167.00	Side Arms	1	1.00	0.000	560.00	8.500	1.00	1,033.89	15.693	1.00
165.00	Generic 18" x 12" Junction Box	1	0.80	0.000	15.00	1.800	1.00	71.44	2.709	1.00
160.00	Powerwave Allgon 7020	6	0.80	0.000	2.20	0.340	0.50	12.48	0.754	0.50
160.00	Kaelus DBCT108F1V92-1	9	0.80	0.000	13.90	0.630	0.50	39.24	1.177	0.50
160.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.100	0.50	39.22	1.816	0.50
160.00	Raycap DC6-48-60-18-8F (23.5"	2	0.80	0.000	20.00	1.260	1.00	73.02	1.923	1.00
160.00	Ericsson RRUS 4426 B66	3	0.80	0.000	48.40	1.650	0.50	93.35	2.505	0.50
160.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.020	0.67	121.20	2.969	0.67
160.00	Ericsson RRUS 4478 B5 (56.1 lbs)	3	0.80	0.000	56.10	2.040	0.67	116.47	2.995	0.67
160.00	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.740	0.67	127.06	3.916	0.67
160.00	Ericsson RRUS 11 (Band 7)	3	0.80	0.000	50.70	2.790	0.67	123.61	3.894	0.67
160.00	Ericsson RRUS-32 (77 lbs)	3	0.80	0.000	77.00	3.310	0.71	174.93	4.601	0.71
160.00	Raycap DC6-48-60-18-8C-EV	1	0.80	0.000	16.00	4.790	1.00	146.03	6.272	1.00
160.00	Powerwave Allgon 7770.00	3	0.80	0.000	35.00	5.510	0.65	170.99	6.571	0.65
160.00	Quintel QS66512-2	3	0.80	0.000	111.00	8.130	0.74	311.66	10.936	0.74
160.00	CCI OPA-65R-LCUU-H6	3	0.80	0.000	73.00	9.660	0.66	277.94	12.452	0.66
160.00	Kathrein Scala 80010965	3	0.80	0.000	97.60	13.810	0.62	366.06	16.881	0.62
160.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,152.40	45.325	1.00
148.00	Ericsson KRY 112 144/1	3	0.80	4.000	11.00	0.350	0.50	21.76	0.755	0.50
148.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	129.97	2.484	0.50
148.00	Ericsson AIR 21, 1.3 M, B2A B4P	3	0.80	4.000	83.00	6.050	0.71	228.90	8.212	0.71
148.00	Ericsson AIR32 B66Aa/B2a	3	0.80	0.000	132.20	6.510	0.71	291.76	8.700	0.71
148.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	520.36	23.947	0.63
148.00	T-Arm with Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,147.69	40.893	1.00
138.00	Nokia B5 RRH4x40-850	3	0.80	-2.000	48.50	1.320	0.50	89.45	2.074	0.50
138.00	Alcatel-Lucent RRH 2X60-1900	3	0.80	-2.000	39.60	1.880	0.50	94.10	2.812	0.50
138.00	Alcatel-Lucent RRH2x60 700	3	0.80	-2.000	56.70	2.150	0.67	124.26	3.145	0.67
138.00	Alcatel-Lucent B66A RRH4x45-	3	0.80	-2.000	56.80	2.390	0.67	119.76	3.471	0.67
138.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	-2.000	44.00	4.800	0.72	168.94	6.211	0.72
138.00	Commscope SBNHH-1D65B	3	0.80	-2.000	50.70	8.170	0.69	224.92	10.978	0.69
138.00	Commscope JAHH-65B-R3B	6	0.80	-2.000	60.60	9.110	0.69	261.42	11.863	0.69
138.00	Amphenol Antel LPA-80063-6CF-	6	0.80	-2.000	27.00	10.500	0.66	228.28	14.319	0.66
138.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,143.13	40.758	1.00
128.00	Nortel NTGB01MA	1	1.00	0.000	1.00	0.090	1.00	6.33	0.264	1.00
128.00	RFS APXV18-206517S-C	3	1.00	1.000	26.40	5.160	0.68	117.68	7.490	0.68
122.00	Alcatel-Lucent 800 MHz RRH	3	0.80	0.000	53.00	2.130	0.67	125.39	3.088	0.67
122.00	Alcatel-Lucent 1900 MHz 4X45	3	0.80	0.000	60.00	2.320	0.67	139.04	3.379	0.67
122.00	Alcatel-Lucent TD-RRH8x20-25	3	0.80	0.000	70.00	4.050	0.61	162.69	5.353	0.61
120.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,134.36	40.498	1.00
118.00	RFS APXV9TM14-ALU-I20*	3	0.80	4.000	55.10	6.340	0.66	189.63	8.467	0.66

118.00	RFS APXVSPP18-C-A20	3	0.80	4.000	57.00	8.020	0.69	225.54	10.744	0.69
20.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	4.52	0.236	1.00
20.00	Standoff	1	1.00	0.000	75.00	2.500	1.00	146.50	3.906	1.00
Totals	Num Loadings:50	148			14,467.50			32,745.90		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 170

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	182.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	171.00	2	1/2" Coax	0.63	0.15	N	2	0.00	0.00	130	0.00	Y	CLEARWIRE
0.00	171.00	6	5/16" (0.31"-7.9mm)	0.31	0.05	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	165.00	1	2" conduit	2.38	3.65	N	1	0.00	0.00	135	0.00	Y	CLEARWIRE
0.00	160.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	160.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	160.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	160.00	3	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	160.00	1	3/8" (0.38"- 9.5mm)	0.38	0.23	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	148.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	2	0.00	0.00	250	0.00	Y	T-MOBILE
0.00	148.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	1	0.00	0.00	265	0.00	Y	T-MOBILE
0.00	148.00	12	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	260	0.00	Y	T-MOBILE
0.00	138.00	18	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	138.00	2	1 5/8" Hybriflex	1.98	1.30	N	2	0.00	0.00	0	0.00	Y	VERIZON WIRELESS
0.00	128.00	6	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	200	0.00	Y	METRO PCS INC
0.00	128.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	METRO PCS INC
0.00	118.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	3	0.00	0.00	170	0.00	Y	SPRINT NEXTEL
0.00	116.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	1	0.00	0.00	175	0.00	Y	SPRINT NEXTEL
0.00	20.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	180	0.00	Y	SPRINT NEXTEL

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	72.000	99.370	64,295.3	27.26	164.57	69.3	1758.	0.0	0.0
5.00		0.4375	70.743	97.624	60,966.4	26.75	161.70	69.9	1697.	0.0	1,675.8
10.00		0.4375	69.486	95.879	57,754.4	26.24	158.83	70.5	1637.	0.0	1,646.1
15.00		0.4375	68.229	94.134	54,657.3	25.74	155.95	71.1	1577.	0.0	1,616.4
20.00		0.4375	66.972	92.388	51,672.9	25.23	153.08	71.7	1519.	0.0	1,586.7
25.00		0.4375	65.715	90.643	48,799.2	24.72	150.21	72.3	1462.	0.0	1,557.0
30.00		0.4375	64.458	88.897	46,034.1	24.22	147.33	72.9	1406.	0.0	1,527.3
35.00		0.4375	63.201	87.152	43,375.4	23.71	144.46	73.5	1351.	0.0	1,497.6
40.00		0.4375	61.944	85.406	40,821.1	23.20	141.59	74.1	1298.	0.0	1,467.9
45.00	Bot - Section 2	0.4375	60.687	83.661	38,369.2	22.70	138.71	74.7	1245.	0.0	1,438.2
50.00		0.4375	59.430	81.915	36,017.4	22.19	135.84	75.3	1193.	0.0	2,632.3
53.00	Top - Section 1	0.3750	59.426	70.283	30,963.7	26.18	158.47	70.6	1026.	0.0	1,552.9
55.00		0.3750	58.923	69.684	30,179.4	25.94	157.13	70.9	1008.	0.0	476.3
60.00		0.3750	57.666	68.188	28,277.0	25.35	153.78	71.6	965.8	0.0	1,172.9
65.00		0.3750	56.409	66.692	26,456.3	24.76	150.42	72.3	923.8	0.0	1,147.4
70.00		0.3750	55.152	65.196	24,715.5	24.17	147.07	73.0	882.7	0.0	1,122.0
75.00		0.3750	53.895	63.700	23,052.8	23.58	143.72	73.7	842.5	0.0	1,096.5
80.00		0.3750	52.638	62.204	21,466.3	22.99	140.37	74.4	803.2	0.0	1,071.1
85.00		0.3750	51.381	60.708	19,954.4	22.40	137.02	75.1	764.9	0.0	1,045.6
90.00		0.3750	50.124	59.212	18,515.2	21.81	133.66	75.8	727.6	0.0	1,020.1
91.42	Bot - Section 3	0.3750	49.768	58.788	18,120.3	21.64	132.71	76.0	717.1	0.0	284.4
95.00		0.3750	48.867	57.715	17,146.9	21.21	130.31	76.4	691.1	0.0	1,310.5
98.00	Top - Section 2	0.3125	48.738	48.030	14,230.2	25.74	155.96	71.1	575.1	0.0	1,078.7
100.0		0.3125	48.235	47.531	13,791.5	25.45	154.35	71.5	563.2	0.0	325.2
105.0		0.3125	46.978	46.285	12,734.5	24.74	150.33	72.3	533.9	0.0	798.1
110.0		0.3125	45.721	45.038	11,732.9	24.03	146.31	73.1	505.4	0.0	776.9
115.0		0.3125	44.464	43.791	10,785.2	23.33	142.28	74.0	477.8	0.0	755.7
118.0		0.3125	43.710	43.043	10,241.9	22.90	139.87	74.5	461.5	0.0	443.2
120.0		0.3125	43.207	42.544	9,890.0	22.62	138.26	74.8	450.8	0.0	291.2
122.0		0.3125	42.704	42.046	9,546.3	22.33	136.65	75.1	440.3	0.0	287.8
125.0		0.3125	41.950	41.298	9,045.8	21.91	134.24	75.6	424.7	0.0	425.4
128.0		0.3125	41.196	40.550	8,563.1	21.48	131.83	76.1	409.4	0.0	417.8
130.0		0.3125	40.693	40.051	8,251.0	21.20	130.22	76.5	399.4	0.0	274.3
135.0		0.3125	39.436	38.804	7,504.2	20.49	126.19	77.3	374.8	0.0	670.8
138.0		0.3125	38.682	38.056	7,078.5	20.06	123.78	77.8	360.4	0.0	392.3
139.3	Bot - Section 4	0.3125	38.347	37.724	6,894.6	19.87	122.71	78.0	354.1	0.0	171.9
140.0		0.3125	38.179	37.557	6,803.9	19.78	122.17	78.1	351.0	0.0	154.7
144.4	Top - Section 3	0.2500	37.569	29.611	5,210.3	24.73	150.27	72.3	273.2	0.0	1,007.8
145.0		0.2500	37.422	29.495	5,149.1	24.63	149.69	72.4	271.0	0.0	58.7
148.0		0.2500	36.668	28.896	4,842.0	24.10	146.67	73.1	260.1	0.0	298.0
150.0		0.2500	36.165	28.497	4,644.2	23.74	144.66	73.5	252.9	0.0	195.3
155.0		0.2500	34.908	27.500	4,173.4	22.86	139.63	74.5	235.5	0.0	476.4
160.0		0.2500	33.651	26.503	3,735.6	21.97	134.60	75.6	218.6	0.0	459.4
165.0		0.2500	32.394	25.505	3,329.5	21.08	129.58	76.6	202.4	0.0	442.4
167.0		0.2500	31.891	25.106	3,175.7	20.73	127.56	77.0	196.1	0.0	172.2
170.0		0.2500	31.137	24.508	2,954.0	20.20	124.55	77.6	186.9	0.0	253.2
171.0		0.2500	30.886	24.308	2,882.4	20.02	123.54	77.9	183.8	0.0	83.1
175.0		0.2500	29.880	23.510	2,607.8	19.31	119.52	78.7	171.9	0.0	325.4
178.5		0.2500	29.000	22.812	2,382.3	18.69	116.00	79.4	161.8	0.0	275.8
											39,257.1

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:41:38 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		276.7	0.0					0.0	0.0	276.7	0.0	0.0	0.0
5.00		548.5	2,011.0					0.0	470.8	548.5	2,481.8	0.0	0.0
10.00		538.7	1,975.3					0.0	470.8	538.7	2,446.2	0.0	0.0
15.00		529.0	1,939.7					0.0	470.8	529.0	2,410.5	0.0	0.0
20.00	Appurtenance(s)	519.2	1,904.1	73.0	0.0	0.0	90.7	0.0	470.8	592.2	2,465.6	0.0	0.0
25.00		509.5	1,868.4					0.0	469.9	509.5	2,338.4	0.0	0.0
30.00		505.7	1,832.8					0.0	469.9	505.7	2,302.7	0.0	0.0
35.00		512.1	1,797.2					0.0	469.9	512.1	2,267.1	0.0	0.0
40.00		521.5	1,761.5					0.0	469.9	521.5	2,231.5	0.0	0.0
45.00	Bot - Section 2	531.8	1,725.9					0.0	469.9	531.8	2,195.8	0.0	0.0
50.00		431.5	3,158.8					0.0	469.9	431.5	3,628.7	0.0	0.0
53.00	Top - Section 1	271.1	1,863.5					0.0	282.0	271.1	2,145.5	0.0	0.0
55.00		381.0	571.5					0.0	188.0	381.0	759.5	0.0	0.0
60.00		545.3	1,407.4					0.0	469.9	545.3	1,877.4	0.0	0.0
65.00		545.8	1,376.9					0.0	469.9	545.8	1,846.8	0.0	0.0
70.00		545.0	1,346.4					0.0	469.9	545.0	1,816.3	0.0	0.0
75.00		543.2	1,315.8					0.0	469.9	543.2	1,785.7	0.0	0.0
80.00		540.4	1,285.3					0.0	469.9	540.4	1,755.2	0.0	0.0
85.00		536.8	1,254.7					0.0	469.9	536.8	1,724.6	0.0	0.0
90.00		342.7	1,224.2					0.0	469.9	342.7	1,694.1	0.0	0.0
91.42	Bot - Section 3	267.3	341.3					0.0	133.1	267.3	474.4	0.0	0.0
95.00		351.6	1,572.6					0.0	336.8	351.6	1,909.4	0.0	0.0
98.00	Top - Section 2	265.5	1,294.5					0.0	282.0	265.5	1,576.4	0.0	0.0
100.00		368.2	390.2					0.0	188.0	368.2	578.2	0.0	0.0
105.00		521.3	957.7					0.0	469.9	521.3	1,427.6	0.0	0.0
110.00		514.2	932.3					0.0	469.9	514.2	1,402.2	0.0	0.0
115.00		406.4	906.8					0.0	469.9	406.4	1,376.7	0.0	0.0
118.00	Appurtenance(s)	251.2	531.9	982.5	0.0	3,930.2	403.6	0.0	279.6	1,233.7	1,215.0	0.0	0.0
120.00	Appurtenance(s)	199.3	349.5	909.8	0.0	0.0	1,800.0	0.0	178.4	1,109.1	2,327.9	0.0	0.0
122.00	Appurtenance(s)	246.9	345.4	551.2	0.0	0.0	658.8	0.0	178.4	798.1	1,182.6	0.0	0.0
125.00		293.6	510.5					0.0	267.6	293.6	778.0	0.0	0.0
128.00	Appurtenance(s)	242.4	501.3	454.4	0.0	450.6	96.2	0.0	267.6	696.8	865.1	0.0	0.0
130.00		334.0	329.1					0.0	165.8	334.0	494.9	0.0	0.0
135.00		377.8	805.0					0.0	414.4	377.8	1,219.4	0.0	0.0
138.00	Appurtenance(s)	201.9	470.8	5,015.8	0.0	-8,137.7	3,444.6	0.0	248.7	5,217.7	4,164.0	0.0	0.0
139.33	Bot - Section 4	92.8	206.3					0.0	82.7	92.8	289.0	0.0	0.0
140.00		234.9	185.7					0.0	41.4	234.9	227.0	0.0	0.0
144.42	Top - Section 3	230.4	1,209.4					0.0	274.1	230.4	1,483.4	0.0	0.0
145.00		162.7	70.4					0.0	36.2	162.7	106.6	0.0	0.0
148.00	Appurtenance(s)	225.4	357.6	3,391.1	0.0	1,925.1	3,341.2	0.0	186.2	3,616.5	3,885.0	0.0	0.0
150.00		308.7	234.4					0.0	93.0	308.7	327.4	0.0	0.0
155.00		433.0	571.6					0.0	232.6	433.0	804.3	0.0	0.0
160.00	Appurtenance(s)	421.2	551.3	5,444.1	0.0	0.0	4,515.0	0.0	232.6	5,865.3	5,298.9	0.0	0.0
165.00	Appurtenance(s)	288.9	530.9	66.1	0.0	0.0	18.0	0.0	84.5	355.1	633.5	0.0	0.0
167.00	Appurtenance(s)	201.4	206.7	391.7	0.0	0.0	672.0	0.0	25.1	593.1	903.7	0.0	0.0
170.00		159.6	303.9					0.0	37.6	159.6	341.5	0.0	0.0
171.00	Appurtenance(s)	195.1	99.7	772.7	0.0	-2,616.9	319.3	0.0	12.5	967.8	431.5	0.0	0.0
175.00		288.3	390.5					0.0	47.2	288.3	437.8	0.0	0.0

Site Number:	**302467**	**Code: ANSI/TIA-222-G**	
Site Name:	**Bilkays Express, CT**	**Engineering Number:OAA748085_C3_01**	**5/2/2019 3:41:45 PM**
Customer:	**AT&T MOBILITY**		

Load Case: **1.2D + 1.6W** **97 mph with No Ice** **23 Iterations**

Gust Response Factor :1.10 **Wind Importance Factor 1.00**

Dead Load Factor :1.20

Wind Load Factor :1.60

178.50	Appurtenance(s)	132.7	331.0	2,418.7	0.0	2,982.2	2,001.6	0.0	41.3	2,551.4	2,373.9	0.0	0.0
									Totals:	38,363.4	78,708.5	0.00	0.00

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:41:45 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

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 (deg)	Ratio
0.00	-78.67	-38.16	0.00	-4,756.24	0.00	4,756.24	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.533
5.00	-76.12	-37.75	0.00	-4,565.45	0.00	4,565.45	6,145.05	3,072.53	17,781.1	8,903.77	0.06	-0.10	0.525
10.00	-73.61	-37.34	0.00	-4,376.72	0.00	4,376.72	6,086.60	3,043.30	17,295.1	8,660.43	0.22	-0.21	0.518
15.00	-71.13	-36.93	0.00	-4,190.05	0.00	4,190.05	6,026.28	3,013.14	16,810.0	8,417.51	0.50	-0.31	0.510
20.00	-68.60	-36.45	0.00	-4,005.42	0.00	4,005.42	5,964.08	2,982.04	16,326.1	8,175.18	0.88	-0.42	0.502
25.00	-66.20	-36.04	0.00	-3,823.18	0.00	3,823.18	5,900.01	2,950.01	15,843.6	7,933.57	1.38	-0.53	0.493
30.00	-63.84	-35.64	0.00	-3,642.97	0.00	3,642.97	5,834.07	2,917.04	15,362.8	7,692.84	1.99	-0.64	0.485
35.00	-61.51	-35.22	0.00	-3,464.79	0.00	3,464.79	5,766.26	2,883.13	14,884.1	7,453.12	2.72	-0.75	0.476
40.00	-59.22	-34.78	0.00	-3,288.71	0.00	3,288.71	5,696.58	2,848.29	14,407.7	7,214.56	3.56	-0.86	0.466
45.00	-56.96	-34.32	0.00	-3,114.83	0.00	3,114.83	5,625.02	2,812.51	13,933.9	6,977.32	4.51	-0.97	0.457
50.00	-53.29	-33.91	0.00	-2,943.22	0.00	2,943.22	5,551.60	2,775.80	13,463.0	6,741.53	5.59	-1.08	0.446
53.00	-51.12	-33.65	0.00	-2,841.49	0.00	2,841.49	4,466.37	2,233.18	10,853.4	5,434.80	6.29	-1.15	0.535
55.00	-50.31	-33.33	0.00	-2,774.19	0.00	2,774.19	4,445.78	2,222.89	10,710.8	5,363.40	6.78	-1.20	0.529
60.00	-48.38	-32.85	0.00	-2,607.55	0.00	2,607.55	4,392.99	2,196.49	10,355.0	5,185.21	8.10	-1.32	0.514
65.00	-46.47	-32.36	0.00	-2,443.31	0.00	2,443.31	4,338.33	2,169.16	10,000.3	5,007.61	9.56	-1.45	0.499
70.00	-44.60	-31.87	0.00	-2,281.50	0.00	2,281.50	4,281.80	2,140.90	9,647.15	4,830.75	11.14	-1.58	0.483
75.00	-42.76	-31.37	0.00	-2,122.17	0.00	2,122.17	4,223.39	2,111.70	9,295.72	4,654.77	12.86	-1.70	0.466
80.00	-40.96	-30.86	0.00	-1,965.33	0.00	1,965.33	4,163.12	2,081.56	8,946.35	4,479.82	14.71	-1.83	0.449
85.00	-39.18	-30.36	0.00	-1,811.01	0.00	1,811.01	4,100.97	2,050.48	8,599.32	4,306.05	16.70	-1.95	0.430
90.00	-37.46	-30.01	0.00	-1,659.23	0.00	1,659.23	4,036.95	2,018.47	8,254.94	4,133.61	18.81	-2.08	0.411
91.42	-36.97	-29.76	0.00	-1,616.73	0.00	1,616.73	4,018.47	2,009.23	8,157.89	4,085.01	19.43	-2.11	0.405
95.00	-35.03	-29.39	0.00	-1,510.09	0.00	1,510.09	3,971.06	1,985.53	7,913.50	3,962.63	21.05	-2.20	0.390
98.00	-33.43	-29.10	0.00	-1,421.93	0.00	1,421.93	3,074.73	1,537.36	6,126.65	3,067.88	22.46	-2.27	0.475
100.00	-32.82	-28.76	0.00	-1,363.74	0.00	1,363.74	3,057.08	1,528.54	6,027.83	3,018.39	23.43	-2.32	0.463
105.00	-31.36	-28.25	0.00	-1,219.96	0.00	1,219.96	3,011.64	1,505.82	5,781.46	2,895.03	25.93	-2.46	0.432
110.00	-29.92	-27.74	0.00	-1,078.72	0.00	1,078.72	2,964.33	1,482.16	5,536.34	2,772.28	28.57	-2.58	0.400
115.00	-28.51	-27.32	0.00	-940.03	0.00	940.03	2,915.15	1,457.57	5,292.74	2,650.30	31.35	-2.71	0.365
118.00	-27.33	-26.05	0.00	-854.15	0.00	854.15	2,884.74	1,442.37	5,147.43	2,577.54	33.07	-2.78	0.341
120.00	-25.04	-24.85	0.00	-802.04	0.00	802.04	2,864.09	1,432.05	5,050.96	2,529.23	34.24	-2.82	0.326
122.00	-23.88	-24.02	0.00	-752.34	0.00	752.34	2,843.15	1,421.57	4,954.82	2,481.09	35.44	-2.87	0.312
125.00	-23.09	-23.71	0.00	-680.28	0.00	680.28	2,811.17	1,405.58	4,811.29	2,409.22	37.26	-2.93	0.291
128.00	-22.24	-22.99	0.00	-608.70	0.00	608.70	2,778.51	1,389.26	4,668.62	2,337.78	39.12	-2.99	0.269
130.00	-21.74	-22.66	0.00	-562.72	0.00	562.72	2,756.37	1,378.18	4,574.03	2,290.41	40.39	-3.03	0.254
135.00	-20.52	-22.24	0.00	-449.44	0.00	449.44	2,699.70	1,349.85	4,339.46	2,172.95	43.61	-3.12	0.215
138.00	-16.64	-16.81	0.00	-382.74	0.00	382.74	2,664.80	1,332.40	4,200.13	2,103.19	45.59	-3.17	0.188
139.33	-16.35	-16.70	0.00	-360.33	0.00	360.33	2,649.07	1,324.54	4,138.57	2,072.36	46.47	-3.19	0.180
140.00	-16.13	-16.47	0.00	-349.19	0.00	349.19	2,641.16	1,320.58	4,107.88	2,056.99	46.92	-3.20	0.176
144.42	-14.65	-16.16	0.00	-276.47	0.00	276.47	1,927.04	963.52	2,958.38	1,481.39	49.90	-3.25	0.195
145.00	-14.54	-16.00	0.00	-267.04	0.00	267.04	1,922.70	961.35	2,940.04	1,472.21	50.30	-3.26	0.189
148.00	-10.87	-12.17	0.00	-217.13	0.00	217.13	1,899.96	949.98	2,845.93	1,425.08	52.36	-3.30	0.158
150.00	-10.55	-11.85	0.00	-192.78	0.00	192.78	1,884.42	942.21	2,783.42	1,393.78	53.75	-3.33	0.144
155.00	-9.76	-11.38	0.00	-133.53	0.00	133.53	1,844.28	922.14	2,628.12	1,316.02	57.26	-3.38	0.107
160.00	-4.82	-5.21	0.00	-76.64	0.00	76.64	1,802.26	901.13	2,474.43	1,239.06	60.82	-3.41	0.065
165.00	-4.21	-4.82	0.00	-50.58	0.00	50.58	1,758.37	879.19	2,322.64	1,163.05	64.40	-3.44	0.046
167.00	-3.34	-4.18	0.00	-40.94	0.00	40.94	1,740.29	870.15	2,262.53	1,132.94	65.84	-3.44	0.038
170.00	-3.01	-4.00	0.00	-28.41	0.00	28.41	1,712.61	856.30	2,173.05	1,088.14	68.01	-3.45	0.028
171.00	-2.64	-3.00	0.00	-24.41	0.00	24.41	1,703.23	851.62	2,143.42	1,073.30	68.73	-3.46	0.024
175.00	-2.22	-2.69	0.00	-12.40	0.00	12.40	1,664.97	832.49	2,025.94	1,014.48	71.63	-3.46	0.014
178.50	0.00	-2.55	0.00	-2.98	0.00	2.98	1,630.52	815.26	1,924.60	963.73	74.17	-3.47	0.003

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:41:46 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		276.7	0.0					0.0	0.0	276.7	0.0	0.0	0.0
5.00		548.5	1,508.2					0.0	353.1	548.5	1,861.4	0.0	0.0
10.00		538.7	1,481.5					0.0	353.1	538.7	1,834.6	0.0	0.0
15.00		529.0	1,454.8					0.0	353.1	529.0	1,807.9	0.0	0.0
20.00	Appurtenance(s)	519.2	1,428.1	73.0	0.0	0.0	68.0	0.0	353.1	592.2	1,849.2	0.0	0.0
25.00		509.5	1,401.3					0.0	352.4	509.5	1,753.8	0.0	0.0
30.00		505.7	1,374.6					0.0	352.4	505.7	1,727.0	0.0	0.0
35.00		512.1	1,347.9					0.0	352.4	512.1	1,700.3	0.0	0.0
40.00		521.5	1,321.1					0.0	352.4	521.5	1,673.6	0.0	0.0
45.00	Bot - Section 2	531.8	1,294.4					0.0	352.4	531.8	1,646.9	0.0	0.0
50.00		431.5	2,369.1					0.0	352.4	431.5	2,721.5	0.0	0.0
53.00	Top - Section 1	271.1	1,397.6					0.0	211.5	271.1	1,609.1	0.0	0.0
55.00		381.0	428.6					0.0	141.0	381.0	569.6	0.0	0.0
60.00		545.3	1,055.6					0.0	352.4	545.3	1,408.0	0.0	0.0
65.00		545.8	1,032.7					0.0	352.4	545.8	1,385.1	0.0	0.0
70.00		545.0	1,009.8					0.0	352.4	545.0	1,362.2	0.0	0.0
75.00		543.2	986.9					0.0	352.4	543.2	1,339.3	0.0	0.0
80.00		540.4	963.9					0.0	352.4	540.4	1,316.4	0.0	0.0
85.00		536.8	941.0					0.0	352.4	536.8	1,293.5	0.0	0.0
90.00		342.7	918.1					0.0	352.4	342.7	1,270.6	0.0	0.0
91.42	Bot - Section 3	267.3	256.0					0.0	99.9	267.3	355.8	0.0	0.0
95.00		351.6	1,179.4					0.0	252.6	351.6	1,432.0	0.0	0.0
98.00	Top - Section 2	265.5	970.8					0.0	211.5	265.5	1,182.3	0.0	0.0
100.00		368.2	292.7					0.0	141.0	368.2	433.6	0.0	0.0
105.00		521.3	718.3					0.0	352.4	521.3	1,070.7	0.0	0.0
110.00		514.2	699.2					0.0	352.4	514.2	1,051.6	0.0	0.0
115.00		406.4	680.1					0.0	352.4	406.4	1,032.5	0.0	0.0
118.00	Appurtenance(s)	251.2	398.9	982.5	0.0	3,930.2	302.7	0.0	209.7	1,233.7	911.2	0.0	0.0
120.00	Appurtenance(s)	199.3	262.1	909.8	0.0	0.0	1,350.0	0.0	133.8	1,109.1	1,745.9	0.0	0.0
122.00	Appurtenance(s)	246.9	259.1	551.2	0.0	0.0	494.1	0.0	133.8	798.1	886.9	0.0	0.0
125.00		293.6	382.9					0.0	200.7	293.6	583.5	0.0	0.0
128.00	Appurtenance(s)	242.4	376.0	454.4	0.0	450.6	72.2	0.0	200.7	696.8	648.8	0.0	0.0
130.00		334.0	246.8					0.0	124.3	334.0	371.2	0.0	0.0
135.00		377.8	603.7					0.0	310.8	377.8	914.5	0.0	0.0
138.00	Appurtenance(s)	201.9	353.1	5,015.8	0.0	-8,137.7	2,583.4	0.0	186.5	5,217.7	3,123.0	0.0	0.0
139.33	Bot - Section 4	92.8	154.7					0.0	62.1	92.8	216.8	0.0	0.0
140.00		234.9	139.2					0.0	31.0	234.9	170.3	0.0	0.0
144.42	Top - Section 3	230.4	907.0					0.0	205.5	230.4	1,112.6	0.0	0.0
145.00		162.3	52.8					0.0	27.1	162.3	79.9	0.0	0.0
148.00	Appurtenance(s)	225.0	268.2	3,391.1	0.0	1,925.1	2,505.9	0.0	139.6	3,616.1	2,913.7	0.0	0.0
150.00		308.7	175.8					0.0	69.8	308.7	245.6	0.0	0.0
155.00		433.0	428.7					0.0	174.5	433.0	603.2	0.0	0.0
160.00	Appurtenance(s)	421.2	413.5	5,444.1	0.0	0.0	3,386.2	0.0	174.5	5,865.3	3,974.2	0.0	0.0
165.00	Appurtenance(s)	288.9	398.2	66.1	0.0	0.0	13.5	0.0	63.4	355.1	475.1	0.0	0.0
167.00	Appurtenance(s)	201.4	155.0	391.7	0.0	0.0	504.0	0.0	18.8	593.1	677.8	0.0	0.0
170.00		159.6	227.9					0.0	28.2	159.6	256.1	0.0	0.0
171.00	Appurtenance(s)	195.1	74.7	772.7	0.0	-2,616.9	239.5	0.0	9.4	967.8	323.6	0.0	0.0
175.00		288.3	292.9					0.0	35.4	288.3	328.3	0.0	0.0

Site Number:	**302467**	**Code: ANSI/TIA-222-G**	
Site Name:	**Bilkays Express, CT**	**Engineering Number:OAA748085_C3_01**	**5/2/2019 3:41:53 PM**
Customer:	**AT&T MOBILITY**		

Load Case: **0.9D + 1.6W** **97 mph with No Ice (Reduced DL)** **23 Iterations**

Gust Response Factor :1.10 **Wind Importance Factor 1.00**

Dead Load Factor :0.90

Wind Load Factor :1.60

178.50	**Appurtenance(s)**	**132.7**	**248.3**	**2,418.7**	**0.0**	**2,982.2**	**1,501.2**	**0.0**	**31.0**	**2,551.4**	**1,780.5**	**0.0**	**0.0**
								Totals:		**38,362.6**	**59,031.4**	**0.00**	**0.00**

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:41:53 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

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 (deg)	Ratio
0.00	-59.00	-38.14	0.00	-4,713.18	0.00	4,713.18	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.525
5.00	-57.07	-37.69	0.00	-4,522.48	0.00	4,522.48	6,145.05	3,072.53	17,781.1	8,903.77	0.06	-0.10	0.517
10.00	-55.17	-37.25	0.00	-4,334.03	0.00	4,334.03	6,086.60	3,043.30	17,295.1	8,660.43	0.22	-0.21	0.510
15.00	-53.29	-36.81	0.00	-4,147.79	0.00	4,147.79	6,026.28	3,013.14	16,810.0	8,417.51	0.49	-0.31	0.502
20.00	-51.38	-36.30	0.00	-3,963.75	0.00	3,963.75	5,964.08	2,982.04	16,326.1	8,175.18	0.87	-0.42	0.494
25.00	-49.57	-35.87	0.00	-3,782.25	0.00	3,782.25	5,900.01	2,950.01	15,843.6	7,933.57	1.37	-0.52	0.485
30.00	-47.78	-35.44	0.00	-3,602.91	0.00	3,602.91	5,834.07	2,917.04	15,362.8	7,692.84	1.97	-0.63	0.477
35.00	-46.02	-34.99	0.00	-3,425.74	0.00	3,425.74	5,766.26	2,883.13	14,884.1	7,453.12	2.69	-0.74	0.468
40.00	-44.28	-34.53	0.00	-3,250.78	0.00	3,250.78	5,696.58	2,848.29	14,407.7	7,214.56	3.52	-0.85	0.459
45.00	-42.58	-34.06	0.00	-3,078.13	0.00	3,078.13	5,625.02	2,812.51	13,933.9	6,977.32	4.47	-0.96	0.449
50.00	-39.81	-33.64	0.00	-2,907.85	0.00	2,907.85	5,551.60	2,775.80	13,463.0	6,741.53	5.53	-1.07	0.439
53.00	-38.18	-33.37	0.00	-2,806.94	0.00	2,806.94	4,466.37	2,233.18	10,853.4	5,434.80	6.23	-1.14	0.525
55.00	-37.57	-33.04	0.00	-2,740.19	0.00	2,740.19	4,445.78	2,222.89	10,710.8	5,363.40	6.71	-1.18	0.520
60.00	-36.10	-32.54	0.00	-2,575.00	0.00	2,575.00	4,392.99	2,196.49	10,355.0	5,185.21	8.02	-1.31	0.505
65.00	-34.66	-32.04	0.00	-2,412.30	0.00	2,412.30	4,338.33	2,169.16	10,000.3	5,007.61	9.46	-1.43	0.490
70.00	-33.24	-31.53	0.00	-2,252.11	0.00	2,252.11	4,281.80	2,140.90	9,647.15	4,830.75	11.03	-1.56	0.474
75.00	-31.85	-31.02	0.00	-2,094.46	0.00	2,094.46	4,223.39	2,111.70	9,295.72	4,654.77	12.73	-1.68	0.458
80.00	-30.48	-30.51	0.00	-1,939.36	0.00	1,939.36	4,163.12	2,081.56	8,946.35	4,479.82	14.56	-1.81	0.440
85.00	-29.15	-29.99	0.00	-1,786.84	0.00	1,786.84	4,100.97	2,050.48	8,599.32	4,306.05	16.52	-1.93	0.422
90.00	-27.85	-29.64	0.00	-1,636.90	0.00	1,636.90	4,036.95	2,018.47	8,254.94	4,133.61	18.61	-2.05	0.403
91.42	-27.47	-29.39	0.00	-1,594.91	0.00	1,594.91	4,018.47	2,009.23	8,157.89	4,085.01	19.22	-2.09	0.397
95.00	-26.01	-29.02	0.00	-1,489.60	0.00	1,489.60	3,971.06	1,985.53	7,913.50	3,962.63	20.82	-2.18	0.383
98.00	-24.81	-28.74	0.00	-1,402.54	0.00	1,402.54	3,074.73	1,537.36	6,126.65	3,067.88	22.21	-2.25	0.466
100.00	-24.35	-28.39	0.00	-1,345.07	0.00	1,345.07	3,057.08	1,528.54	6,027.83	3,018.39	23.17	-2.30	0.454
105.00	-23.24	-27.88	0.00	-1,203.12	0.00	1,203.12	3,011.64	1,505.82	5,781.46	2,895.03	25.64	-2.43	0.424
110.00	-22.15	-27.37	0.00	-1,063.74	0.00	1,063.74	2,964.33	1,482.16	5,536.34	2,772.28	28.25	-2.55	0.392
115.00	-21.09	-26.95	0.00	-926.92	0.00	926.92	2,915.15	1,457.57	5,292.74	2,650.30	30.99	-2.67	0.357
118.00	-20.21	-25.69	0.00	-842.15	0.00	842.15	2,884.74	1,442.37	5,147.43	2,577.54	32.69	-2.74	0.334
120.00	-18.50	-24.51	0.00	-790.77	0.00	790.77	2,864.09	1,432.05	5,050.96	2,529.23	33.85	-2.79	0.319
122.00	-17.64	-23.69	0.00	-741.74	0.00	741.74	2,843.15	1,421.57	4,954.82	2,481.09	35.03	-2.83	0.305
125.00	-17.04	-23.39	0.00	-670.67	0.00	670.67	2,811.17	1,405.58	4,811.29	2,409.22	36.83	-2.90	0.285
128.00	-16.41	-22.67	0.00	-600.06	0.00	600.06	2,778.51	1,389.26	4,668.62	2,337.78	38.67	-2.96	0.263
130.00	-16.03	-22.34	0.00	-554.72	0.00	554.72	2,756.37	1,378.18	4,574.03	2,290.41	39.92	-2.99	0.248
135.00	-15.11	-21.93	0.00	-443.04	0.00	443.04	2,699.70	1,349.85	4,339.46	2,172.95	43.10	-3.08	0.210
138.00	-12.27	-16.55	0.00	-377.26	0.00	377.26	2,664.80	1,332.40	4,200.13	2,103.19	45.06	-3.13	0.184
139.33	-12.05	-16.45	0.00	-355.19	0.00	355.19	2,649.07	1,324.54	4,138.57	2,072.36	45.93	-3.15	0.176
140.00	-11.89	-16.22	0.00	-344.22	0.00	344.22	2,641.16	1,320.58	4,107.88	2,056.99	46.37	-3.16	0.172
144.42	-10.78	-15.93	0.00	-272.60	0.00	272.60	1,927.04	963.52	2,958.38	1,481.39	49.32	-3.21	0.190
145.00	-10.70	-15.77	0.00	-263.31	0.00	263.31	1,922.70	961.35	2,940.04	1,472.21	49.71	-3.22	0.185
148.00	-7.99	-12.00	0.00	-214.07	0.00	214.07	1,899.96	949.98	2,845.93	1,425.08	51.75	-3.26	0.155
150.00	-7.76	-11.68	0.00	-190.08	0.00	190.08	1,884.42	942.21	2,783.42	1,393.78	53.12	-3.28	0.141
155.00	-7.17	-11.22	0.00	-131.68	0.00	131.68	1,844.28	922.14	2,628.12	1,316.02	56.59	-3.33	0.104
160.00	-3.54	-5.13	0.00	-75.58	0.00	75.58	1,802.26	901.13	2,474.43	1,239.06	60.10	-3.37	0.063
165.00	-3.09	-4.75	0.00	-49.92	0.00	49.92	1,758.37	879.19	2,322.64	1,163.05	63.64	-3.39	0.045
167.00	-2.45	-4.12	0.00	-40.41	0.00	40.41	1,740.29	870.15	2,262.53	1,132.94	65.06	-3.40	0.037
170.00	-2.20	-3.95	0.00	-28.05	0.00	28.05	1,712.61	856.30	2,173.05	1,088.14	67.20	-3.41	0.027
171.00	-1.94	-2.96	0.00	-24.11	0.00	24.11	1,703.23	851.62	2,143.42	1,073.30	67.91	-3.41	0.024
175.00	-1.63	-2.65	0.00	-12.27	0.00	12.27	1,664.97	832.49	2,025.94	1,014.48	70.77	-3.42	0.013
178.50	0.00	-2.55	0.00	-2.98	0.00	2.98	1,630.52	815.26	1,924.60	963.73	73.28	-3.42	0.003

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 23 Iterations

Gust Response Factor :1.10 — Ice Dead Load Factor :1.00 — Wind Importance Factor :1.00
Dead Load Factor :1.20 — Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		87.5	0.0					0.0	0.0	87.5	0.0	0.0	0.0
5.00		173.9	2,533.0					794.0	701.7	967.9	3,234.7	0.0	0.0
10.00		171.4	2,548.9					785.8	729.3	957.2	3,278.2	0.0	0.0
15.00		168.7	2,533.2					775.7	743.6	944.4	3,276.8	0.0	0.0
20.00	Appurtenance(s)	165.9	2,507.2	19.4	0.0	0.0	149.4	765.0	753.6	950.2	3,410.1	0.0	0.0
25.00		163.0	2,475.8					753.9	754.5	916.9	3,230.3	0.0	0.0
30.00		162.1	2,441.1					742.6	760.7	904.7	3,201.9	0.0	0.0
35.00		164.4	2,404.2					748.7	766.0	913.1	3,170.2	0.0	0.0
40.00		167.7	2,365.5					767.7	770.7	935.4	3,136.2	0.0	0.0
45.00	Bot - Section 2	171.2	2,325.6					782.9	774.8	954.1	3,100.4	0.0	0.0
50.00		139.0	3,760.4					794.9	778.5	933.9	4,538.9	0.0	0.0
53.00	Top - Section 1	87.4	2,223.0					446.1	468.8	533.6	2,691.8	0.0	0.0
55.00		123.0	810.4					302.1	313.2	425.1	1,123.6	0.0	0.0
60.00		176.3	1,996.0					760.1	785.1	936.4	2,781.1	0.0	0.0
65.00		176.7	1,957.9					765.5	788.0	942.2	2,745.9	0.0	0.0
70.00		176.7	1,919.3					769.3	790.7	946.1	2,710.0	0.0	0.0
75.00		176.5	1,880.2					771.6	793.3	948.1	2,673.5	0.0	0.0
80.00		175.9	1,840.6					772.7	795.7	948.5	2,636.3	0.0	0.0
85.00		175.0	1,800.7					772.5	798.0	947.4	2,598.7	0.0	0.0
90.00		111.8	1,760.5					771.2	800.2	883.1	2,560.6	0.0	0.0
91.42	Bot - Section 3	87.3	492.8					218.1	227.1	305.5	719.9	0.0	0.0
95.00		114.9	1,954.7					550.8	575.1	665.8	2,529.8	0.0	0.0
98.00	Top - Section 2	86.9	1,610.8					459.9	482.3	546.8	2,093.1	0.0	0.0
100.00		120.7	599.6					308.9	321.9	429.6	921.5	0.0	0.0
105.00		171.1	1,469.7					769.4	806.1	940.6	2,275.8	0.0	0.0
110.00		169.1	1,433.5					764.7	807.9	933.8	2,241.4	0.0	0.0
115.00		133.9	1,397.0					759.2	809.6	893.2	2,206.6	0.0	0.0
118.00	Appurtenance(s)	82.9	822.2	218.3	0.0	873.2	1,045.6	452.6	479.2	753.8	2,347.1	0.0	0.0
120.00	Appurtenance(s)	65.8	541.4	282.0	0.0	0.0	2,134.4	226.3	294.2	574.2	2,969.9	0.0	0.0
122.00	Appurtenance(s)	81.7	535.5	127.6	0.0	0.0	1,176.8	225.6	294.4	434.9	2,006.6	0.0	0.0
125.00		97.3	791.3					337.0	442.0	434.2	1,233.3	0.0	0.0
128.00	Appurtenance(s)	80.4	778.0	110.5	0.0	108.6	293.2	335.3	442.5	526.2	1,513.7	0.0	0.0
130.00		111.0	511.8					154.8	252.9	265.8	764.7	0.0	0.0
135.00		125.7	1,249.3					384.4	633.0	510.2	1,882.3	0.0	0.0
138.00	Appurtenance(s)	67.3	733.3	1,208.1	0.0	-1,825.5	6,680.8	228.9	380.2	1,504.3	7,794.3	0.0	0.0
139.33	Bot - Section 4	31.0	322.2					64.5	130.2	95.5	452.4	0.0	0.0
140.00		78.5	244.1					32.2	65.1	110.7	309.3	0.0	0.0
144.42	Top - Section 3	77.0	1,586.8					212.6	431.9	289.6	2,018.7	0.0	0.0
145.00		54.3	120.1					28.2	57.1	82.5	177.2	0.0	0.0
148.00	Appurtenance(s)	75.4	608.9	812.6	0.0	443.9	5,324.4	144.5	293.7	1,032.5	6,227.0	0.0	0.0
150.00		103.8	400.0					74.7	108.3	178.4	508.2	0.0	0.0
155.00		145.9	972.9					184.2	270.8	330.1	1,243.7	0.0	0.0
160.00	Appurtenance(s)	142.4	940.1	1,295.1	0.0	0.0	8,080.0	180.6	271.0	1,618.2	9,291.1	0.0	0.0
165.00	Appurtenance(s)	98.0	907.1	16.5	0.0	0.0	58.4	176.9	123.0	291.4	1,088.6	0.0	0.0
167.00	Appurtenance(s)	68.5	355.3	120.1	0.0	0.0	1,033.9	68.2	33.5	256.8	1,422.6	0.0	0.0
170.00		54.4	522.1					101.0	50.2	155.3	572.4	0.0	0.0
171.00	Appurtenance(s)	66.6	172.0	175.7	0.0	-596.1	792.2	33.3	16.8	275.6	980.9	0.0	0.0
175.00		98.7	671.2					0.0	47.2	98.7	718.4	0.0	0.0

Site Number:	**302467**	**Code: ANSI/TIA-222-G**	
Site Name:	**Bilkays Express, CT**	**Engineering Number:OAA748085_C3_01**	**5/2/2019 3:42:01 PM**
Customer:	**AT&T MOBILITY**		

Load Case: **1.2D + 1.0Di + 1.0Wi** **50 mph with 0.75 in Radial Ice** **23 Iterations**

Gust Response Factor :1.10 **Ice Dead Load Factor :1.00** **Wind Importance Factor :1.00**

Dead Load Factor :1.20 **Ice Importance Factor :1.00**

Wind Load Factor :1.00

178.50	Appurtenance(s)	45.5	570.3	571.3	0.0	540.3	3,717.1	0.0	41.3	616.9	4,328.7	0.0	0.0
									Totals:	32,126.5	118,938.	0.00	0.00

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:42:01 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-118.92	-32.11	0.00	-2,942.69	0.00	2,942.69	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.341
5.00	-115.65	-31.27	0.00	-2,782.16	0.00	2,782.16	6,145.05	3,072.53	17,781.1	8,903.77	0.03	-0.06	0.331
10.00	-112.34	-30.43	0.00	-2,625.84	0.00	2,625.84	6,086.60	3,043.30	17,295.1	8,660.43	0.14	-0.13	0.322
15.00	-109.03	-29.59	0.00	-2,473.72	0.00	2,473.72	6,026.28	3,013.14	16,810.0	8,417.51	0.30	-0.19	0.312
20.00	-105.60	-28.74	0.00	-2,325.77	0.00	2,325.77	5,964.08	2,982.04	16,326.1	8,175.18	0.54	-0.25	0.302
25.00	-102.34	-27.92	0.00	-2,182.06	0.00	2,182.06	5,900.01	2,950.01	15,843.6	7,933.57	0.83	-0.31	0.292
30.00	-99.12	-27.10	0.00	-2,042.46	0.00	2,042.46	5,834.07	2,917.04	15,362.8	7,692.84	1.20	-0.38	0.283
35.00	-95.92	-26.27	0.00	-1,906.95	0.00	1,906.95	5,766.26	2,883.13	14,884.1	7,453.12	1.62	-0.44	0.273
40.00	-92.77	-25.40	0.00	-1,775.62	0.00	1,775.62	5,696.58	2,848.29	14,407.7	7,214.56	2.11	-0.50	0.262
45.00	-89.65	-24.51	0.00	-1,648.60	0.00	1,648.60	5,625.02	2,812.51	13,933.9	6,977.32	2.66	-0.56	0.252
50.00	-85.10	-23.60	0.00	-1,526.03	0.00	1,526.03	5,551.60	2,775.80	13,463.0	6,741.53	3.28	-0.62	0.242
53.00	-82.41	-23.08	0.00	-1,455.22	0.00	1,455.22	4,466.37	2,233.18	10,853.4	5,434.80	3.68	-0.65	0.286
55.00	-81.27	-22.71	0.00	-1,409.06	0.00	1,409.06	4,445.78	2,222.89	10,710.8	5,363.40	3.96	-0.67	0.281
60.00	-78.48	-21.82	0.00	-1,295.52	0.00	1,295.52	4,392.99	2,196.49	10,355.0	5,185.21	4.70	-0.74	0.268
65.00	-75.72	-20.93	0.00	-1,186.41	0.00	1,186.41	4,338.33	2,169.16	10,000.3	5,007.61	5.50	-0.80	0.254
70.00	-73.01	-20.02	0.00	-1,081.79	0.00	1,081.79	4,281.80	2,140.90	9,647.15	4,830.75	6.38	-0.86	0.241
75.00	-70.33	-19.10	0.00	-981.71	0.00	981.71	4,223.39	2,111.70	9,295.72	4,654.77	7.31	-0.92	0.228
80.00	-67.69	-18.17	0.00	-886.22	0.00	886.22	4,163.12	2,081.56	8,946.35	4,479.82	8.31	-0.98	0.214
85.00	-65.09	-17.24	0.00	-795.35	0.00	795.35	4,100.97	2,050.48	8,599.32	4,306.05	9.36	-1.03	0.201
90.00	-62.54	-16.35	0.00	-709.14	0.00	709.14	4,036.95	2,018.47	8,254.94	4,133.61	10.47	-1.09	0.187
91.42	-61.82	-16.06	0.00	-685.98	0.00	685.98	4,018.47	2,009.23	8,157.89	4,085.01	10.80	-1.10	0.183
95.00	-59.29	-15.38	0.00	-628.43	0.00	628.43	3,971.06	1,985.53	7,913.50	3,962.63	11.64	-1.14	0.174
98.00	-57.20	-14.81	0.00	-582.30	0.00	582.30	3,074.73	1,537.36	6,126.65	3,067.88	12.37	-1.17	0.209
100.00	-56.28	-14.40	0.00	-552.67	0.00	552.67	3,057.08	1,528.54	6,027.83	3,018.39	12.86	-1.19	0.202
105.00	-54.01	-13.46	0.00	-480.67	0.00	480.67	3,011.64	1,505.82	5,781.46	2,895.03	14.14	-1.24	0.184
110.00	-51.78	-12.52	0.00	-413.36	0.00	413.36	2,964.33	1,482.16	5,536.34	2,772.28	15.47	-1.29	0.167
115.00	-49.59	-11.61	0.00	-350.75	0.00	350.75	2,915.15	1,457.57	5,292.74	2,650.30	16.85	-1.34	0.149
118.00	-47.26	-10.82	0.00	-315.05	0.00	315.05	2,884.74	1,442.37	5,147.43	2,577.54	17.70	-1.37	0.139
120.00	-44.30	-10.19	0.00	-293.41	0.00	293.41	2,864.09	1,432.05	5,050.96	2,529.23	18.27	-1.38	0.132
122.00	-42.30	-9.72	0.00	-273.04	0.00	273.04	2,843.15	1,421.57	4,954.82	2,481.09	18.86	-1.40	0.125
125.00	-41.08	-9.27	0.00	-243.89	0.00	243.89	2,811.17	1,405.58	4,811.29	2,409.22	19.74	-1.42	0.116
128.00	-39.57	-8.72	0.00	-215.98	0.00	215.98	2,778.51	1,389.26	4,668.62	2,337.78	20.64	-1.44	0.107
130.00	-38.81	-8.45	0.00	-198.54	0.00	198.54	2,756.37	1,378.18	4,574.03	2,290.41	21.25	-1.46	0.101
135.00	-36.94	-7.90	0.00	-156.31	0.00	156.31	2,699.70	1,349.85	4,339.46	2,172.95	22.80	-1.49	0.086
138.00	-29.19	-6.20	0.00	-132.60	0.00	132.60	2,664.80	1,332.40	4,200.13	2,103.19	23.74	-1.50	0.074
139.33	-28.74	-6.10	0.00	-124.33	0.00	124.33	2,649.07	1,324.54	4,138.57	2,072.36	24.16	-1.51	0.071
140.00	-28.43	-5.98	0.00	-120.26	0.00	120.26	2,641.16	1,320.58	4,107.88	2,056.99	24.37	-1.51	0.069
144.42	-26.42	-5.65	0.00	-93.83	0.00	93.83	1,927.04	963.52	2,958.38	1,481.39	25.78	-1.53	0.077
145.00	-26.24	-5.56	0.00	-90.54	0.00	90.54	1,922.70	961.35	2,940.04	1,472.21	25.97	-1.54	0.075
148.00	-20.04	-4.37	0.00	-73.41	0.00	73.41	1,899.96	949.98	2,845.93	1,425.08	26.94	-1.55	0.062
150.00	-19.54	-4.18	0.00	-64.67	0.00	64.67	1,884.42	942.21	2,783.42	1,393.78	27.59	-1.56	0.057
155.00	-18.30	-3.82	0.00	-43.78	0.00	43.78	1,844.28	922.14	2,628.12	1,316.02	29.23	-1.58	0.043
160.00	-9.06	-1.95	0.00	-24.68	0.00	24.68	1,802.26	901.13	2,474.43	1,239.06	30.89	-1.59	0.025
165.00	-7.98	-1.63	0.00	-14.95	0.00	14.95	1,758.37	879.19	2,322.64	1,163.05	32.55	-1.59	0.017
167.00	-6.57	-1.33	0.00	-11.70	0.00	11.70	1,740.29	870.15	2,262.53	1,132.94	33.22	-1.60	0.014
170.00	-6.00	-1.16	0.00	-7.71	0.00	7.71	1,712.61	856.30	2,173.05	1,088.14	34.22	-1.60	0.011
171.00	-5.03	-0.86	0.00	-6.55	0.00	6.55	1,703.23	851.62	2,143.42	1,073.30	34.56	-1.60	0.009
175.00	-4.31	-0.74	0.00	-3.12	0.00	3.12	1,664.97	832.49	2,025.94	1,014.48	35.90	-1.60	0.006
178.50	0.00	-0.62	0.00	-0.54	0.00	0.54	1,630.52	815.26	1,924.60	963.73	37.08	-1.60	0.001

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		66.2	0.0					0.0	0.0	66.2	0.0	0.0	0.0
5.00		131.2	1,675.8					0.0	392.4	131.2	2,068.2	0.0	0.0
10.00		128.8	1,646.1					0.0	392.4	128.8	2,038.5	0.0	0.0
15.00		126.5	1,616.4					0.0	392.4	126.5	2,008.8	0.0	0.0
20.00	Appurtenance(s)	124.2	1,586.7	17.5	0.0	0.0	75.6	0.0	392.4	141.6	2,054.7	0.0	0.0
25.00		121.8	1,557.0					0.0	391.6	121.8	1,948.6	0.0	0.0
30.00		120.9	1,527.3					0.0	391.6	120.9	1,918.9	0.0	0.0
35.00		122.5	1,497.6					0.0	391.6	122.5	1,889.2	0.0	0.0
40.00		124.7	1,467.9					0.0	391.6	124.7	1,859.5	0.0	0.0
45.00	Bot - Section 2	127.2	1,438.2					0.0	391.6	127.2	1,829.8	0.0	0.0
50.00		103.2	2,632.3					0.0	391.6	103.2	3,023.9	0.0	0.0
53.00	Top - Section 1	64.8	1,552.9					0.0	235.0	64.8	1,787.9	0.0	0.0
55.00		91.1	476.3					0.0	156.6	91.1	632.9	0.0	0.0
60.00		130.4	1,172.9					0.0	391.6	130.4	1,564.5	0.0	0.0
65.00		130.5	1,147.4					0.0	391.6	130.5	1,539.0	0.0	0.0
70.00		130.3	1,122.0					0.0	391.6	130.3	1,513.6	0.0	0.0
75.00		129.9	1,096.5					0.0	391.6	129.9	1,488.1	0.0	0.0
80.00		129.2	1,071.1					0.0	391.6	129.2	1,462.7	0.0	0.0
85.00		128.4	1,045.6					0.0	391.6	128.4	1,437.2	0.0	0.0
90.00		81.9	1,020.1					0.0	391.6	81.9	1,411.7	0.0	0.0
91.42	Bot - Section 3	63.9	284.4					0.0	111.0	63.9	395.4	0.0	0.0
95.00		84.1	1,310.5					0.0	280.6	84.1	1,591.1	0.0	0.0
98.00	Top - Section 2	63.5	1,078.7					0.0	235.0	63.5	1,313.7	0.0	0.0
100.00		88.1	325.2					0.0	156.6	88.1	481.8	0.0	0.0
105.00		124.7	798.1					0.0	391.6	124.7	1,189.7	0.0	0.0
110.00		123.0	776.9					0.0	391.6	123.0	1,168.5	0.0	0.0
115.00		97.2	755.7					0.0	391.6	97.2	1,147.3	0.0	0.0
118.00	Appurtenance(s)	60.1	443.2	235.0	0.0	939.8	336.3	0.0	233.0	295.0	1,012.5	0.0	0.0
120.00	Appurtenance(s)	47.7	291.2	217.6	0.0	0.0	1,500.0	0.0	148.6	265.2	1,939.9	0.0	0.0
122.00	Appurtenance(s)	59.0	287.8	131.8	0.0	0.0	549.0	0.0	148.6	190.9	985.5	0.0	0.0
125.00		70.2	425.4					0.0	223.0	70.2	648.4	0.0	0.0
128.00	Appurtenance(s)	58.0	417.8	108.7	0.0	107.7	80.2	0.0	223.0	166.6	720.9	0.0	0.0
130.00		79.9	274.3					0.0	138.1	79.9	412.4	0.0	0.0
135.00		90.3	670.8					0.0	345.4	90.3	1,016.2	0.0	0.0
138.00	Appurtenance(s)	48.3	392.3	1,199.4	0.0	-1,946.0	2,870.5	0.0	207.2	1,247.7	3,470.0	0.0	0.0
139.33	Bot - Section 4	22.2	171.9					0.0	68.9	22.2	240.9	0.0	0.0
140.00		56.2	154.7					0.0	34.5	56.2	189.2	0.0	0.0
144.42	Top - Section 3	55.1	1,007.8					0.0	228.4	55.1	1,236.2	0.0	0.0
145.00		38.8	58.7					0.0	30.2	38.8	88.8	0.0	0.0
148.00	Appurtenance(s)	53.8	298.0	810.9	0.0	460.4	2,784.3	0.0	155.1	864.7	3,237.5	0.0	0.0
150.00		73.8	195.3					0.0	77.5	73.8	272.8	0.0	0.0
155.00		103.5	476.4					0.0	193.9	103.5	670.2	0.0	0.0
160.00	Appurtenance(s)	100.7	459.4	1,301.9	0.0	0.0	3,762.5	0.0	193.9	1,402.6	4,415.7	0.0	0.0
165.00	Appurtenance(s)	69.1	442.4	15.8	0.0	0.0	15.0	0.0	70.5	84.9	527.9	0.0	0.0
167.00	Appurtenance(s)	48.2	172.2	93.7	0.0	0.0	560.0	0.0	20.9	141.8	753.1	0.0	0.0
170.00		38.2	253.2					0.0	31.3	38.2	284.6	0.0	0.0
171.00	Appurtenance(s)	46.7	83.1	184.8	0.0	-625.8	266.1	0.0	10.4	231.4	359.6	0.0	0.0
175.00		68.9	325.4					0.0	39.4	68.9	364.8	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

178.50	Appurtenance(s)	31.7	275.8	578.4	0.0	713.2	1,668.0	0.0	34.4	610.1	1,978.3	0.0	0.0
									Totals:	9,173.77	65,590.4	0.00	0.00

Site Number: 302467 Code: ANSI/TIA-222-G

Site Name: Bilkays Express, CT Engineering Number:OAA748085_C3_01 5/2/2019 3:42:08 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-65.59	-9.12	0.00	-1,130.96	0.00	1,130.96	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.134
5.00	-63.52	-9.02	0.00	-1,085.35	0.00	1,085.35	6,145.05	3,072.53	17,781.1	8,903.77	0.01	-0.02	0.132
10.00	-61.47	-8.91	0.00	-1,040.27	0.00	1,040.27	6,086.60	3,043.30	17,295.1	8,660.43	0.05	-0.05	0.130
15.00	-59.46	-8.81	0.00	-995.70	0.00	995.70	6,026.28	3,013.14	16,810.0	8,417.51	0.12	-0.07	0.128
20.00	-57.40	-8.69	0.00	-951.65	0.00	951.65	5,964.08	2,982.04	16,326.1	8,175.18	0.21	-0.10	0.126
25.00	-55.45	-8.59	0.00	-908.19	0.00	908.19	5,900.01	2,950.01	15,843.6	7,933.57	0.33	-0.13	0.124
30.00	-53.53	-8.49	0.00	-865.23	0.00	865.23	5,834.07	2,917.04	15,362.8	7,692.84	0.47	-0.15	0.122
35.00	-51.64	-8.39	0.00	-822.79	0.00	822.79	5,766.26	2,883.13	14,884.1	7,453.12	0.65	-0.18	0.119
40.00	-49.77	-8.28	0.00	-780.86	0.00	780.86	5,696.58	2,848.29	14,407.7	7,214.56	0.85	-0.20	0.117
45.00	-47.94	-8.17	0.00	-739.47	0.00	739.47	5,625.02	2,812.51	13,933.9	6,977.32	1.07	-0.23	0.115
50.00	-44.91	-8.07	0.00	-698.65	0.00	698.65	5,551.60	2,775.80	13,463.0	6,741.53	1.33	-0.26	0.112
53.00	-43.12	-8.00	0.00	-674.45	0.00	674.45	4,466.37	2,233.18	10,853.4	5,434.80	1.49	-0.27	0.134
55.00	-42.49	-7.92	0.00	-658.44	0.00	658.44	4,445.78	2,222.89	10,710.8	5,363.40	1.61	-0.28	0.132
60.00	-40.92	-7.81	0.00	-618.82	0.00	618.82	4,392.99	2,196.49	10,355.0	5,185.21	1.93	-0.31	0.129
65.00	-39.38	-7.69	0.00	-579.78	0.00	579.78	4,338.33	2,169.16	10,000.3	5,007.61	2.27	-0.34	0.125
70.00	-37.86	-7.57	0.00	-541.34	0.00	541.34	4,281.80	2,140.90	9,647.15	4,830.75	2.65	-0.37	0.121
75.00	-36.37	-7.45	0.00	-503.49	0.00	503.49	4,223.39	2,111.70	9,295.72	4,654.77	3.06	-0.40	0.117
80.00	-34.91	-7.33	0.00	-466.25	0.00	466.25	4,163.12	2,081.56	8,946.35	4,479.82	3.50	-0.43	0.112
85.00	-33.47	-7.20	0.00	-429.62	0.00	429.62	4,100.97	2,050.48	8,599.32	4,306.05	3.97	-0.46	0.108
90.00	-32.05	-7.12	0.00	-393.61	0.00	393.61	4,036.95	2,018.47	8,254.94	4,133.61	4.47	-0.49	0.103
91.42	-31.66	-7.06	0.00	-383.52	0.00	383.52	4,018.47	2,009.23	8,157.89	4,085.01	4.62	-0.50	0.102
95.00	-30.06	-6.97	0.00	-358.21	0.00	358.21	3,971.06	1,985.53	7,913.50	3,962.63	5.00	-0.52	0.098
98.00	-28.75	-6.90	0.00	-337.30	0.00	337.30	3,074.73	1,537.36	6,126.65	3,067.88	5.34	-0.54	0.119
100.00	-28.26	-6.82	0.00	-323.49	0.00	323.49	3,057.08	1,528.54	6,027.83	3,018.39	5.56	-0.55	0.116
105.00	-27.07	-6.70	0.00	-289.37	0.00	289.37	3,011.64	1,505.82	5,781.46	2,895.03	6.16	-0.58	0.109
110.00	-25.90	-6.58	0.00	-255.87	0.00	255.87	2,964.33	1,482.16	5,536.34	2,772.28	6.79	-0.61	0.101
115.00	-24.75	-6.48	0.00	-222.97	0.00	222.97	2,915.15	1,457.57	5,292.74	2,650.30	7.45	-0.64	0.093
118.00	-23.74	-6.18	0.00	-202.59	0.00	202.59	2,884.74	1,442.37	5,147.43	2,577.54	7.85	-0.66	0.087
120.00	-21.80	-5.90	0.00	-190.24	0.00	190.24	2,864.09	1,432.05	5,050.96	2,529.23	8.13	-0.67	0.083
122.00	-20.82	-5.70	0.00	-178.45	0.00	178.45	2,843.15	1,421.57	4,954.82	2,481.09	8.42	-0.68	0.079
125.00	-20.17	-5.62	0.00	-161.36	0.00	161.36	2,811.17	1,405.58	4,811.29	2,409.22	8.85	-0.70	0.074
128.00	-19.45	-5.45	0.00	-144.37	0.00	144.37	2,778.51	1,389.26	4,668.62	2,337.78	9.29	-0.71	0.069
130.00	-19.04	-5.37	0.00	-133.47	0.00	133.47	2,756.37	1,378.18	4,574.03	2,290.41	9.59	-0.72	0.065
135.00	-18.02	-5.27	0.00	-106.60	0.00	106.60	2,699.70	1,349.85	4,339.46	2,172.95	10.36	-0.74	0.056
138.00	-14.57	-3.98	0.00	-90.78	0.00	90.78	2,664.80	1,332.40	4,200.13	2,103.19	10.83	-0.75	0.049
139.33	-14.33	-3.96	0.00	-85.47	0.00	85.47	2,649.07	1,324.54	4,138.57	2,072.36	11.04	-0.76	0.047
140.00	-14.14	-3.90	0.00	-82.83	0.00	82.83	2,641.16	1,320.58	4,107.88	2,056.99	11.14	-0.76	0.046
144.42	-12.90	-3.83	0.00	-65.59	0.00	65.59	1,927.04	963.52	2,958.38	1,481.39	11.85	-0.77	0.051
145.00	-12.81	-3.79	0.00	-63.35	0.00	63.35	1,922.70	961.35	2,940.04	1,472.21	11.95	-0.77	0.050
148.00	-9.59	-2.89	0.00	-51.51	0.00	51.51	1,899.96	949.98	2,845.93	1,425.08	12.44	-0.78	0.041
150.00	-9.32	-2.81	0.00	-45.74	0.00	45.74	1,884.42	942.21	2,783.42	1,393.78	12.77	-0.79	0.038
155.00	-8.65	-2.70	0.00	-31.68	0.00	31.68	1,844.28	922.14	2,628.12	1,316.02	13.60	-0.80	0.029
160.00	-4.25	-1.24	0.00	-18.18	0.00	18.18	1,802.26	901.13	2,474.43	1,239.06	14.44	-0.81	0.017
165.00	-3.72	-1.14	0.00	-12.01	0.00	12.01	1,758.37	879.19	2,322.64	1,163.05	15.30	-0.82	0.012
167.00	-2.97	-0.99	0.00	-9.72	0.00	9.72	1,740.29	870.15	2,262.53	1,132.94	15.64	-0.82	0.010
170.00	-2.69	-0.95	0.00	-6.75	0.00	6.75	1,712.61	856.30	2,173.05	1,088.14	16.15	-0.82	0.008
171.00	-2.33	-0.71	0.00	-5.80	0.00	5.80	1,703.23	851.62	2,143.42	1,073.30	16.32	-0.82	0.007
175.00	-1.97	-0.64	0.00	-2.95	0.00	2.95	1,664.97	832.49	2,025.94	1,014.48	17.01	-0.82	0.004
178.50	0.00	-0.61	0.00	-0.71	0.00	0.71	1,630.52	815.26	1,924.60	963.73	17.61	-0.82	0.001

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.21	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	1.85	
Total Unfactored Dead Load:	65.59	k
Seismic Base Shear (E):	2.00	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM **Seismic Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
48	176.75	310	4,519	0.013	27	384
47	173.00	365	5,106	0.015	30	452
46	170.50	93	1,274	0.004	8	116
45	168.50	285	3,793	0.011	22	353
44	166.00	193	2,504	0.007	15	239
43	162.50	513	6,392	0.019	38	635
42	157.50	653	7,684	0.023	46	809
41	152.50	670	7,426	0.022	44	830
40	149.00	273	2,896	0.009	17	338
39	146.50	453	4,661	0.014	28	561
38	144.71	89	893	0.003	5	110
37	142.21	1,236	12,034	0.036	71	1,532
36	139.67	189	1,781	0.005	11	234
35	138.67	241	2,238	0.007	13	298
34	136.50	600	5,410	0.016	32	743
33	132.50	1,016	8,678	0.026	51	1,259
32	129.00	412	3,351	0.010	20	511
31	126.50	641	5,021	0.015	30	794
30	123.50	648	4,860	0.014	29	803
29	121.00	436	3,150	0.009	19	541
28	119.00	440	3,078	0.009	18	545
27	116.50	676	4,549	0.013	27	838
26	112.50	1,147	7,235	0.021	43	1,422

25	107.50	1,168	6,774	0.020	40	1,448
24	102.50	1,190	6,314	0.019	37	1,474
23	99.00	482	2,398	0.007	14	597
22	96.50	1,314	6,235	0.018	37	1,628
21	93.21	1,591	7,082	0.021	42	1,971
20	90.71	395	1,673	0.005	10	490
19	87.50	1,412	5,589	0.017	33	1,749
18	82.50	1,437	5,102	0.015	30	1,781
17	77.50	1,463	4,625	0.014	27	1,812
16	72.50	1,488	4,159	0.012	25	1,844
15	67.50	1,514	3,705	0.011	22	1,875
14	62.50	1,539	3,267	0.010	19	1,907
13	57.50	1,564	2,846	0.008	17	1,938
12	54.00	633	1,025	0.003	6	784
11	51.50	1,788	2,651	0.008	16	2,215
10	47.50	3,024	3,861	0.011	23	3,747
9	42.50	1,830	1,901	0.006	11	2,267
8	37.50	1,860	1,532	0.005	9	2,304
7	32.50	1,889	1,194	0.004	7	2,341
6	27.50	1,919	890	0.003	5	2,378
5	22.50	1,949	623	0.002	4	2,414
4	17.50	1,979	397	0.001	2	2,452
3	12.50	2,009	216	0.001	1	2,489
2	7.50	2,038	85	0.000	1	2,526
1	2.50	2,068	11	0.000	0	2,563
Decibel DB844H90E-XY	178.50	168	2,492	0.007	15	208
Flat Low Profile Pla	178.50	1,500	22,248	0.066	132	1,859
DragonWave Horizon C	171.00	21	290	0.001	2	26
NextNet BTS-2500	171.00	105	1,438	0.004	9	130
Argus LLPX310R	171.00	86	1,175	0.003	7	106
DragonWave A-ANT-11G	171.00	27	370	0.001	2	33
DragonWave A-ANT-18G	171.00	27	371	0.001	2	34
Side Arms	167.00	560	7,342	0.022	43	694
Generic 18" x 12" Ju	165.00	15	192	0.001	1	19
Powerwave Allgon 702	160.00	13	160	0.000	1	16
Kaelus DBCT108F1V92-	160.00	125	1,515	0.004	9	155
Powerwave Allgon LGP	160.00	85	1,025	0.003	6	105
Raycap DC6-48-60-18-	160.00	40	484	0.001	3	50
Ericsson RRUS 4426 B	160.00	145	1,758	0.005	10	180
Ericsson RRUS 4478 B	160.00	178	2,158	0.006	13	221
Ericsson RRUS 4478 B	160.00	168	2,038	0.006	12	209
Ericsson RRUS 32 B2	160.00	159	1,926	0.006	11	197
Ericsson RRUS 11 (Ba	160.00	152	1,842	0.005	11	188
Ericsson RRUS-32 (77	160.00	231	2,798	0.008	17	286
Raycap DC6-48-60-18-	160.00	16	194	0.001	1	20
Powerwave Allgon 777	160.00	105	1,272	0.004	8	130
Quintel QS66512-2	160.00	333	4,033	0.012	24	413
CCI OPA-65R-LCUU-H6	160.00	219	2,652	0.008	16	271
Kathrein Scala 80010	160.00	293	3,546	0.011	21	363
Flat Low Profile Pla	160.00	1,500	18,166	0.054	108	1,859
Ericsson KRY 112 144	148.00	33	346	0.001	2	41
Ericsson Radio 4449	148.00	222	2,327	0.007	14	275
Ericsson AIR 21, 1.3	148.00	249	2,610	0.008	15	309
Ericsson AIR32 B66Aa	148.00	397	4,157	0.012	25	491
RFS APXVAARR24_43-U-	148.00	384	4,022	0.012	24	475
T-Arm with Platform	148.00	1,500	15,723	0.047	93	1,859
Nokia B5 RRH4x40-850	138.00	146	1,340	0.004	8	180
Alcatel-Lucent RRH 2	138.00	119	1,094	0.003	6	147
Alcatel-Lucent RRH2x	138.00	170	1,566	0.005	9	211
Alcatel-Lucent B66A	138.00	170	1,569	0.005	9	211
RFS DB-T1-6Z-8AB-0Z	138.00	88	810	0.002	5	109
Commscope SBNHH-1D65	138.00	152	1,401	0.004	8	188
Commscope JAHH-65B-R	138.00	364	3,348	0.010	20	451
Amphenol Antel LPA-8	138.00	162	1,492	0.004	9	201

Round Low Profile Pl	138.00	1,500	13,812	0.041	82	1,859
Nortel NTGB01MA	128.00	1	8	0.000	0	1
RFS APXV18-206517S-C	128.00	79	634	0.002	4	98
Alcatel-Lucent 800 M	122.00	159	1,165	0.003	7	197
Alcatel-Lucent 1900	122.00	180	1,319	0.004	8	223
Alcatel-Lucent TD-RR	122.00	210	1,539	0.005	9	260
Round Low Profile Pl	120.00	1,500	10,661	0.032	63	1,859
RFS APXV9TM14-ALU-I2	118.00	165	1,139	0.003	7	205
RFS APXVSPP18-C-A20	118.00	171	1,178	0.003	7	212
PCTEL GPS-TMG-HR-26N	20.00	1	0	0.000	0	1
Standoff	20.00	75	19	0.000	0	93
		65,590	337,455	1.000	1,999	81,269

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
48	176.75	310	4,519	0.013	27	267
47	173.00	365	5,106	0.015	30	314
46	170.50	93	1,274	0.004	8	80
45	168.50	285	3,793	0.011	22	245
44	166.00	193	2,504	0.007	15	166
43	162.50	513	6,392	0.019	38	442
42	157.50	653	7,684	0.023	46	562
41	152.50	670	7,426	0.022	44	577
40	149.00	273	2,896	0.009	17	235
39	146.50	453	4,661	0.014	28	390
38	144.71	89	893	0.003	5	76
37	142.21	1,236	12,034	0.036	71	1,064
36	139.67	189	1,781	0.005	11	163
35	138.67	241	2,238	0.007	13	207
34	136.50	600	5,410	0.016	32	516
33	132.50	1,016	8,678	0.026	51	875
32	129.00	412	3,351	0.010	20	355
31	126.50	641	5,021	0.015	30	552
30	123.50	648	4,860	0.014	29	558
29	121.00	436	3,150	0.009	19	376
28	119.00	440	3,078	0.009	18	379
27	116.50	676	4,549	0.013	27	582
26	112.50	1,147	7,235	0.021	43	988
25	107.50	1,168	6,774	0.020	40	1,006
24	102.50	1,190	6,314	0.019	37	1,024
23	99.00	482	2,398	0.007	14	415
22	96.50	1,314	6,235	0.018	37	1,131
21	93.21	1,591	7,082	0.021	42	1,370
20	90.71	395	1,673	0.005	10	340
19	87.50	1,412	5,589	0.017	33	1,215
18	82.50	1,437	5,102	0.015	30	1,237
17	77.50	1,463	4,625	0.014	27	1,259
16	72.50	1,488	4,159	0.012	25	1,281
15	67.50	1,514	3,705	0.011	22	1,303
14	62.50	1,539	3,267	0.010	19	1,325
13	57.50	1,564	2,846	0.008	17	1,347
12	54.00	633	1,025	0.003	6	545
11	51.50	1,788	2,651	0.008	16	1,539
10	47.50	3,024	3,861	0.011	23	2,603
9	42.50	1,830	1,901	0.006	11	1,575
8	37.50	1,860	1,532	0.005	9	1,601
7	32.50	1,889	1,194	0.004	7	1,627
6	27.50	1,919	890	0.003	5	1,652

5	22.50	1,949	623	0.002	4	1,678
4	17.50	1,979	397	0.001	2	1,704
3	12.50	2,009	216	0.001	1	1,729
2	7.50	2,038	85	0.000	1	1,755
1	2.50	2,068	11	0.000	0	1,781
Decibel DB844H90E-XY	178.50	168	2,492	0.007	15	145
Flat Low Profile Pla	178.50	1,500	22,248	0.066	132	1,291
DragonWave Horizon C	171.00	21	290	0.001	2	18
NextNet BTS-2500	171.00	105	1,438	0.004	9	90
Argus LLPX310R	171.00	86	1,175	0.003	7	74
DragonWave A-ANT-11G	171.00	27	370	0.001	2	23
DragonWave A-ANT-18G	171.00	27	371	0.001	2	23
Side Arms	167.00	560	7,342	0.022	43	482
Generic 18" x 12" Ju	165.00	15	192	0.001	1	13
Powerwave Allgon 702	160.00	13	160	0.000	1	11
Kaelus DBCT108F1V92-	160.00	125	1,515	0.004	9	108
Powerwave Allgon LGP	160.00	85	1,025	0.003	6	73
Raycap DC6-48-60-18-	160.00	40	484	0.001	3	34
Ericsson RRUS 4426 B	160.00	145	1,758	0.005	10	125
Ericsson RRUS 4478 B	160.00	178	2,158	0.006	13	153
Ericsson RRUS 4478 B	160.00	168	2,038	0.006	12	145
Ericsson RRUS 32 B2	160.00	159	1,926	0.006	11	137
Ericsson RRUS 11 (Ba	160.00	152	1,842	0.005	11	131
Ericsson RRUS-32 (77	160.00	231	2,798	0.008	17	199
Raycap DC6-48-60-18-	160.00	16	194	0.001	1	14
Powerwave Allgon 777	160.00	105	1,272	0.004	8	90
Quintel QS66512-2	160.00	333	4,033	0.012	24	287
CCI OPA-65R-LCUU-H6	160.00	219	2,652	0.008	16	189
Kathrein Scala 80010	160.00	293	3,546	0.011	21	252
Flat Low Profile Pla	160.00	1,500	18,166	0.054	108	1,291
Ericsson KRY 112 144	148.00	33	346	0.001	2	28
Ericsson Radio 4449	148.00	222	2,327	0.007	14	191
Ericsson AIR 21, 1.3	148.00	249	2,610	0.008	15	214
Ericsson AIR32 B66Aa	148.00	397	4,157	0.012	25	341
RFS APXVAARR24_43-U-	148.00	384	4,022	0.012	24	330
T-Arm with Platform	148.00	1,500	15,723	0.047	93	1,291
Nokia B5 RRH4x40-850	138.00	146	1,340	0.004	8	125
Alcatel-Lucent RRH 2	138.00	119	1,094	0.003	6	102
Alcatel-Lucent RRH2x	138.00	170	1,566	0.005	9	146
Alcatel-Lucent B66A	138.00	170	1,569	0.005	9	147
RFS DB-T1-6Z-8AB-0Z	138.00	88	810	0.002	5	76
Commscope SBNHH-1D65	138.00	152	1,401	0.004	8	131
Commscope JAHH-65B-R	138.00	364	3,348	0.010	20	313
Amphenol Antel LPA-8	138.00	162	1,492	0.004	9	139
Round Low Profile Pl	138.00	1,500	13,812	0.041	82	1,291
Nortel NTGB01MA	128.00	1	8	0.000	0	1
RFS APXV18-206517S-C	128.00	79	634	0.002	4	68
Alcatel-Lucent 800 M	122.00	159	1,165	0.003	7	137
Alcatel-Lucent 1900	122.00	180	1,319	0.004	8	155
Alcatel-Lucent TD-RR	122.00	210	1,539	0.005	9	181
Round Low Profile Pl	120.00	1,500	10,661	0.032	63	1,291
RFS APXV9TM14-ALU-I2	118.00	165	1,139	0.003	7	142
RFS APXVSPP18-C-A20	118.00	171	1,178	0.003	7	147
PCTEL GPS-TMG-HR-26N	20.00	1	0	0.000	0	1
Standoff	20.00	75	19	0.000	0	65
		65,590	337,455	1.000	1,999	56,471

Load Case (1.2 + 0.2Sds) * DL + E ELFM **Seismic Equivalent Lateral Forces Method**

Calculated Forces

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 (deg)	Ratio
0.00	-78.71	-2.00	0.00	-273.87	0.00	273.87	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.043
5.00	-76.18	-2.01	0.00	-263.86	0.00	263.86	6,145.05	3,072.53	17,781.1	8,903.77	0.00	-0.01	0.042
10.00	-73.69	-2.02	0.00	-253.81	0.00	253.81	6,086.60	3,043.30	17,295.1	8,660.43	0.01	-0.01	0.041
15.00	-71.24	-2.02	0.00	-243.74	0.00	243.74	6,026.28	3,013.14	16,810.0	8,417.51	0.03	-0.02	0.041
20.00	-68.73	-2.02	0.00	-233.63	0.00	233.63	5,964.08	2,982.04	16,326.1	8,175.18	0.05	-0.02	0.040
25.00	-66.35	-2.02	0.00	-223.52	0.00	223.52	5,900.01	2,950.01	15,843.6	7,933.57	0.08	-0.03	0.039
30.00	-64.01	-2.02	0.00	-213.40	0.00	213.40	5,834.07	2,917.04	15,362.8	7,692.84	0.12	-0.04	0.039
35.00	-61.71	-2.02	0.00	-203.28	0.00	203.28	5,766.26	2,883.13	14,884.1	7,453.12	0.16	-0.04	0.038
40.00	-59.44	-2.01	0.00	-193.19	0.00	193.19	5,696.58	2,848.29	14,407.7	7,214.56	0.21	-0.05	0.037
45.00	-55.69	-1.99	0.00	-183.13	0.00	183.13	5,625.02	2,812.51	13,933.9	6,977.32	0.26	-0.06	0.036
50.00	-53.48	-1.98	0.00	-173.16	0.00	173.16	5,551.60	2,775.80	13,463.0	6,741.53	0.33	-0.06	0.035
53.00	-52.69	-1.98	0.00	-167.22	0.00	167.22	4,466.37	2,233.18	10,853.4	5,434.80	0.37	-0.07	0.043
55.00	-50.75	-1.96	0.00	-163.27	0.00	163.27	4,445.78	2,222.89	10,710.8	5,363.40	0.39	-0.07	0.042
60.00	-48.85	-1.95	0.00	-153.47	0.00	153.47	4,392.99	2,196.49	10,355.0	5,185.21	0.47	-0.08	0.041
65.00	-46.97	-1.93	0.00	-143.74	0.00	143.74	4,338.33	2,169.16	10,000.3	5,007.61	0.56	-0.08	0.040
70.00	-45.13	-1.91	0.00	-134.10	0.00	134.10	4,281.80	2,140.90	9,647.15	4,830.75	0.65	-0.09	0.038
75.00	-43.32	-1.88	0.00	-124.57	0.00	124.57	4,223.39	2,111.70	9,295.72	4,654.77	0.75	-0.10	0.037
80.00	-41.53	-1.85	0.00	-115.17	0.00	115.17	4,163.12	2,081.56	8,946.35	4,479.82	0.86	-0.11	0.036
85.00	-39.79	-1.82	0.00	-105.90	0.00	105.90	4,100.97	2,050.48	8,599.32	4,306.05	0.98	-0.11	0.034
90.00	-39.30	-1.81	0.00	-96.80	0.00	96.80	4,036.95	2,018.47	8,254.94	4,133.61	1.10	-0.12	0.033
91.42	-37.32	-1.77	0.00	-94.23	0.00	94.23	4,018.47	2,009.23	8,157.89	4,085.01	1.14	-0.12	0.032
95.00	-35.70	-1.73	0.00	-87.89	0.00	87.89	3,971.06	1,985.53	7,913.50	3,962.63	1.23	-0.13	0.031
98.00	-35.10	-1.72	0.00	-82.69	0.00	82.69	3,074.73	1,537.36	6,126.65	3,067.88	1.31	-0.13	0.038
100.00	-33.62	-1.68	0.00	-79.25	0.00	79.25	3,057.08	1,528.54	6,027.83	3,018.39	1.37	-0.14	0.037
105.00	-32.18	-1.64	0.00	-70.85	0.00	70.85	3,011.64	1,505.82	5,781.46	2,895.03	1.52	-0.14	0.035
110.00	-30.76	-1.60	0.00	-62.64	0.00	62.64	2,964.33	1,482.16	5,536.34	2,772.28	1.67	-0.15	0.033
115.00	-29.92	-1.57	0.00	-54.64	0.00	54.64	2,915.15	1,457.57	5,292.74	2,650.30	1.83	-0.16	0.031
118.00	-28.96	-1.54	0.00	-49.92	0.00	49.92	2,884.74	1,442.37	5,147.43	2,577.54	1.93	-0.16	0.029
120.00	-26.56	-1.45	0.00	-46.84	0.00	46.84	2,864.09	1,432.05	5,050.96	2,529.23	2.00	-0.17	0.028
122.00	-25.07	-1.40	0.00	-43.94	0.00	43.94	2,843.15	1,421.57	4,954.82	2,481.09	2.07	-0.17	0.027
125.00	-24.28	-1.37	0.00	-39.75	0.00	39.75	2,811.17	1,405.58	4,811.29	2,409.22	2.18	-0.17	0.025
128.00	-23.67	-1.34	0.00	-35.65	0.00	35.65	2,778.51	1,389.26	4,668.62	2,337.78	2.29	-0.17	0.024
130.00	-22.41	-1.29	0.00	-32.97	0.00	32.97	2,756.37	1,378.18	4,574.03	2,290.41	2.36	-0.18	0.023
135.00	-21.67	-1.26	0.00	-26.52	0.00	26.52	2,699.70	1,349.85	4,339.46	2,172.95	2.55	-0.18	0.020
138.00	-17.81	-1.07	0.00	-22.76	0.00	22.76	2,664.80	1,332.40	4,200.13	2,103.19	2.66	-0.19	0.018
139.33	-17.58	-1.06	0.00	-21.32	0.00	21.32	2,649.07	1,324.54	4,138.57	2,072.36	2.72	-0.19	0.017
140.00	-16.05	-0.99	0.00	-20.62	0.00	20.62	2,641.16	1,320.58	4,107.88	2,056.99	2.74	-0.19	0.016
144.42	-15.94	-0.98	0.00	-16.26	0.00	16.26	1,927.04	963.52	2,958.38	1,481.39	2.92	-0.19	0.019
145.00	-15.38	-0.95	0.00	-15.68	0.00	15.68	1,922.70	961.35	2,940.04	1,472.21	2.94	-0.19	0.019
148.00	-11.59	-0.75	0.00	-12.82	0.00	12.82	1,899.96	949.98	2,845.93	1,425.08	3.06	-0.19	0.015
150.00	-10.76	-0.70	0.00	-11.32	0.00	11.32	1,884.42	942.21	2,783.42	1,393.78	3.14	-0.19	0.014
155.00	-9.95	-0.66	0.00	-7.80	0.00	7.80	1,844.28	922.14	2,628.12	1,316.02	3.35	-0.20	0.011
160.00	-4.65	-0.33	0.00	-4.52	0.00	4.52	1,802.26	901.13	2,474.43	1,239.06	3.56	-0.20	0.006
165.00	-4.39	-0.31	0.00	-2.86	0.00	2.86	1,758.37	879.19	2,322.64	1,163.05	3.77	-0.20	0.005
167.00	-3.35	-0.24	0.00	-2.24	0.00	2.24	1,740.29	870.15	2,262.53	1,132.94	3.85	-0.20	0.004
170.00	-3.23	-0.24	0.00	-1.50	0.00	1.50	1,712.61	856.30	2,173.05	1,088.14	3.98	-0.20	0.003
171.00	-2.45	-0.18	0.00	-1.27	0.00	1.27	1,703.23	851.62	2,143.42	1,073.30	4.02	-0.20	0.003
175.00	-2.07	-0.15	0.00	-0.54	0.00	0.54	1,664.97	832.49	2,025.94	1,014.48	4.19	-0.20	0.002
178.50	0.00	-0.15	0.00	0.00	0.00	0.00	1,630.52	815.26	1,924.60	963.73	4.34	-0.20	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL) Equivalent Lateral Forces Method**

Calculated Forces

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 (deg)	Ratio
0.00	-54.69	-2.00	0.00	-270.85	0.00	270.85	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.038
5.00	-52.93	-2.01	0.00	-260.85	0.00	260.85	6,145.05	3,072.53	17,781.1	8,903.77	0.00	-0.01	0.038
10.00	-51.21	-2.01	0.00	-250.82	0.00	250.82	6,086.60	3,043.30	17,295.1	8,660.43	0.01	-0.01	0.037
15.00	-49.50	-2.01	0.00	-240.77	0.00	240.77	6,026.28	3,013.14	16,810.0	8,417.51	0.03	-0.02	0.037
20.00	-47.76	-2.01	0.00	-230.71	0.00	230.71	5,964.08	2,982.04	16,326.1	8,175.18	0.05	-0.02	0.036
25.00	-46.11	-2.01	0.00	-220.65	0.00	220.65	5,900.01	2,950.01	15,843.6	7,933.57	0.08	-0.03	0.036
30.00	-44.48	-2.01	0.00	-210.59	0.00	210.59	5,834.07	2,917.04	15,362.8	7,692.84	0.11	-0.04	0.035
35.00	-42.88	-2.00	0.00	-200.55	0.00	200.55	5,766.26	2,883.13	14,884.1	7,453.12	0.16	-0.04	0.034
40.00	-41.30	-2.00	0.00	-190.53	0.00	190.53	5,696.58	2,848.29	14,407.7	7,214.56	0.20	-0.05	0.034
45.00	-38.70	-1.97	0.00	-180.55	0.00	180.55	5,625.02	2,812.51	13,933.9	6,977.32	0.26	-0.06	0.033
50.00	-37.16	-1.96	0.00	-170.68	0.00	170.68	5,551.60	2,775.80	13,463.0	6,741.53	0.32	-0.06	0.032
53.00	-36.61	-1.96	0.00	-164.80	0.00	164.80	4,466.37	2,233.18	10,853.4	5,434.80	0.36	-0.07	0.039
55.00	-35.27	-1.94	0.00	-160.89	0.00	160.89	4,445.78	2,222.89	10,710.8	5,363.40	0.39	-0.07	0.038
60.00	-33.94	-1.92	0.00	-151.18	0.00	151.18	4,392.99	2,196.49	10,355.0	5,185.21	0.47	-0.08	0.037
65.00	-32.64	-1.90	0.00	-141.56	0.00	141.56	4,338.33	2,169.16	10,000.3	5,007.61	0.55	-0.08	0.036
70.00	-31.36	-1.88	0.00	-132.04	0.00	132.04	4,281.80	2,140.90	9,647.15	4,830.75	0.64	-0.09	0.035
75.00	-30.10	-1.86	0.00	-122.63	0.00	122.63	4,223.39	2,111.70	9,295.72	4,654.77	0.74	-0.10	0.033
80.00	-28.86	-1.83	0.00	-113.35	0.00	113.35	4,163.12	2,081.56	8,946.35	4,479.82	0.85	-0.11	0.032
85.00	-27.64	-1.80	0.00	-104.21	0.00	104.21	4,100.97	2,050.48	8,599.32	4,306.05	0.96	-0.11	0.031
90.00	-27.30	-1.79	0.00	-95.23	0.00	95.23	4,036.95	2,018.47	8,254.94	4,133.61	1.08	-0.12	0.030
91.42	-25.93	-1.74	0.00	-92.70	0.00	92.70	4,018.47	2,009.23	8,157.89	4,085.01	1.12	-0.12	0.029
95.00	-24.80	-1.71	0.00	-86.45	0.00	86.45	3,971.06	1,985.53	7,913.50	3,962.63	1.21	-0.13	0.028
98.00	-24.39	-1.69	0.00	-81.33	0.00	81.33	3,074.73	1,537.36	6,126.65	3,067.88	1.30	-0.13	0.034
100.00	-23.36	-1.66	0.00	-77.95	0.00	77.95	3,057.08	1,528.54	6,027.83	3,018.39	1.35	-0.13	0.033
105.00	-22.36	-1.62	0.00	-69.67	0.00	69.67	3,011.64	1,505.82	5,781.46	2,895.03	1.50	-0.14	0.031
110.00	-21.37	-1.57	0.00	-61.59	0.00	61.59	2,964.33	1,482.16	5,536.34	2,772.28	1.65	-0.15	0.029
115.00	-20.79	-1.55	0.00	-53.73	0.00	53.73	2,915.15	1,457.57	5,292.74	2,650.30	1.81	-0.16	0.027
118.00	-20.12	-1.51	0.00	-49.09	0.00	49.09	2,884.74	1,442.37	5,147.43	2,577.54	1.91	-0.16	0.026
120.00	-18.45	-1.43	0.00	-46.06	0.00	46.06	2,864.09	1,432.05	5,050.96	2,529.23	1.97	-0.16	0.025
122.00	-17.42	-1.37	0.00	-43.20	0.00	43.20	2,843.15	1,421.57	4,954.82	2,481.09	2.04	-0.17	0.024
125.00	-16.87	-1.34	0.00	-39.08	0.00	39.08	2,811.17	1,405.58	4,811.29	2,409.22	2.15	-0.17	0.022
128.00	-16.45	-1.32	0.00	-35.05	0.00	35.05	2,778.51	1,389.26	4,668.62	2,337.78	2.26	-0.17	0.021
130.00	-15.57	-1.27	0.00	-32.41	0.00	32.41	2,756.37	1,378.18	4,574.03	2,290.41	2.33	-0.17	0.020
135.00	-15.05	-1.23	0.00	-26.08	0.00	26.08	2,699.70	1,349.85	4,339.46	2,172.95	2.51	-0.18	0.018
138.00	-12.38	-1.06	0.00	-22.38	0.00	22.38	2,664.80	1,332.40	4,200.13	2,103.19	2.63	-0.18	0.015
139.33	-12.21	-1.04	0.00	-20.97	0.00	20.97	2,649.07	1,324.54	4,138.57	2,072.36	2.68	-0.18	0.015
140.00	-11.15	-0.97	0.00	-20.28	0.00	20.28	2,641.16	1,320.58	4,107.88	2,056.99	2.70	-0.18	0.014
144.42	-11.07	-0.97	0.00	-15.99	0.00	15.99	1,927.04	963.52	2,958.38	1,481.39	2.88	-0.19	0.017
145.00	-10.68	-0.94	0.00	-15.43	0.00	15.43	1,922.70	961.35	2,940.04	1,472.21	2.90	-0.19	0.016
148.00	-8.05	-0.74	0.00	-12.62	0.00	12.62	1,899.96	949.98	2,845.93	1,425.08	3.02	-0.19	0.013
150.00	-7.47	-0.69	0.00	-11.14	0.00	11.14	1,884.42	942.21	2,783.42	1,393.78	3.10	-0.19	0.012
155.00	-6.91	-0.65	0.00	-7.68	0.00	7.68	1,844.28	922.14	2,628.12	1,316.02	3.30	-0.19	0.010
160.00	-3.23	-0.33	0.00	-4.45	0.00	4.45	1,802.26	901.13	2,474.43	1,239.06	3.51	-0.20	0.005
165.00	-3.05	-0.31	0.00	-2.82	0.00	2.82	1,758.37	879.19	2,322.64	1,163.05	3.71	-0.20	0.004
167.00	-2.33	-0.24	0.00	-2.20	0.00	2.20	1,740.29	870.15	2,262.53	1,132.94	3.80	-0.20	0.003
170.00	-2.25	-0.23	0.00	-1.48	0.00	1.48	1,712.61	856.30	2,173.05	1,088.14	3.92	-0.20	0.003
171.00	-1.70	-0.18	0.00	-1.25	0.00	1.25	1,703.23	851.62	2,143.42	1,073.30	3.96	-0.20	0.002
175.00	-1.44	-0.15	0.00	-0.53	0.00	0.53	1,664.97	832.49	2,025.94	1,014.48	4.13	-0.20	0.001
178.50	0.00	-0.15	0.00	0.00	0.00	0.00	1,630.52	815.26	1,924.60	963.73	4.27	-0.20	0.000

Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.21
Redundancy Factor (p):	1.00

Load Case (1.2 + 0.2Sds) * DL + E EMAM **Seismic Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
48	176.75	310	1.853	1.791	1.071	0.348	72	384
47	173.00	365	1.775	1.429	0.935	0.299	73	452
46	170.50	93	1.724	1.217	0.853	0.269	17	116
45	168.50	285	1.684	1.063	0.790	0.245	47	353
44	166.00	193	1.635	0.889	0.718	0.217	28	239
43	162.50	513	1.566	0.678	0.625	0.181	62	635
42	157.50	653	1.471	0.433	0.509	0.134	58	809
41	152.50	670	1.380	0.246	0.411	0.092	41	830
40	149.00	273	1.317	0.145	0.351	0.066	12	338
39	146.50	453	1.273	0.085	0.313	0.050	15	561
38	144.71	89	1.242	0.048	0.287	0.039	2	110
37	142.21	1,236	1.200	0.004	0.254	0.025	20	1,532
36	139.67	189	1.157	-0.032	0.224	0.012	1	234
35	138.67	241	1.141	-0.044	0.213	0.007	1	298
34	136.50	600	1.105	-0.067	0.190	-0.002	-1	743
33	132.50	1,016	1.041	-0.097	0.153	-0.017	-12	1,259
32	129.00	412	0.987	-0.113	0.125	-0.027	-7	511
31	126.50	641	0.949	-0.119	0.108	-0.032	-14	794
30	123.50	648	0.905	-0.122	0.089	-0.037	-16	803
29	121.00	436	0.868	-0.121	0.076	-0.039	-11	541
28	119.00	440	0.840	-0.118	0.066	-0.040	-12	545
27	116.50	676	0.805	-0.113	0.055	-0.040	-18	838
26	112.50	1,147	0.751	-0.101	0.041	-0.038	-29	1,422
25	107.50	1,168	0.685	-0.082	0.027	-0.031	-24	1,448
24	102.50	1,190	0.623	-0.061	0.017	-0.020	-16	1,474
23	99.00	482	0.581	-0.046	0.013	-0.011	-3	597
22	96.50	1,314	0.552	-0.035	0.010	-0.004	-3	1,628
21	93.21	1,591	0.515	-0.022	0.008	0.005	5	1,971
20	90.71	395	0.488	-0.012	0.007	0.012	3	490
19	87.50	1,412	0.454	0.000	0.006	0.020	19	1,749
18	82.50	1,437	0.404	0.017	0.006	0.031	30	1,781
17	77.50	1,463	0.356	0.031	0.008	0.039	38	1,812
16	72.50	1,488	0.312	0.043	0.011	0.045	45	1,844
15	67.50	1,514	0.270	0.052	0.015	0.049	49	1,875

14	62.50	1,539	0.232	0.058	0.019	0.051	52	1,907
13	57.50	1,564	0.196	0.063	0.024	0.052	54	1,938
12	54.00	633	0.173	0.066	0.027	0.051	22	784
11	51.50	1,788	0.157	0.067	0.029	0.051	61	2,215
10	47.50	3,024	0.134	0.069	0.032	0.051	102	3,747
9	42.50	1,830	0.107	0.071	0.036	0.050	60	2,267
8	37.50	1,860	0.083	0.072	0.039	0.048	60	2,304
7	32.50	1,889	0.063	0.072	0.041	0.047	60	2,341
6	27.50	1,919	0.045	0.071	0.042	0.046	59	2,378
5	22.50	1,949	0.030	0.068	0.041	0.044	57	2,414
4	17.50	1,979	0.018	0.063	0.037	0.041	54	2,452
3	12.50	2,009	0.009	0.054	0.031	0.036	48	2,489
2	7.50	2,038	0.003	0.039	0.022	0.027	37	2,526
1	2.50	2,068	0.000	0.016	0.008	0.012	17	2,563
Decibel DB844H90E-XY	178.50	168	1.890	1.980	1.140	0.372	42	208
Flat Low Profile Pla	178.50	1,500	1.890	1.980	1.140	0.372	372	1,859
DragonWave Horizon C	171.00	21	1.735	1.257	0.869	0.275	4	26
NextNet BTS-2500	171.00	105	1.735	1.257	0.869	0.275	19	130
Argus LLPX310R	171.00	86	1.735	1.257	0.869	0.275	16	106
DragonWave A-ANT-11G	171.00	27	1.735	1.257	0.869	0.275	5	33
DragonWave A-ANT-18G	171.00	27	1.735	1.257	0.869	0.275	5	34
Side Arms	167.00	560	1.654	0.957	0.746	0.228	85	694
Generic 18" x 12" Ju	165.00	15	1.615	0.825	0.690	0.207	2	19
Powerwave Allgon 702	160.00	13	1.519	0.548	0.565	0.156	1	16
Kaelus DBCT108F1V92-	160.00	125	1.519	0.548	0.565	0.156	13	155
Powerwave Allgon LGP	160.00	85	1.519	0.548	0.565	0.156	9	105
Raycap DC6-48-60-18-	160.00	40	1.519	0.548	0.565	0.156	4	50
Ericsson RRUS 4426 B	160.00	145	1.519	0.548	0.565	0.156	15	180
Ericsson RRUS 4478 B	160.00	178	1.519	0.548	0.565	0.156	19	221
Ericsson RRUS 4478 B	160.00	168	1.519	0.548	0.565	0.156	18	209
Ericsson RRUS 32 B2	160.00	159	1.519	0.548	0.565	0.156	17	197
Ericsson RRUS 11 (Ba	160.00	152	1.519	0.548	0.565	0.156	16	188
Ericsson RRUS-32 (77	160.00	231	1.519	0.548	0.565	0.156	24	286
Raycap DC6-48-60-18-	160.00	16	1.519	0.548	0.565	0.156	2	20
Powerwave Allgon 777	160.00	105	1.519	0.548	0.565	0.156	11	130
Quintel QS66512-2	160.00	333	1.519	0.548	0.565	0.156	35	413
CCI OPA-65R-LCUU-H6	160.00	219	1.519	0.548	0.565	0.156	23	271
Kathrein Scala 80010	160.00	293	1.519	0.548	0.565	0.156	31	363
Flat Low Profile Pla	160.00	1,500	1.519	0.548	0.565	0.156	156	1,859
Ericsson KRY 112 144	148.00	33	1.299	0.120	0.335	0.060	1	41
Ericsson Radio 4449	148.00	222	1.299	0.120	0.335	0.060	9	275
Ericsson AIR 21, 1.3	148.00	249	1.299	0.120	0.335	0.060	10	309
Ericsson AIR32 B66Aa	148.00	397	1.299	0.120	0.335	0.060	16	491
RFS APXVAARR24_43-U-	148.00	384	1.299	0.120	0.335	0.060	15	475
T-Arm with Platform	148.00	1,500	1.299	0.120	0.335	0.060	60	1,859
Nokia B5 RRH4x40-850	138.00	146	1.130	-0.052	0.206	0.004	0	180
Alcatel-Lucent RRH 2	138.00	119	1.130	-0.052	0.206	0.004	0	147
Alcatel-Lucent RRH2x	138.00	170	1.130	-0.052	0.206	0.004	0	211
Alcatel-Lucent B66A	138.00	170	1.130	-0.052	0.206	0.004	0	211
RFS DB-T1-6Z-8AB-0Z	138.00	88	1.130	-0.052	0.206	0.004	0	109
Commscope SBNHH-	138.00	152	1.130	-0.052	0.206	0.004	0	188
Commscope JAHH-65B-	138.00	364	1.130	-0.052	0.206	0.004	1	451
Amphenol Antel LPA-8	138.00	162	1.130	-0.052	0.206	0.004	0	201
Round Low Profile Pl	138.00	1,500	1.130	-0.052	0.206	0.004	4	1,859
Nortel NTGB01MA	128.00	1	0.972	-0.116	0.118	-0.029	0	1
RFS APXV18-206517S-C	128.00	79	0.972	-0.116	0.118	-0.029	-2	98
Alcatel-Lucent 800 M	122.00	159	0.883	-0.121	0.081	-0.039	-4	197
Alcatel-Lucent 1900	122.00	180	0.883	-0.121	0.081	-0.039	-5	223
Alcatel-Lucent TD-RR	122.00	210	0.883	-0.121	0.081	-0.039	-5	260
Round Low Profile Pl	120.00	1,500	0.854	-0.120	0.071	-0.040	-40	1,859
RFS APXV9TM14-ALU-I2	118.00	165	0.826	-0.116	0.062	-0.041	-4	205
RFS APXVSPP18-C-A20	118.00	171	0.826	-0.116	0.062	-0.041	-5	212
PCTEL GPS-TMG-HR-	20.00	1	0.024	0.066	0.039	0.043	0	1
Standoff	20.00	75	0.024	0.066	0.039	0.043	2	93

		65,590	100.291	27.943	30.731	7.692	2,213	81,269

Load Case (0.9 - 0.2Sds) * DL + E EMAM **Seismic (Reduced DL) Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
48	176.75	310	1.853	1.791	1.071	0.348	72	267
47	173.00	365	1.775	1.429	0.935	0.299	73	314
46	170.50	93	1.724	1.217	0.853	0.269	17	80
45	168.50	285	1.684	1.063	0.790	0.245	47	245
44	166.00	193	1.635	0.889	0.718	0.217	28	166
43	162.50	513	1.566	0.678	0.625	0.181	62	442
42	157.50	653	1.471	0.433	0.509	0.134	58	562
41	152.50	670	1.380	0.246	0.411	0.092	41	577
40	149.00	273	1.317	0.145	0.351	0.066	12	235
39	146.50	453	1.273	0.085	0.313	0.050	15	390
38	144.71	89	1.242	0.048	0.287	0.039	2	76
37	142.21	1,236	1.200	0.004	0.254	0.025	20	1,064
36	139.67	189	1.157	-0.032	0.224	0.012	1	163
35	138.67	241	1.141	-0.044	0.213	0.007	1	207
34	136.50	600	1.105	-0.067	0.190	-0.002	-1	516
33	132.50	1,016	1.041	-0.097	0.153	-0.017	-12	875
32	129.00	412	0.987	-0.113	0.125	-0.027	-7	355
31	126.50	641	0.949	-0.119	0.108	-0.032	-14	552
30	123.50	648	0.905	-0.122	0.089	-0.037	-16	558
29	121.00	436	0.868	-0.121	0.076	-0.039	-11	376
28	119.00	440	0.840	-0.118	0.066	-0.040	-12	379
27	116.50	676	0.805	-0.113	0.055	-0.040	-18	582
26	112.50	1,147	0.751	-0.101	0.041	-0.038	-29	988
25	107.50	1,168	0.685	-0.082	0.027	-0.031	-24	1,006
24	102.50	1,190	0.623	-0.061	0.017	-0.020	-16	1,024
23	99.00	482	0.581	-0.046	0.013	-0.011	-3	415
22	96.50	1,314	0.552	-0.035	0.010	-0.004	-3	1,131
21	93.21	1,591	0.515	-0.022	0.008	0.005	5	1,370
20	90.71	395	0.488	-0.012	0.007	0.012	3	340
19	87.50	1,412	0.454	0.000	0.006	0.020	19	1,215
18	82.50	1,437	0.404	0.017	0.006	0.031	30	1,237
17	77.50	1,463	0.356	0.031	0.008	0.039	38	1,259
16	72.50	1,488	0.312	0.043	0.011	0.045	45	1,281
15	67.50	1,514	0.270	0.052	0.015	0.049	49	1,303
14	62.50	1,539	0.232	0.058	0.019	0.051	52	1,325
13	57.50	1,564	0.196	0.063	0.024	0.052	54	1,347
12	54.00	633	0.173	0.066	0.027	0.051	22	545
11	51.50	1,788	0.157	0.067	0.029	0.051	61	1,539
10	47.50	3,024	0.134	0.069	0.032	0.051	102	2,603
9	42.50	1,830	0.107	0.071	0.036	0.050	60	1,575
8	37.50	1,860	0.083	0.072	0.039	0.048	60	1,601
7	32.50	1,889	0.063	0.072	0.041	0.047	60	1,627
6	27.50	1,919	0.045	0.071	0.042	0.046	59	1,652
5	22.50	1,949	0.030	0.068	0.041	0.044	57	1,678
4	17.50	1,979	0.018	0.063	0.037	0.041	54	1,704
3	12.50	2,009	0.009	0.054	0.031	0.036	48	1,729
2	7.50	2,038	0.003	0.039	0.022	0.027	37	1,755
1	2.50	2,068	0.000	0.016	0.008	0.012	17	1,781
Decibel DB844H90E-XY	178.50	168	1.890	1.980	1.140	0.372	42	145
Flat Low Profile Pla	178.50	1,500	1.890	1.980	1.140	0.372	372	1,291
DragonWave Horizon C	171.00	21	1.735	1.257	0.869	0.275	4	18
NextNet BTS-2500	171.00	105	1.735	1.257	0.869	0.275	19	90
Argus LLPX310R	171.00	86	1.735	1.257	0.869	0.275	16	74

DragonWave A-ANT-11G	171.00	27	1.735	1.257	0.869	0.275	5	23
DragonWave A-ANT-18G	171.00	27	1.735	1.257	0.869	0.275	5	23
Side Arms	167.00	560	1.654	0.957	0.746	0.228	85	482
Generic 18" x 12" Ju	165.00	15	1.615	0.825	0.690	0.207	2	13
Powerwave Allgon 702	160.00	13	1.519	0.548	0.565	0.156	1	11
Kaelus DBCT108F1V92-	160.00	125	1.519	0.548	0.565	0.156	13	108
Powerwave Allgon LGP	160.00	85	1.519	0.548	0.565	0.156	9	73
Raycap DC6-48-60-18-	160.00	40	1.519	0.548	0.565	0.156	4	34
Ericsson RRUS 4426 B	160.00	145	1.519	0.548	0.565	0.156	15	125
Ericsson RRUS 4478 B	160.00	178	1.519	0.548	0.565	0.156	19	153
Ericsson RRUS 4478 B	160.00	168	1.519	0.548	0.565	0.156	18	145
Ericsson RRUS 32 B2	160.00	159	1.519	0.548	0.565	0.156	17	137
Ericsson RRUS 11 (Ba	160.00	152	1.519	0.548	0.565	0.156	16	131
Ericsson RRUS-32 (77	160.00	231	1.519	0.548	0.565	0.156	24	199
Raycap DC6-48-60-18-	160.00	16	1.519	0.548	0.565	0.156	2	14
Powerwave Allgon 777	160.00	105	1.519	0.548	0.565	0.156	11	90
Quintel QS66512-2	160.00	333	1.519	0.548	0.565	0.156	35	287
CCI OPA-65R-LCUU-H6	160.00	219	1.519	0.548	0.565	0.156	23	189
Kathrein Scala 80010	160.00	293	1.519	0.548	0.565	0.156	31	252
Flat Low Profile Pla	160.00	1,500	1.519	0.548	0.565	0.156	156	1,291
Ericsson KRY 112 144	148.00	33	1.299	0.120	0.335	0.060	1	28
Ericsson Radio 4449	148.00	222	1.299	0.120	0.335	0.060	9	191
Ericsson AIR 21, 1.3	148.00	249	1.299	0.120	0.335	0.060	10	214
Ericsson AIR32 B66Aa	148.00	397	1.299	0.120	0.335	0.060	16	341
RFS APXVAARR24_43-U-	148.00	384	1.299	0.120	0.335	0.060	15	330
T-Arm with Platform	148.00	1,500	1.299	0.120	0.335	0.060	60	1,291
Nokia B5 RRH4x40-850	138.00	146	1.130	-0.052	0.206	0.004	0	125
Alcatel-Lucent RRH 2	138.00	119	1.130	-0.052	0.206	0.004	0	102
Alcatel-Lucent RRH2x	138.00	170	1.130	-0.052	0.206	0.004	0	146
Alcatel-Lucent B66A	138.00	170	1.130	-0.052	0.206	0.004	0	147
RFS DB-T1-6Z-8AB-0Z	138.00	88	1.130	-0.052	0.206	0.004	0	76
Commscope SBNHH-	138.00	152	1.130	-0.052	0.206	0.004	0	131
Commscope JAHH-65B-	138.00	364	1.130	-0.052	0.206	0.004	1	313
Amphenol Antel LPA-8	138.00	162	1.130	-0.052	0.206	0.004	0	139
Round Low Profile Pl	138.00	1,500	1.130	-0.052	0.206	0.004	4	1,291
Nortel NTGB01MA	128.00	1	0.972	-0.116	0.118	-0.029	0	1
RFS APXV18-206517S-C	128.00	79	0.972	-0.116	0.118	-0.029	-2	68
Alcatel-Lucent 800 M	122.00	159	0.883	-0.121	0.081	-0.039	-4	137
Alcatel-Lucent 1900	122.00	180	0.883	-0.121	0.081	-0.039	-5	155
Alcatel-Lucent TD-RR	122.00	210	0.883	-0.121	0.081	-0.039	-5	181
Round Low Profile Pl	120.00	1,500	0.854	-0.120	0.071	-0.040	-40	1,291
RFS APXV9TM14-ALU-I2	118.00	165	0.826	-0.116	0.062	-0.041	-4	142
RFS APXVSPP18-C-A20	118.00	171	0.826	-0.116	0.062	-0.041	-5	147
PCTEL GPS-TMG-HR-	20.00	1	0.024	0.066	0.039	0.043	0	1
Standoff	20.00	75	0.024	0.066	0.039	0.043	2	65
		65,590	100.291	27.943	30.731	7.692	2,213	56,471

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

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 (deg)	Ratio
0.00	-78.71	-2.20	0.00	-272.29	0.00	272.29	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.042
5.00	-76.18	-2.17	0.00	-261.29	0.00	261.29	6,145.05	3,072.53	17,781.1	8,903.77	0.00	-0.01	0.042
10.00	-73.69	-2.13	0.00	-250.44	0.00	250.44	6,086.60	3,043.30	17,295.1	8,660.43	0.01	-0.01	0.041
15.00	-71.24	-2.08	0.00	-239.80	0.00	239.80	6,026.28	3,013.14	16,810.0	8,417.51	0.03	-0.02	0.040
20.00	-68.73	-2.03	0.00	-229.39	0.00	229.39	5,964.08	2,982.04	16,326.1	8,175.18	0.05	-0.02	0.040
25.00	-66.35	-1.98	0.00	-219.24	0.00	219.24	5,900.01	2,950.01	15,843.6	7,933.57	0.08	-0.03	0.039
30.00	-64.01	-1.92	0.00	-209.36	0.00	209.36	5,834.07	2,917.04	15,362.8	7,692.84	0.11	-0.04	0.038
35.00	-61.71	-1.87	0.00	-199.75	0.00	199.75	5,766.26	2,883.13	14,884.1	7,453.12	0.16	-0.04	0.038
40.00	-59.44	-1.81	0.00	-190.41	0.00	190.41	5,696.58	2,848.29	14,407.7	7,214.56	0.20	-0.05	0.037
45.00	-55.69	-1.71	0.00	-181.35	0.00	181.35	5,625.02	2,812.51	13,933.9	6,977.32	0.26	-0.06	0.036
50.00	-53.48	-1.65	0.00	-172.79	0.00	172.79	5,551.60	2,775.80	13,463.0	6,741.53	0.32	-0.06	0.035
53.00	-52.69	-1.64	0.00	-167.82	0.00	167.82	4,466.37	2,233.18	10,853.4	5,434.80	0.36	-0.07	0.043
55.00	-50.76	-1.58	0.00	-164.55	0.00	164.55	4,445.78	2,222.89	10,710.8	5,363.40	0.39	-0.07	0.042
60.00	-48.85	-1.54	0.00	-156.63	0.00	156.63	4,392.99	2,196.49	10,355.0	5,185.21	0.47	-0.08	0.041
65.00	-46.97	-1.49	0.00	-148.96	0.00	148.96	4,338.33	2,169.16	10,000.3	5,007.61	0.55	-0.08	0.041
70.00	-45.13	-1.45	0.00	-141.51	0.00	141.51	4,281.80	2,140.90	9,647.15	4,830.75	0.64	-0.09	0.040
75.00	-43.32	-1.41	0.00	-134.26	0.00	134.26	4,223.39	2,111.70	9,295.72	4,654.77	0.74	-0.10	0.039
80.00	-41.54	-1.39	0.00	-127.20	0.00	127.20	4,163.12	2,081.56	8,946.35	4,479.82	0.85	-0.11	0.038
85.00	-39.79	-1.37	0.00	-120.27	0.00	120.27	4,100.97	2,050.48	8,599.32	4,306.05	0.97	-0.12	0.038
90.00	-39.30	-1.37	0.00	-113.42	0.00	113.42	4,036.95	2,018.47	8,254.94	4,133.61	1.10	-0.12	0.037
91.42	-37.32	-1.36	0.00	-111.48	0.00	111.48	4,018.47	2,009.23	8,157.89	4,085.01	1.13	-0.13	0.037
95.00	-35.70	-1.37	0.00	-106.60	0.00	106.60	3,971.06	1,985.53	7,913.50	3,962.63	1.23	-0.13	0.036
98.00	-35.10	-1.37	0.00	-102.50	0.00	102.50	3,074.73	1,537.36	6,126.65	3,067.88	1.32	-0.14	0.045
100.00	-33.63	-1.39	0.00	-99.76	0.00	99.76	3,057.08	1,528.54	6,027.83	3,018.39	1.37	-0.14	0.044
105.00	-32.18	-1.41	0.00	-92.83	0.00	92.83	3,011.64	1,505.82	5,781.46	2,895.03	1.53	-0.15	0.043
110.00	-30.76	-1.44	0.00	-85.77	0.00	85.77	2,964.33	1,482.16	5,536.34	2,772.28	1.69	-0.16	0.041
115.00	-29.92	-1.46	0.00	-78.55	0.00	78.55	2,915.15	1,457.57	5,292.74	2,650.30	1.87	-0.17	0.040
118.00	-28.96	-1.48	0.00	-74.17	0.00	74.17	2,884.74	1,442.37	5,147.43	2,577.54	1.98	-0.18	0.039
120.00	-26.56	-1.53	0.00	-71.20	0.00	71.20	2,864.09	1,432.05	5,050.96	2,529.23	2.05	-0.18	0.037
122.00	-25.07	-1.56	0.00	-68.14	0.00	68.14	2,843.15	1,421.57	4,954.82	2,481.09	2.13	-0.19	0.036
125.00	-24.28	-1.57	0.00	-63.47	0.00	63.47	2,811.17	1,405.58	4,811.29	2,409.22	2.25	-0.19	0.035
128.00	-23.67	-1.58	0.00	-58.76	0.00	58.76	2,778.51	1,389.26	4,668.62	2,337.78	2.37	-0.20	0.034
130.00	-22.41	-1.59	0.00	-55.60	0.00	55.60	2,756.37	1,378.18	4,574.03	2,290.41	2.46	-0.20	0.032
135.00	-21.67	-1.59	0.00	-47.66	0.00	47.66	2,699.70	1,349.85	4,339.46	2,172.95	2.67	-0.21	0.030
138.00	-17.81	-1.57	0.00	-42.89	0.00	42.89	2,664.80	1,332.40	4,200.13	2,103.19	2.80	-0.22	0.027
139.33	-17.58	-1.57	0.00	-40.80	0.00	40.80	2,649.07	1,324.54	4,138.57	2,072.36	2.87	-0.22	0.026
140.00	-16.04	-1.54	0.00	-39.75	0.00	39.75	2,641.16	1,320.58	4,107.88	2,056.99	2.90	-0.22	0.025
144.42	-15.93	-1.54	0.00	-32.95	0.00	32.95	1,927.04	963.52	2,958.38	1,481.39	3.10	-0.23	0.031
145.00	-15.37	-1.52	0.00	-32.05	0.00	32.05	1,922.70	961.35	2,940.04	1,472.21	3.13	-0.23	0.030
148.00	-11.58	-1.39	0.00	-27.48	0.00	27.48	1,899.96	949.98	2,845.93	1,425.08	3.27	-0.23	0.025
150.00	-10.75	-1.34	0.00	-24.71	0.00	24.71	1,884.42	942.21	2,783.42	1,393.78	3.37	-0.23	0.023
155.00	-9.95	-1.28	0.00	-17.99	0.00	17.99	1,844.28	922.14	2,628.12	1,316.02	3.62	-0.24	0.019
160.00	-4.65	-0.81	0.00	-11.58	0.00	11.58	1,802.26	901.13	2,474.43	1,239.06	3.87	-0.25	0.012
165.00	-4.39	-0.77	0.00	-7.55	0.00	7.55	1,758.37	879.19	2,322.64	1,163.05	4.13	-0.25	0.009
167.00	-3.35	-0.64	0.00	-6.00	0.00	6.00	1,740.29	870.15	2,262.53	1,132.94	4.24	-0.25	0.007
170.00	-3.23	-0.62	0.00	-4.09	0.00	4.09	1,712.61	856.30	2,173.05	1,088.14	4.40	-0.25	0.006
171.00	-2.45	-0.50	0.00	-3.47	0.00	3.47	1,703.23	851.62	2,143.42	1,073.30	4.45	-0.25	0.005
175.00	-2.06	-0.42	0.00	-1.48	0.00	1.48	1,664.97	832.49	2,025.94	1,014.48	4.66	-0.25	0.003
178.50	0.00	-0.41	0.00	0.00	0.00	0.00	1,630.52	815.26	1,924.60	963.73	4.85	-0.25	0.000

Load Case **(0.9 - 0.2Sds) * DL + E EMAM** **Seismic (Reduced DL) Equivalent Modal Analysis Method**

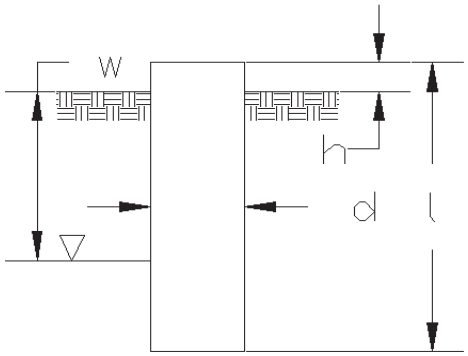
Calculated Forces

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 (deg)	Ratio
0.00	-54.69	-2.20	0.00	-269.11	0.00	269.11	6,201.63	3,100.82	18,267.6	9,147.40	0.00	0.00	0.038
5.00	-52.93	-2.17	0.00	-258.11	0.00	258.11	6,145.05	3,072.53	17,781.1	8,903.77	0.00	-0.01	0.038
10.00	-51.21	-2.12	0.00	-247.28	0.00	247.28	6,086.60	3,043.30	17,295.1	8,660.43	0.01	-0.01	0.037
15.00	-49.50	-2.07	0.00	-236.66	0.00	236.66	6,026.28	3,013.14	16,810.0	8,417.51	0.03	-0.02	0.036
20.00	-47.76	-2.02	0.00	-226.29	0.00	226.29	5,964.08	2,982.04	16,326.1	8,175.18	0.05	-0.02	0.036
25.00	-46.11	-1.96	0.00	-216.20	0.00	216.20	5,900.01	2,950.01	15,843.6	7,933.57	0.08	-0.03	0.035
30.00	-44.48	-1.91	0.00	-206.38	0.00	206.38	5,834.07	2,917.04	15,362.8	7,692.84	0.11	-0.04	0.034
35.00	-42.88	-1.85	0.00	-196.84	0.00	196.84	5,766.26	2,883.13	14,884.1	7,453.12	0.15	-0.04	0.034
40.00	-41.30	-1.79	0.00	-187.58	0.00	187.58	5,696.58	2,848.29	14,407.7	7,214.56	0.20	-0.05	0.033
45.00	-38.70	-1.70	0.00	-178.60	0.00	178.60	5,625.02	2,812.51	13,933.9	6,977.32	0.26	-0.05	0.032
50.00	-37.16	-1.64	0.00	-170.13	0.00	170.13	5,551.60	2,775.80	13,463.0	6,741.53	0.32	-0.06	0.032
53.00	-36.61	-1.62	0.00	-165.22	0.00	165.22	4,466.37	2,233.18	10,853.4	5,434.80	0.36	-0.07	0.039
55.00	-35.27	-1.56	0.00	-161.99	0.00	161.99	4,445.78	2,222.89	10,710.8	5,363.40	0.38	-0.07	0.038
60.00	-33.94	-1.51	0.00	-154.17	0.00	154.17	4,392.99	2,196.49	10,355.0	5,185.21	0.46	-0.08	0.037
65.00	-32.64	-1.47	0.00	-146.60	0.00	146.60	4,338.33	2,169.16	10,000.3	5,007.61	0.54	-0.08	0.037
70.00	-31.36	-1.42	0.00	-139.26	0.00	139.26	4,281.80	2,140.90	9,647.15	4,830.75	0.63	-0.09	0.036
75.00	-30.10	-1.39	0.00	-132.14	0.00	132.14	4,223.39	2,111.70	9,295.72	4,654.77	0.73	-0.10	0.036
80.00	-28.86	-1.36	0.00	-125.20	0.00	125.20	4,163.12	2,081.56	8,946.35	4,479.82	0.84	-0.11	0.035
85.00	-27.64	-1.34	0.00	-118.40	0.00	118.40	4,100.97	2,050.48	8,599.32	4,306.05	0.96	-0.11	0.034
90.00	-27.30	-1.34	0.00	-111.68	0.00	111.68	4,036.95	2,018.47	8,254.94	4,133.61	1.08	-0.12	0.034
91.42	-25.93	-1.34	0.00	-109.78	0.00	109.78	4,018.47	2,009.23	8,157.89	4,085.01	1.12	-0.13	0.033
95.00	-24.80	-1.34	0.00	-104.99	0.00	104.99	3,971.06	1,985.53	7,913.50	3,962.63	1.21	-0.13	0.033
98.00	-24.39	-1.34	0.00	-100.97	0.00	100.97	3,074.73	1,537.36	6,126.65	3,067.88	1.30	-0.14	0.041
100.00	-23.36	-1.36	0.00	-98.29	0.00	98.29	3,057.08	1,528.54	6,027.83	3,018.39	1.36	-0.14	0.040
105.00	-22.36	-1.38	0.00	-91.49	0.00	91.49	3,011.64	1,505.82	5,781.46	2,895.03	1.51	-0.15	0.039
110.00	-21.37	-1.41	0.00	-84.57	0.00	84.57	2,964.33	1,482.16	5,536.34	2,772.28	1.67	-0.16	0.038
115.00	-20.79	-1.43	0.00	-77.50	0.00	77.50	2,915.15	1,457.57	5,292.74	2,650.30	1.84	-0.17	0.036
118.00	-20.12	-1.45	0.00	-73.20	0.00	73.20	2,884.74	1,442.37	5,147.43	2,577.54	1.95	-0.18	0.035
120.00	-18.45	-1.50	0.00	-70.29	0.00	70.29	2,864.09	1,432.05	5,050.96	2,529.23	2.02	-0.18	0.034
122.00	-17.42	-1.53	0.00	-67.28	0.00	67.28	2,843.15	1,421.57	4,954.82	2,481.09	2.10	-0.18	0.033
125.00	-16.87	-1.54	0.00	-62.69	0.00	62.69	2,811.17	1,405.58	4,811.29	2,409.22	2.22	-0.19	0.032
128.00	-16.44	-1.55	0.00	-58.06	0.00	58.06	2,778.51	1,389.26	4,668.62	2,337.78	2.34	-0.19	0.031
130.00	-15.57	-1.56	0.00	-54.95	0.00	54.95	2,756.37	1,378.18	4,574.03	2,290.41	2.42	-0.20	0.030
135.00	-15.05	-1.56	0.00	-47.13	0.00	47.13	2,699.70	1,349.85	4,339.46	2,172.95	2.63	-0.21	0.027
138.00	-12.37	-1.55	0.00	-42.44	0.00	42.44	2,664.80	1,332.40	4,200.13	2,103.19	2.76	-0.21	0.025
139.33	-12.21	-1.55	0.00	-40.38	0.00	40.38	2,649.07	1,324.54	4,138.57	2,072.36	2.82	-0.21	0.024
140.00	-11.15	-1.52	0.00	-39.35	0.00	39.35	2,641.16	1,320.58	4,107.88	2,056.99	2.85	-0.22	0.023
144.42	-11.07	-1.52	0.00	-32.63	0.00	32.63	1,927.04	963.52	2,958.38	1,481.39	3.06	-0.22	0.028
145.00	-10.68	-1.50	0.00	-31.74	0.00	31.74	1,922.70	961.35	2,940.04	1,472.21	3.08	-0.22	0.027
148.00	-8.05	-1.37	0.00	-27.23	0.00	27.23	1,899.96	949.98	2,845.93	1,425.08	3.23	-0.23	0.023
150.00	-7.47	-1.33	0.00	-24.48	0.00	24.48	1,884.42	942.21	2,783.42	1,393.78	3.32	-0.23	0.022
155.00	-6.91	-1.27	0.00	-17.84	0.00	17.84	1,844.28	922.14	2,628.12	1,316.02	3.57	-0.24	0.017
160.00	-3.23	-0.80	0.00	-11.50	0.00	11.50	1,802.26	901.13	2,474.43	1,239.06	3.82	-0.24	0.011
165.00	-3.05	-0.77	0.00	-7.50	0.00	7.50	1,758.37	879.19	2,322.64	1,163.05	4.08	-0.25	0.008
167.00	-2.32	-0.63	0.00	-5.96	0.00	5.96	1,740.29	870.15	2,262.53	1,132.94	4.18	-0.25	0.007
170.00	-2.24	-0.62	0.00	-4.06	0.00	4.06	1,712.61	856.30	2,173.05	1,088.14	4.33	-0.25	0.005
171.00	-1.70	-0.49	0.00	-3.44	0.00	3.44	1,703.23	851.62	2,143.42	1,073.30	4.39	-0.25	0.004
175.00	-1.43	-0.42	0.00	-1.47	0.00	1.47	1,664.97	832.49	2,025.94	1,014.48	4.60	-0.25	0.002
178.50	0.00	-0.41	0.00	0.00	0.00	0.00	1,630.52	815.26	1,924.60	963.73	4.78	-0.25	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	38.16	0.00	78.67	0.00	0.00	4756.24	53.00	0.53
0.9D + 1.6W	38.14	0.00	59.00	0.00	0.00	4713.18	53.00	0.53
1.2D + 1.0Di + 1.0Wi	32.11	0.00	118.92	0.00	0.00	2942.69	0.00	0.34
(1.2 + 0.2Sds) * DL + E ELFM	2.00	0.00	78.71	0.00	0.00	273.87	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.20	0.00	78.71	0.00	0.00	272.29	98.00	0.04
(0.9 - 0.2Sds) * DL + E ELFM	2.00	0.00	54.69	0.00	0.00	270.85	53.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.20	0.00	54.69	0.00	0.00	269.11	98.00	0.04
1.0D + 1.0W	9.12	0.00	65.59	0.00	0.00	1130.96	0.00	0.13

Site Name:	Bilkays Express, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302467	*American Tower Corporation*	
Engineer:	Peter.Giordano		
Engineering Number:	OAA748085		
Date:	05/02/19		



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

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	4756.2	k-ft
Shear/Leg (V):	38.2	k
Axial Load (P):	78.7	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	8.5	ft
Caisson Embedment (L-h):	29.5	ft
Caisson Height Above Ground (h):	0.5	ft
Depth Below Ground Surface to Water Table (w):	6.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	0.75	
Pullout Angle:	30.0	degrees

Engineer Notes

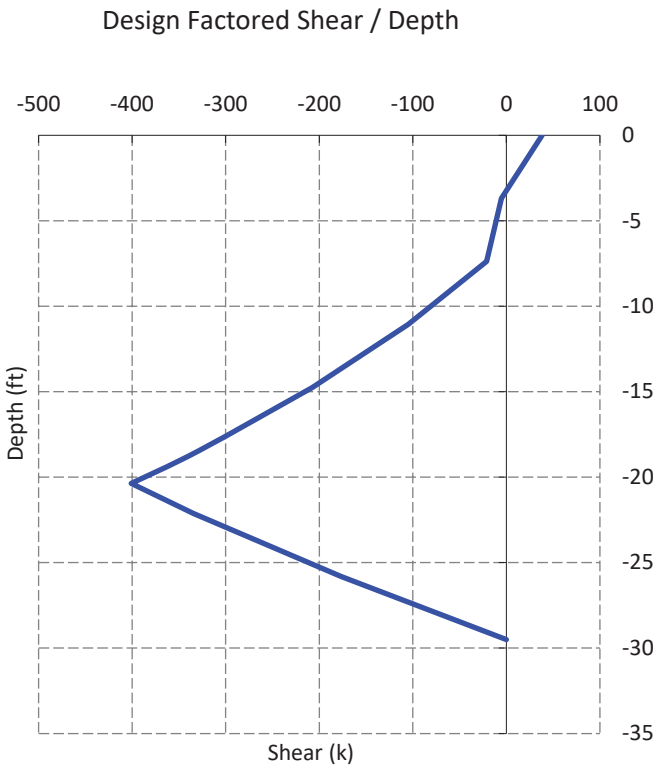
Soil Mechanical Properties

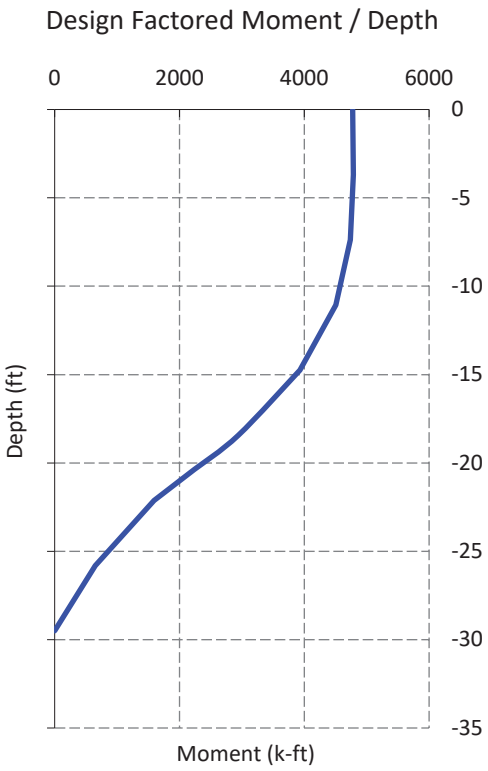
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	5.0	120	0	0	0	0
5.0	15.0	122	0	34	480	0
15.0	20.0	122	0	34	690	0
20.0	30.5	122	0	34	820	5000

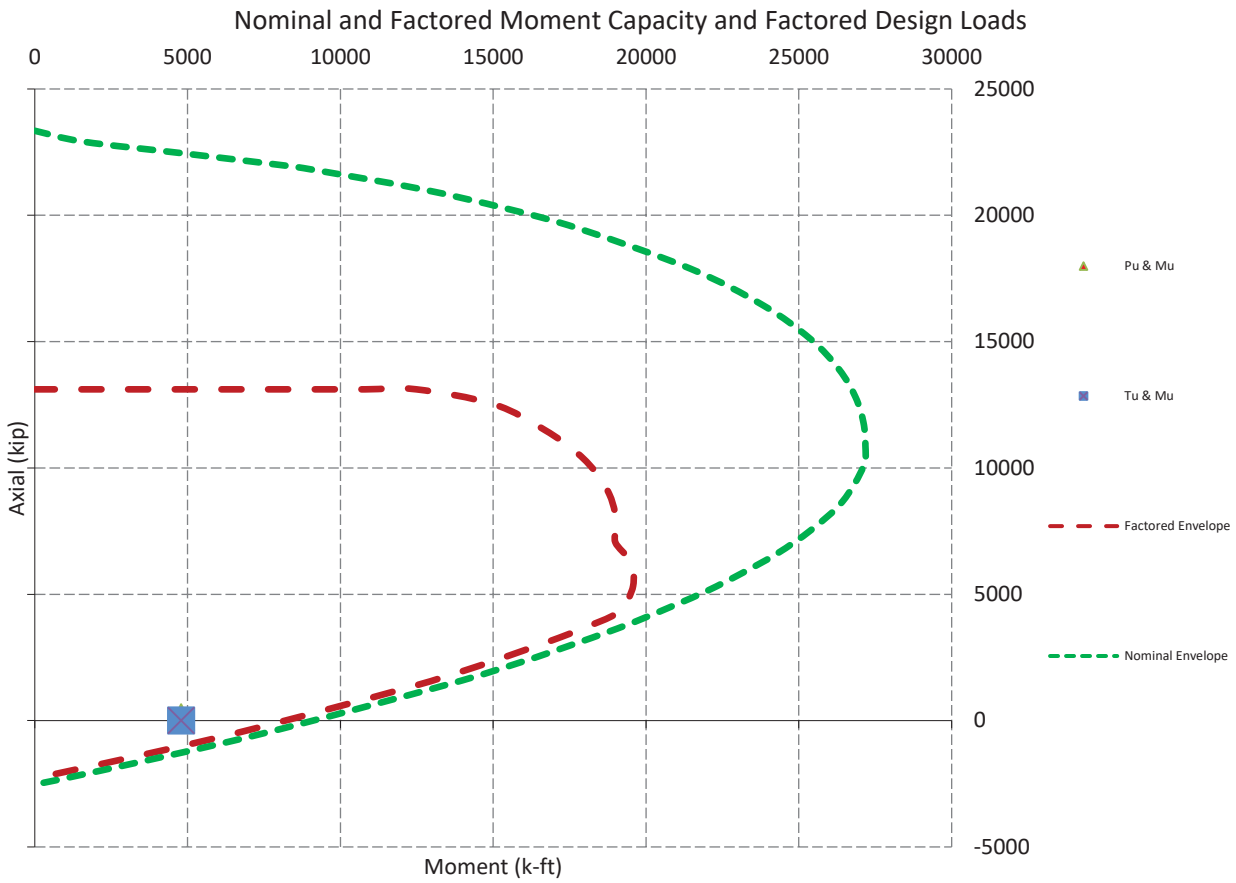
Required Embedment:	22.8	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	1702.4 ft^3 =	63.1 yd^3
Weight of Concrete (Buoyancy Effect Considered):	172.1	k
Average Soil Unit Weight:	72.0	pcf
Skin Friction Resistance:	428.3	k
Compressive Bearing Resistance:	283.7	k
Pullout Weight (Minus Concrete Weight):	1127.5	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	370.0	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	534.0	k
P_u:	135.6	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.25	Result: OK
Total Lateral Resistance:	2700.8	k
Inflection Point (Below Ground Surface):	20.4	ft
Design Overturning Moment At Inflection Point (M_D):	5553.2	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	11292.1	k-ft
$M_D/\phi_s M_n$:	0.49	Result: OK
ϕ_s:	0.75	

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	27	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	18.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	94.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.85	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	4786.5	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	8066.2	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.59	Result: OK
Design Shear (V_u):	401.0	k
Nominal Shear Capacity ($\phi_V V_n$):	764.5	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.52	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	2274.5	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	135.6	k
Nominal Compression Capacity ($\phi_P P_n$):	10779.3	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.005	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.59	Result: OK


Design Factored Shear / Depth
-500
-400
-300
-200
-100
0
100
0
-5
-10
-15
-20
-25
-30
-35
Depth (ft)
Shear (k)


Design Factored Moment / Depth
0
2000
4000
6000
0
-5
-10
-15
-20
-25
-30
-35
Depth (ft)
Moment (k-ft)


Nominal and Factored Moment Capacity and Factored Design Loads
0
5000
10000
15000
20000
25000
30000
25000
20000
15000
10000
5000
0
-5000
Axial (kip)
Moment (k-ft)
Pu & Mu
Tu & Mu
Factored Envelope
Nominal Envelope

Base Plate & Anchor Rod Analysis

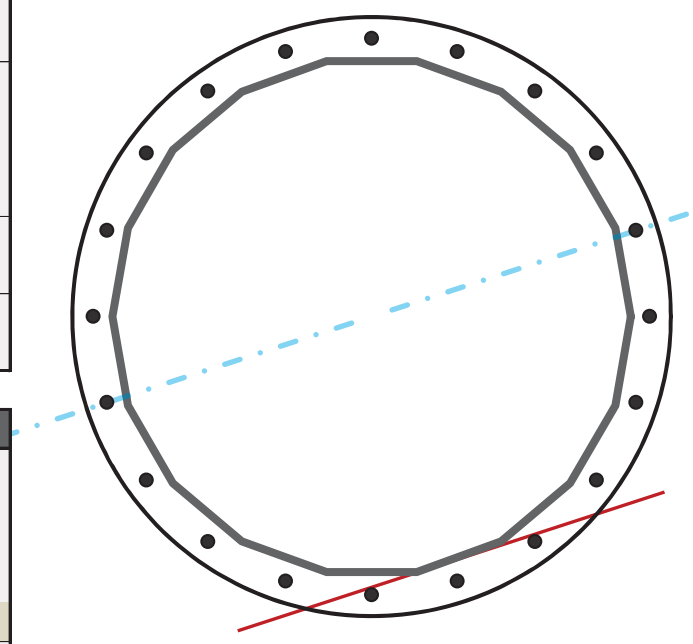
Pole Dimensions		
Number of Sides	18	-
Diameter	72	in
Thickness	0.4375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	4756.2	k-ft
Axial, Pu	78.7	k
Shear, Vu	38.2	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	20%	Pass
Anchor Rods	58%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	85	in
Thickness	2 3/4	in
Grade	Other	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	854.4	k
Bending Stress, ϕMn	4362.4	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	79	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.4	in
Orientation Offset		°
Applied Force, Pu	148.4	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	38.2	4756.2	1.00
Anchor Rod Forces	38.2	4756.2	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	97.8602	5.4367	0.3479		62651.39
Bolt	3.9761	3.2477	0.8393	4.5	50688.86
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	85	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	45.177	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	79	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	148.4	k
Applied Shear, Vu	0.9	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.571	OK
Interaction Capacity	0.578	OK

External Base Plate		
Chord Length AA	37.229	in
Additional AA	5.500	in
Section Modulus, Z	80.785	in^3
Applied Moment, Mu	854.4	k-ft
Bending Capacity, ϕMn	4362.4	k-ft
Capacity, Mu/ϕMn	0.196	OK
Chord Length AB	34.965	in
Additional AB	5.500	in
Section Modulus, Z	76.505	in^3
Applied Moment, Mu	613.3	k-ft
Bending Capacity, ϕMn	4131.3	k-ft
Capacity, Mu/ϕMn	0.148	OK
Bend Line Length	43.828	in
Additional Bend Line	0.000	in
Section Modulus, Z	82.863	in^3
Applied Moment, Mu	854.4	k-ft
Bending Capacity, ϕMn	4474.6	k-ft
Capacity, Mu/ϕMn	0.191	OK

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

EXHIBIT 4

RF EMISSIONS COMPLIANCE REPORT

Empire Telecom on behalf of AT&T Mobility, LLC

Site Name: YALESVILLE
AT&T Mobility, LLC Site FA #: 10071351
AT&T Mobility, LLC Site USID: 4564
AT&T Mobility, LLC Site ID: CT5173
14 BOOXFORD DRIVE
SHELTON, CT
5/10/2019

Report Status:

AT&T Mobility, LLC Is Compliant

Prepared By:

Sitesafe, LLC

8618 Westwood Center Drive,
Suite 315

Vienna, VA 22182

Voice 703-276-1100
Fax 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Empire Telecom
SHELTON, CT

The reviewer whose signature appears below here by certifies and affirms:

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, LLC in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Empire Telecom (See attached Site Summary and Carrier documents), and that AT&T Mobility, LLC's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "YALESVILLE" ("the site"); and

That AT&T Mobility, LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility, LLC and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis. A list of microwave antennas is included; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for

licensees of AT&T Mobility, LLC's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 3.026% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 6.72% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that AT&T Mobility, LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

Young Min Kim

Empire Telecom
YALESVILLE
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.248 %
AT&T Mobility, LLC	0.213 %
AT&T Mobility, LLC	0.377 %
AT&T Mobility, LLC	0.325 %
AT&T Mobility, LLC	0.135 %
AT&T Mobility, LLC (Proposed)	0.394 %
AT&T Mobility, LLC (Proposed)	0.64 %
AT&T Mobility, LLC (Proposed)	0.694 %
MetroPCS (Decommissioned)	0 %
Sprint	0.271 %
Sprint	0.271 %
Sprint	0.102 %
Sprint	0.103 %
Sprint	0.389 %
Sprint (Decommissioned)	0 %
T-Mobile	0.1 %
T-Mobile	0.109 %
T-Mobile	0.235 %
T-Mobile	0.162 %
Verizon Wireless	0.545 %
Verizon Wireless	0.693 %
Verizon Wireless	0.484 %
Verizon Wireless	0.231 %
Composite Site MPE:	6.72 %

AT&T Mobility, LLC
YALESVILLE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.47811	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.24781	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Quintel	QS66512-2	160	30	4170	1.942539	0.194254	2.275471	0.227547
Quintel	QS66512-2	160	145	4170	1.107539	0.110754	1.943017	0.194302
Quintel	QS66512-2	160	275	4170	1.942539	0.194254	2.275471	0.227547

AT&T Mobility, LLC
YALESVILLE
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	1.04461	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.21261	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Quintel	QS66512-2	160	30	840	0.55564	0.113088	0.658962	0.134117
Quintel	QS66512-2	160	145	840	0.362256	0.073729	0.528334	0.107531
Quintel	QS66512-2	160	275	840	1.036053	0.210866	1.042602	0.212199

AT&T Mobility, LLC
YALESVILLE
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.77012	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.37701	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	OPA-65R-LCUU-H6	160	30	3206	3.109876	0.310988	3.732855	0.373286
CCI Antennas	OPA-65R-LCUU-H6	160	145	3206	3.124745	0.312475	3.732855	0.373286
CCI Antennas	OPA-65R-LCUU-H6	160	275	3206	3.109876	0.310988	3.732855	0.373286

AT&T Mobility, LLC
YALESVILLE
Carrier Summary

Frequency:	722	MHz
Maximum Permissible Exposure (MPE):	481.33	µW/cm^2
Maximum power density at ground level:	1.56246	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.32461	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	OPA-65R-LCUU-H6	160	30	1256	0.821218	0.170613	0.833544	0.173174
CCI Antennas	OPA-65R-LCUU-H6	160	145	1256	0.504209	0.104752	0.512872	0.106552
CCI Antennas	OPA-65R-LCUU-H6	160	275	1256	1.538566	0.319647	1.549131	0.321842

AT&T Mobility, LLC
YALESVILLE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0.76333	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.13471	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	7770	160	30	547	0.731901	0.129159	0.742347	0.131002
Powerwave	7770	160	145	547	0.732307	0.129231	0.742347	0.131002
Powerwave	7770	160	275	547	0.732307	0.129231	0.742347	0.131002

AT&T Mobility, LLC (Proposed)
YALESVILLE
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.94301	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.3943	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10965	160	30	7114	2.336604	0.23366	3.645551	0.364555
Kathrein-Scala	800-10965	160	145	7114	1.669743	0.166974	3.147348	0.314735
Kathrein-Scala	800-10965	160	275	7114	2.336604	0.23366	3.645551	0.364555

AT&T Mobility, LLC (Proposed)
YALESVILLE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	3.62933	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.64047	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10965	160	30	1803	1.066714	0.188244	1.07709	0.190075
Kathrein-Scala	800-10965	160	30	1803	1.066714	0.188244	1.07709	0.190075
Kathrein-Scala	800-10965	160	145	1803	0.648311	0.114408	0.662981	0.116997
Kathrein-Scala	800-10965	160	145	1803	0.648311	0.114408	0.662981	0.116997
Kathrein-Scala	800-10965	160	275	1803	1.746727	0.308246	1.807346	0.318943
Kathrein-Scala	800-10965	160	275	1803	1.746727	0.308246	1.807346	0.318943

AT&T Mobility, LLC (Proposed)
YALESVILLE
Carrier Summary

Frequency:	763	MHz
Maximum Permissible Exposure (MPE):	508.67	µW/cm^2
Maximum power density at ground level:	3.52901	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.69378	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10965	160	30	2959	2.051421	0.403294	2.084386	0.409774
Kathrein-Scala	800-10965	160	145	2959	1.276045	0.250861	1.317803	0.25907
Kathrein-Scala	800-10965	160	275	2959	3.501258	0.688321	3.501497	0.688368

MetroPCS (Decommissioned)
YALESVILLE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	0	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXV18-206517S	128	0	0	0	0	0	0
RFS	APXV18-206517S	128	120	0	0	0	0	0
RFS	APXV18-206517S	128	240	0	0	0	0	0

Sprint
YALESVILLE
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.71259	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.27126	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	118	0	3804	1.156611	0.115661	2.511069	0.251107
RFS	APXVSPP18-C-A20	118	120	3804	1.156611	0.115661	2.511069	0.251107
RFS	APXVSPP18-C-A20	118	240	3804	1.156611	0.115661	2.511069	0.251107

Sprint
YALESVILLE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.71259	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.27126	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	118	0	3804	1.156611	0.115661	2.511069	0.251107
RFS	APXVSPP18-C-A20	118	120	3804	1.156611	0.115661	2.511069	0.251107
RFS	APXVSPP18-C-A20	118	240	3804	1.156611	0.115661	2.511069	0.251107

Sprint
YALESVILLE
Carrier Summary

Frequency:	869	MHz
Maximum Permissible Exposure (MPE):	579.33	µW/cm^2
Maximum power density at ground level:	0.58953	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10176	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	118	0	1084	0.566159	0.097726	0.575871	0.099402
RFS	APXVSPP18-C-A20	118	120	1084	0.566159	0.097726	0.575871	0.099402
RFS	APXVSPP18-C-A20	118	240	1084	0.567763	0.098003	0.575871	0.099402

Sprint
YALESVILLE
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.58953	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10259	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	118	0	1084	0.566159	0.09852	0.575871	0.10021
RFS	APXVSPP18-C-A20	118	120	1084	0.566159	0.09852	0.575871	0.10021
RFS	APXVSPP18-C-A20	118	240	1084	0.567763	0.098799	0.575871	0.10021

Sprint
YALESVILLE
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.88737	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.38874	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ARGUS	LLPX310R	171	0	1542	0.407337	0.040734	0.737414	0.073741
ARGUS	LLPX310R	171	120	1542	0.407337	0.040734	0.737414	0.073741
ARGUS	LLPX310R	171	240	1542	0.410464	0.041046	0.737414	0.073741
RFS	APXV9TM14-C-I20	118	0	4366	1.150854	0.115085	2.27041	0.227041
RFS	APXV9TM14-C-I20	118	120	4366	1.150854	0.115085	2.27041	0.227041
RFS	APXV9TM14-C-I20	118	240	4366	1.157766	0.115777	2.27041	0.227041

Sprint (Decommissioned)
YALESVILLE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	DB844H90E-XY	181	0	0	0	0	0	0
ANDREW	DB844H90E-XY	181	120	0	0	0	0	0
ANDREW	DB844H90E-XY	181	240	0	0	0	0	0

T-Mobile
YALESVILLE
Carrier Summary

Frequency:	700	MHz
Maximum Permissible Exposure (MPE):	466.67	µW/cm^2
Maximum power density at ground level:	0.46785	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10025	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	148	0	1307	0.373337	0.080001	0.401504	0.086037
RFS	APXVAARR24_43-U-NA20	148	120	1307	0.373337	0.080001	0.401504	0.086037
RFS	APXVAARR24_43-U-NA20	148	240	1307	0.373194	0.07997	0.401504	0.086037

T-Mobile
YALESVILLE
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	µW/cm^2
Maximum power density at ground level:	0.43588	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10897	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	148	0	1251	0.395661	0.098915	0.408212	0.102053
RFS	APXVAARR24_43-U-NA20	148	120	1251	0.395661	0.098915	0.408213	0.102053
RFS	APXVAARR24_43-U-NA20	148	240	1251	0.396536	0.099134	0.408213	0.102053

T-Mobile
YALESVILLE
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.34715	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.23471	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR32 B66AA-B2A	148	0	2313	2.200196	0.22002	2.200196	0.22002
Ericsson	AIR32 B66AA-B2A	148	120	2313	2.187163	0.218716	2.196412	0.219641
Ericsson	AIR32 B66AA-B2A	148	240	2313	2.200196	0.22002	2.200196	0.22002

T-Mobile
YALESVILLE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.61781	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.16178	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 21 B2A B4P	148	0	2061	0.45198	0.045198	0.51994	0.051994
Ericsson	AIR32 B66AA-B2A	148	0	2313	0.507128	0.050713	0.583381	0.058338
Ericsson	AIR 21 B2A B4P	148	120	2061	0.45198	0.045198	0.51994	0.051994
Ericsson	AIR32 B66AA-B2A	148	120	2313	0.507128	0.050713	0.583381	0.058338
Ericsson	AIR 21 B2A B4P	148	240	2061	0.452113	0.045211	0.51994	0.051994
Ericsson	AIR32 B66AA-B2A	148	240	2313	0.507278	0.050728	0.583381	0.058338

Verizon Wireless
YALESVILLE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.44883	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.54488	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNHH-1D65B	138	0	4583	4.125787	0.412579	5.384773	0.538477
ANDREW	SBNHH-1D65B	138	120	4583	4.125787	0.412579	5.384773	0.538477
ANDREW	SBNHH-1D65B	138	240	4583	4.120659	0.412066	5.384773	0.538477

Verizon Wireless
YALESVILLE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	3.92746	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.69308	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNHH-1D65B	138	0	2892	1.857805	0.327848	2.035213	0.359155
Antel	LPA-80063-6CF	138	0	4509	1.622846	0.286385	1.660782	0.293079
ANDREW	SBNHH-1D65B	138	120	2892	1.857805	0.327848	2.035213	0.359155
Antel	LPA-80063-6CF	138	120	4509	1.622846	0.286385	1.660782	0.293079
ANDREW	SBNHH-1D65B	138	240	2892	1.807141	0.318907	2.035213	0.359155
Antel	LPA-80063-6CF	138	240	4509	1.622846	0.286385	1.660782	0.293079

Verizon Wireless
YALESVILLE
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.84314	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.48431	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Commscope	JAHH-65B-R3B	138	0	6828	2.663593	0.266359	4.669985	0.466998
Commscope	JAHH-65B-R3B	138	120	6828	2.643717	0.264372	4.669985	0.466998
Commscope	JAHH-65B-R3B	138	240	6828	2.663593	0.266359	4.669984	0.466998

Verizon Wireless
YALESVILLE
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	1.15653	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.231	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Commscope	JAHH-65B-R3B	138	0	1996	0.727051	0.145217	1.057334	0.211185
Commscope	JAHH-65B-R3B	138	120	1996	0.727051	0.145217	1.057334	0.211185
Commscope	JAHH-65B-R3B	138	240	1996	0.726099	0.145026	1.057334	0.211185

YALESVILLE
Composite Microwave Antenna Summary

Carrier	Antenna Make/Model	Height (feet)
Sprint	DragonWave A-Ant-11G-2-C	171
Sprint	DragonWave A-Ant-18G-2-C	171

First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Create Label | Preferences | Shipping History | Address Book

Account # 161958927

Label Details

Label Number:
9405503699300498073240

SCAN® Form: 947570369930031344078 6

Terms
Acceptance Cutoff: 05/06/2019 4:30 PM
Acceptance Time: 05/06/2019 5:03 PM
Expected Date: 05/08/2019 11:59 PM
Delivery Status: Out for Delivery

Label Actions

USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
JULIA COUGHLIN
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
HON. WILLIAM W DICKINSON JR.
45 S MAIN ST
RM 310
WALLINGFORD, CT 06492-4201

Package:
Ship Date: 05/06/19
Value: $50.00
Weight: 3 lbs 0 oz
From: 01862
Label Type: Batch

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Transaction Number: 463288026
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$29.40**

Timestamp	Message
05-06-2019 11:40:50	LABEL PRINTED
05-06-2019 11:40:27	Getting Payment
05-06-2019 11:39:35	Setting Payment

Back to Shipping History

Feedback

First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Create Label | Preferences | Shipping History | Address Book | Shipping Cart (1)

Account # 161958927

Label Details

Label Number:
9405503699300498073233

SCAN® Form: 947570369930031344078 6

Terms
Acceptance Cutoff: 05/06/2019 4:30 PM
Acceptance Time: 05/06/2019 5:03 PM
Expected Date: 05/08/2019 11:59 PM
Delivery Status: Delivered, Left with Individual 2019-05-08 10:37:00.0
Label Actions

USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
JULIA COUGHLIN
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
KACIE HAND
TOWN PLANNER
45 S MAIN ST
RM G-40
WALLINGFORD, CT 06492-4201

Package:
Ship Date: 05/06/19
Value: $50.00
Weight: 3 lbs 0 oz
From: 01862
Label Type: Batch

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Transaction Number: 463288026
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$29.40**

Timestamp	Message
05-06-2019 11:40:49	LABEL PRINTED
05-06-2019 11:40:27	Getting Payment
05-06-2019 11:39:35	Setting Payment

Back to Shipping History

Feedback

First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Create Label | Preferences | Shipping History | Address Book

Account # 161958927

Label Details

Label Number:
9405503699300498073257

SCAN® Form: 947570369930031344078 6

Terms
Acceptance Cutoff: 05/06/2019 4:30 PM
Acceptance Time: 05/06/2019 5:03 PM
Expected Date: 05/08/2019 11:59 PM
Delivery Status: Delivered, Individual Picked Up at Postal Facility 2019-05-08 09:42:00.0

Label Actions
USPS Tracking®
Ship Again

Need help
File an insurance claim
Request A Service Refund

Return Address:
JULIA COUGHLIN
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
RLR INVESTMENTS LLC
600 GILLIAM RD
WILMINGTON, OH 45177-9089

Package:
Ship Date: 05/06/19
Value: $50.00
Weight: 3 lbs 0 oz
From: 01862
Label Type: Batch

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Transaction Number: 463288026
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$29.40**

Timestamp	Message
05-06-2019 11:40:51	LABEL PRINTED
05-06-2019 11:40:27	Getting Payment
05-06-2019 11:39:35	Setting Payment

Back to Shipping History

Feedback

First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Create Label | Preferences | Shipping History | Address Book

Account # 161958927

Label Details

Label Number:
9405503699300498073264

SCAN® Form: 947570369930031344078 6

Terms
Acceptance Cutoff: 05/06/2019 4:30 PM
Acceptance Time: 05/06/2019 5:03 PM
Expected Date: 05/07/2019 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2019-05-07 10:40:00.0

Label Actions
USPS Tracking®
Ship Again

Need help
File an insurance claim
Request A Service Refund

Return Address:
JULIA COUGHLIN
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
RYAN TIERNEY
AMERICAN TOWER CORP.
10 PRESIDENTIAL WAY
WOBURN, MA 01801-1053

Package:
Ship Date: 05/06/19
Value: $50.00
Weight: 3 lbs 0 oz
From: 01862
Label Type: Batch

Service:
Priority Mail® 1-Day
Flat Rate Envelope
USPS Tracking®

Transaction Number: 463288026
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$29.40**

Timestamp	Message
05-06-2019 11:40:52	LABEL PRINTED
05-06-2019 11:40:27	Getting Payment
05-06-2019 11:39:35	Setting Payment

Back to Shipping History

Feedback