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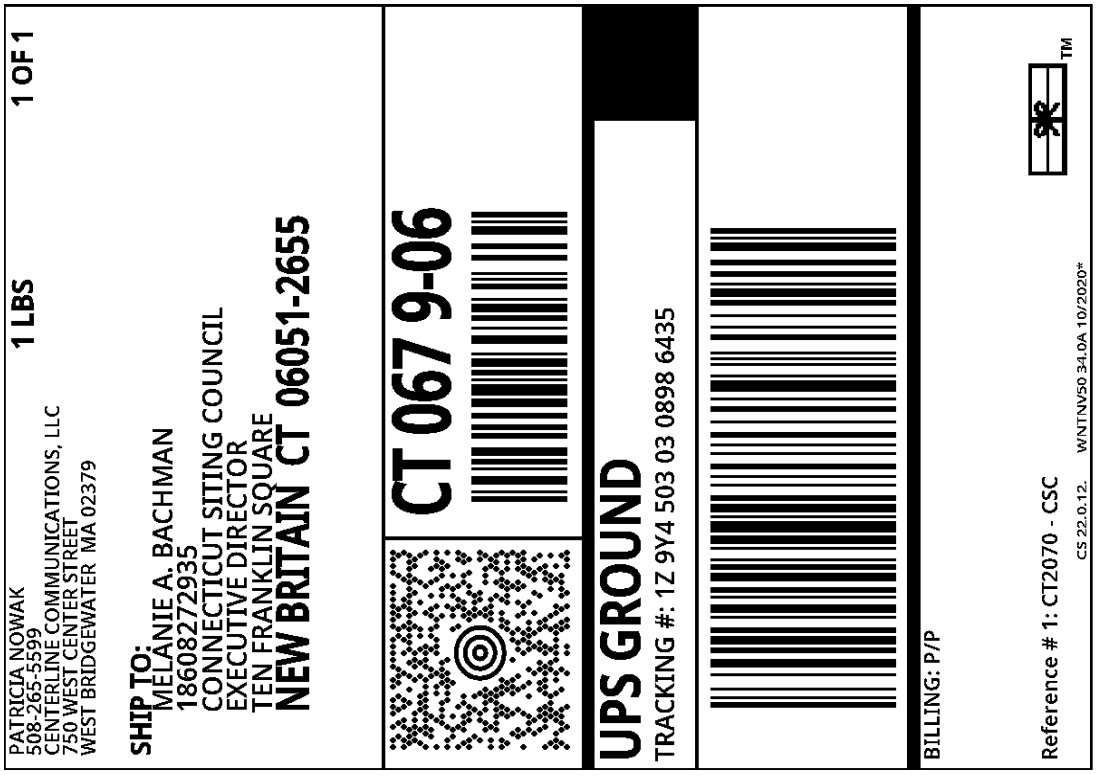

October 21, 2020

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

Regarding: Notice of Exempt Modification – AT&T Site CT2070
Address: 302 Ball Pond Road, New Fairfield, CT 06812

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (hereinafter "AT&T") currently maintains a wireless telecommunications facility on an existing 175' monopole tower (the "Tower") at the above-referenced address, latitude 41.4647169, longitude -73.4969519. Said Tower and underlying property is owned by the Town of New Fairfield.

AT&T submitted exempt modification filing EM-AT&T-091-190730 which was approved by the Council on August 19, 2019, however, the modifications have not commenced and the period of time to request an extension has expired. Therefore, AT&T is submitting a new exempt modification filing for the previously approved modifications. Those modifications include swapping (3) antennas, adding (6) remote radio units, adding (1) surge arrestor with accompanying lines and other related modifications, as more particularly detailed and described in the enclosed Construction Drawings prepared by Maser Consulting Connecticut with a last revision date of August 17, 2020. Enclosed please also find a Mount Modification Report prepared by Maser Consulting Connecticut dated May 7, 2019. The centerline height of the antennas will be at 135 feet. Enclosed please also find the above referenced Council decision as well as the Town of New Fairfield's Tower approvals.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Pat Del Monaco, First Selectman of the Town of New Fairfield and Evan White, Zoning Enforcement Officer of the Town of New Fairfield. Please note that the Tower and underlying property is owned by the Town of New Fairfield. Enclosed please find a property card and a GIS map of the property.

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

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

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

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

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

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

6. The existing structure and its foundation can support the proposed loading. *Please see the Structural Analysis Report dated June 12, 2020 and prepared by Maser Consulting Connecticut.*

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

Sincerely,

Patricia Nowak
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
pnowak@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 - Mount Analysis
Exhibit 3 – CSC Decision and Town Approvals
Exhibit 4 – Property Cards and GIS Map
Exhibit 5 – RF Emissions Analysis Report
Exhibit 6 – Structural Analysis

cc: Honorable Pat Del Monaco, First Selectman of the Town of New Fairfield
Evan White, Zoning Enforcement Officer of the Town of New Fairfield.

EXHIBIT 1

PROJECT NOTES

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
   A. PLAN ENTITLED "NEW FAIRFIELD CTR" PREPARED BY VRG OF AUBURN, MA LAST REVISED 10/31/2016.
   B. LIMITED FIELD OBSERVATION BY MASER CONSULTING ON 9/21/2018.
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-H AS PER IBC REQUIREMENTS.
16. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
17. 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.

PACE JOB #1:	MRCTB033566
PACE JOB #2:	MRCTB033596
PACE JOB #3:	MRCTB033695

SITE NAME: NEW FAIRFIELD SR37-SR39
FA NUMBER: 10035312
SITE NUMBER: CT2070
LTE - 3C/4C - 4TX4RX SOFTWARE RETROFIT
302 BALL POND ROAD
NEW FAIRFIELD, CT 06812
FAIRFIELD COUNTY

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: 41.4647169° N
LONGITUDE: 73.4969519° W
JURISDICTION: TOWN OF NEW FAIRFIELD

APPLICANT/LESSEE

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

STRUCTURE OWNER

COMPANY: TOWN OF NEW FAIRFIELD
ADDRESS: 4 BRUSH HILL ROAD
CITY, STATE, ZIP: NEW FAIRFIELD, CT 06812

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
CITY, STATE, ZIP: RED BANK, NJ 07701-5669
CONTACT: ROBERT ANDREWS
PHONE: (856) 797-0412
E-MAIL: RANDREWS@MASERCONSULTING.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- INSTALL (6) NEW RRU'S, (2) PER SECTOR
- INSTALL (3) NEW PANEL ANTENNAS, (1) PER SECTOR
- REMOVE (3) EXISTING PANEL ANTENNAS, (1) PER SECTOR
- REMOVE (6) DIPLEXERS, (2) PER SECTOR
- REMOVE (3) TMA'S, (1) PER SECTOR
- RELOCATE (6) TMA'S, (2) PER SECTOR
- INSTALL (1) NEW DC-6 SURGE SUPPRESSION DOME
- INSTALL (1) NEW 18-PAIR FIBER CABLE
- INSTALL (1) NEW FIBER SLACK BOX, AT GRADE
- INSTALL (2) NEW 6/C DC CABLES
- SWITCH BB TO 5216
- INSTALL NEW BB 6630

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2454216, VERSION 5.00, LAST UPDATED 04/16/19.

SHEET INDEX

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BILLERICA, MA 01862

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AS SHOWN	18963030A

REV.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
6	08/17/20	REVISED PER COMMENTS	JRF	MPC
5	01/10/20	REVISED PER COMMENTS	DR	DR
4	12/12/19	REVISED PER COMMENTS	JRF	DR
3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	ISSUED FOR [illegible]	AJC	RA
1	03/[illegible]/19	ISSUED FOR [illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 28[illegible]
PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFFESIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
NEW FAIRFIELD SR37-SR39
FA# 10035312
SITE# CT2070
302 BALL POND ROAD
NEW FAIRFIELD, CT 06812
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5669
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

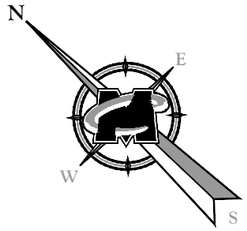
M:\Atlas_2017\2035312 New Fairfield, CT\DD_ADV & CD.dwg(T-1 By: JPASER

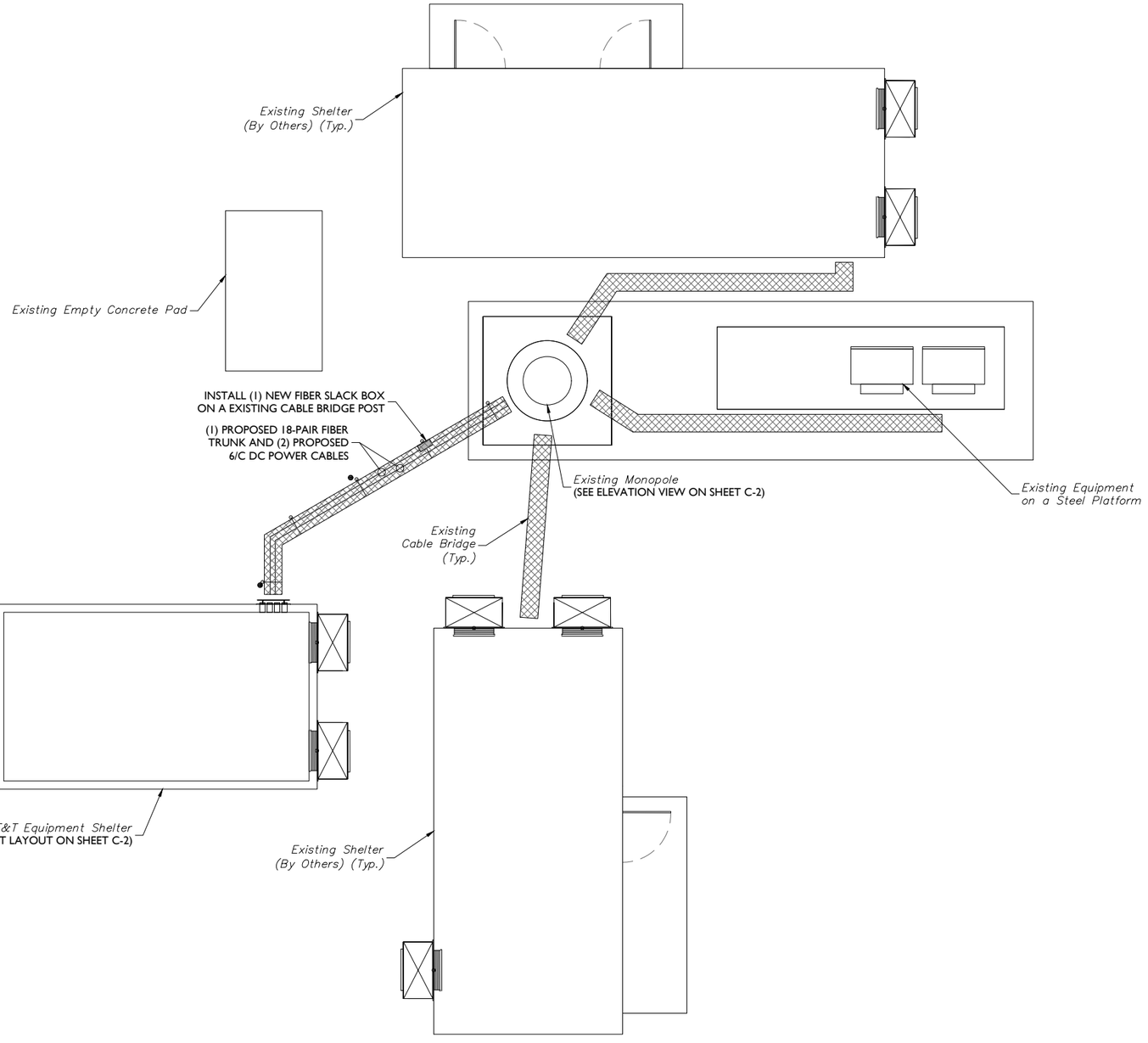
GENERAL NOTES:

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 (F_y = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (F_y = 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.





COMPOUND PLAN

4 3.2 2.4 1.6 0.8 0 2 4 8

SCALE : 1" = 4' FOR 22"X34"
(SCALE : 1" = 8' FOR 11"X17")

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5	01/10/20	REVISED PER COMMENTS	DR	DR
4	12/12/19	REVISED PER COMMENTS	JRF	DR
3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	[illegible]	AJC	RA
1	03/[illegible]/19	ISSUED FOR [illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 24867
REGISTERED PROFESSIONAL ENGINEER

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FA# 10035312
SITE# CT2070

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FAIRFIELD COUNTY

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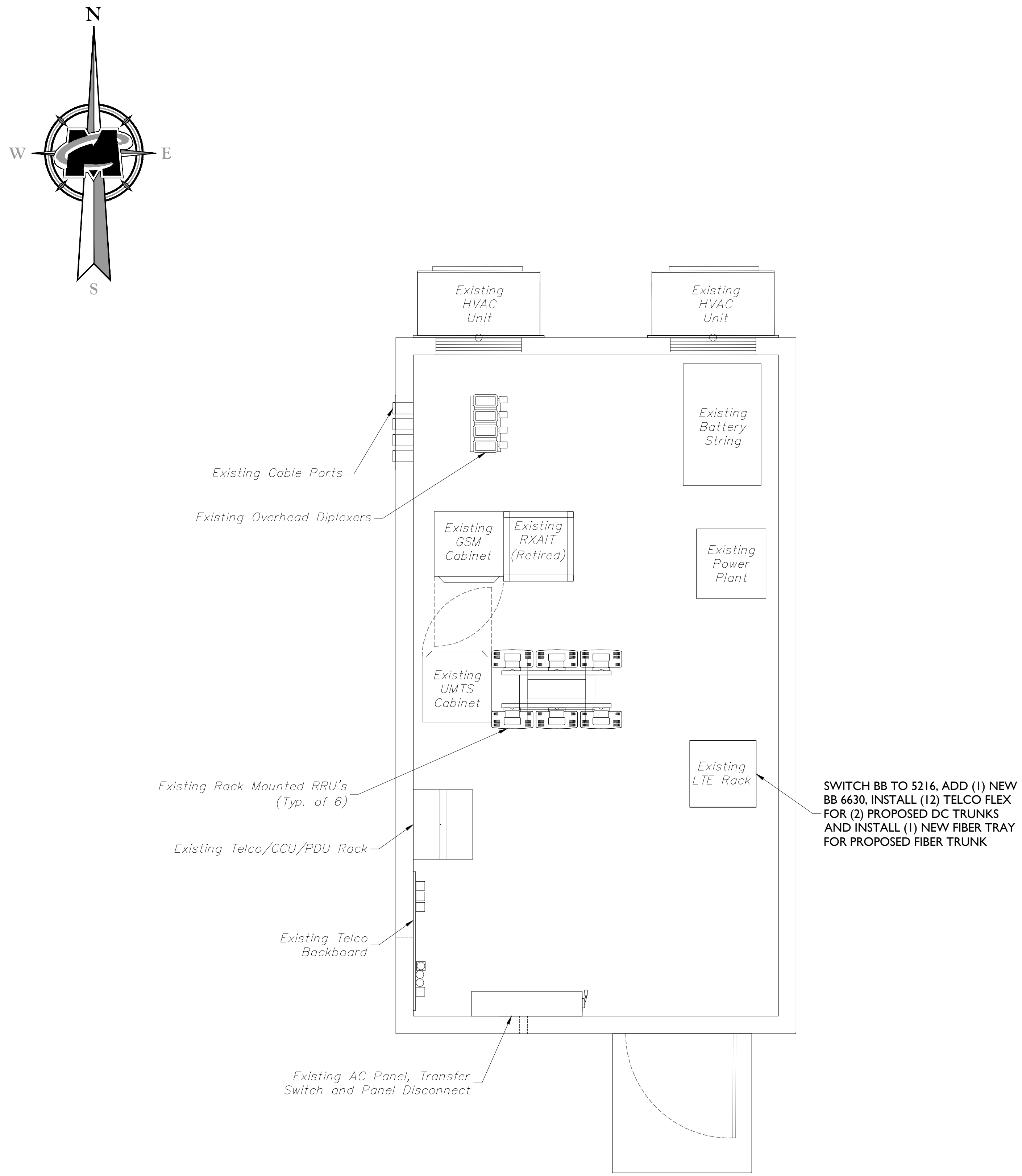
Suite 203
Red Bank, NJ 07701-5669
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

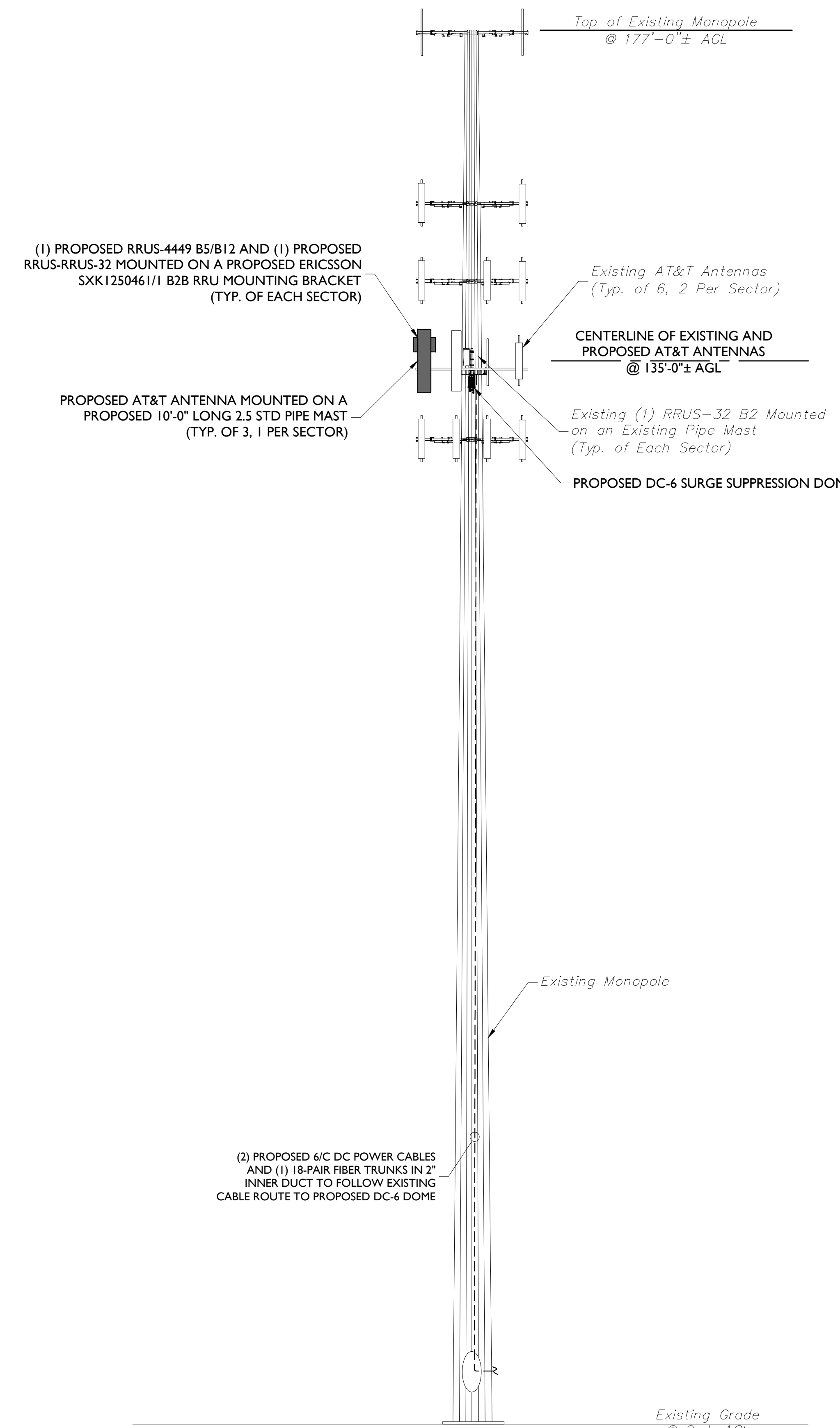
SHEET TITLE :
COMPOUND PLAN

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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4	12/12/19	REVISED PER COMMENTS	JRF	DR
3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	[illegible]	AJC	RA
1	[illegible]	ISSUED FOR [illegible]	AJC	RA
REV.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 30290

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SITE# CT2070

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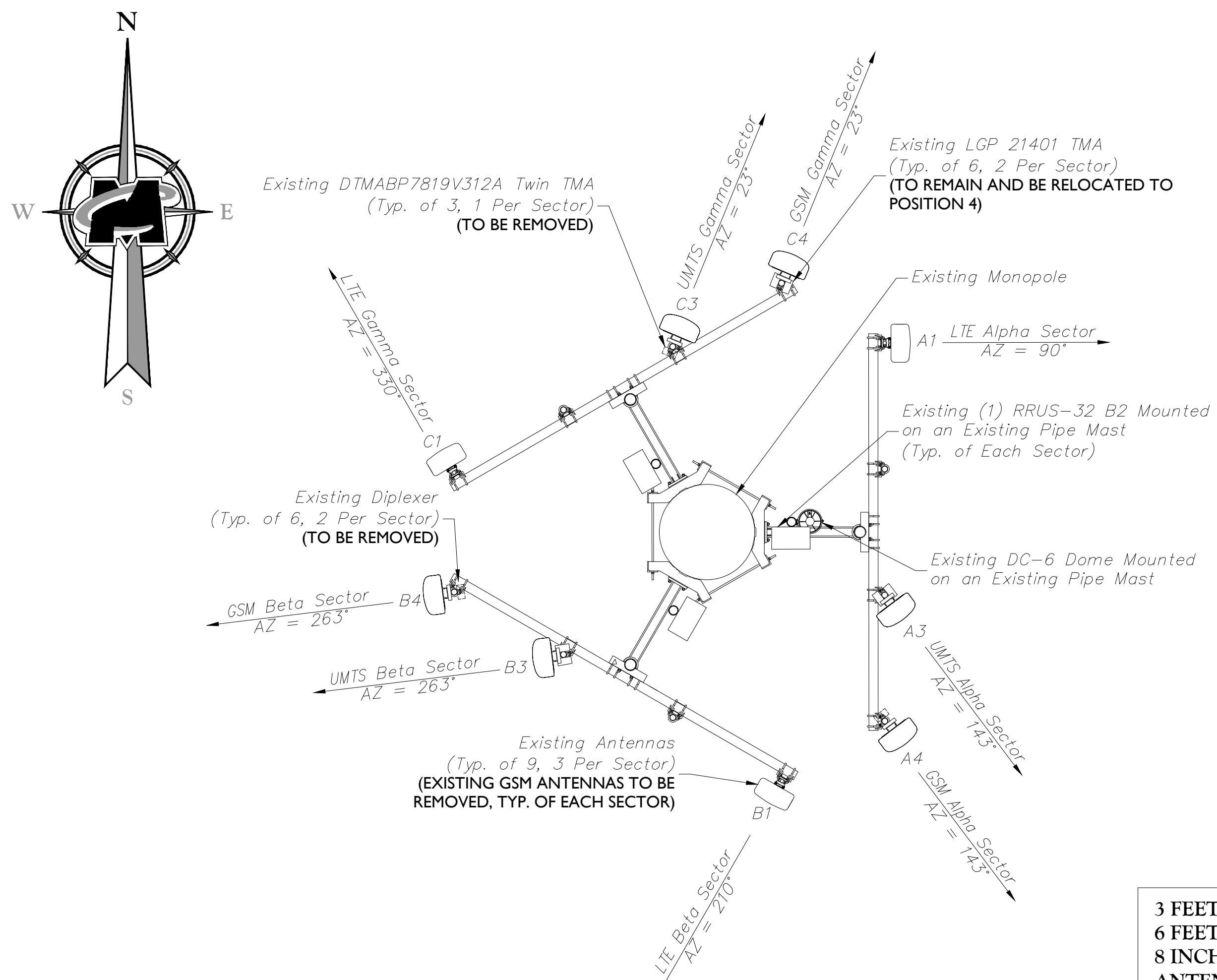
SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

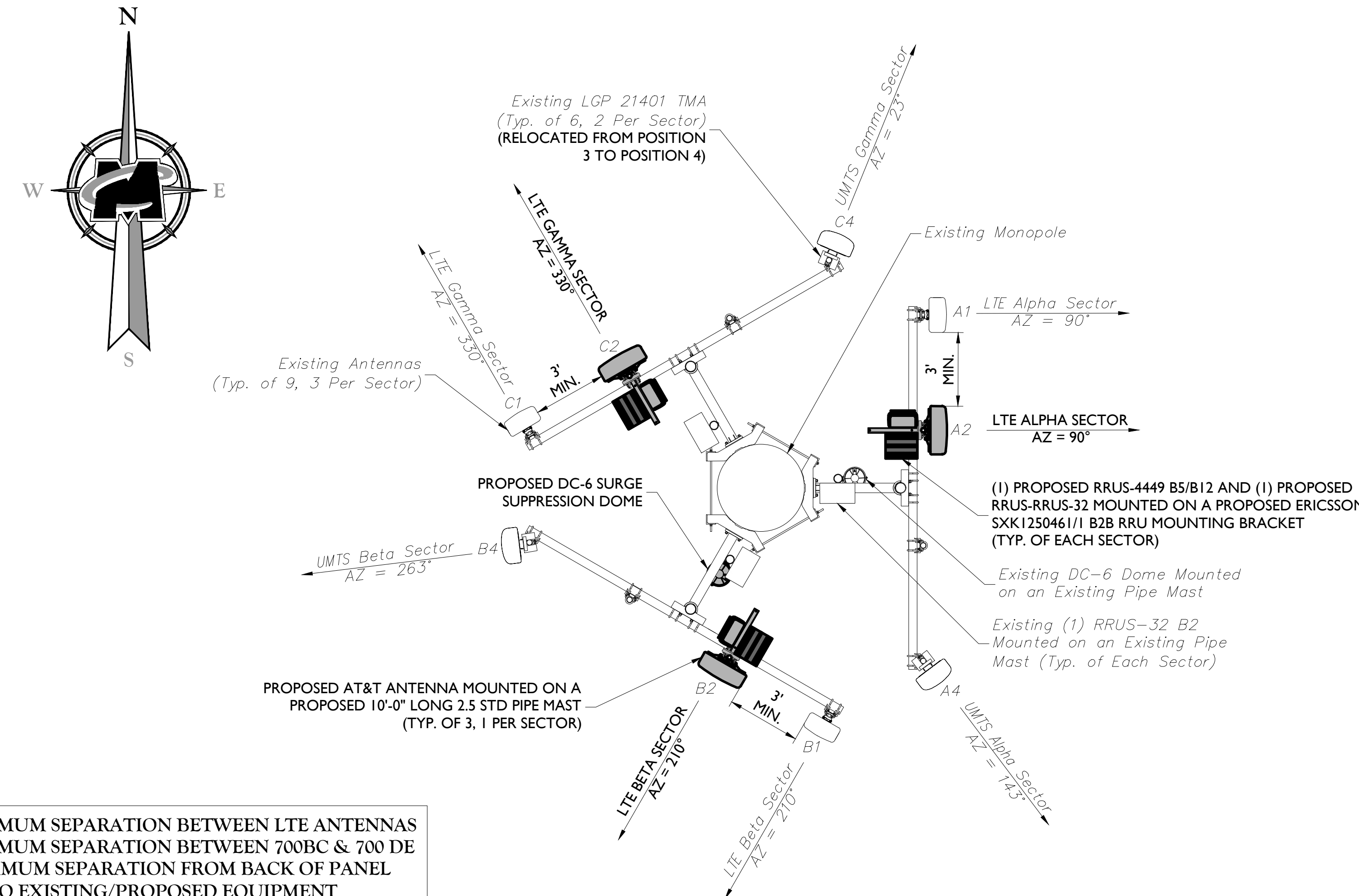
SHEET NUMBER :
C-2



EXISTING ANTENNA LAYOUT

NOT TO SCALE

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE
8 INCH MINIMUM SEPARATION FROM BACK OF PANEL ANTENNA TO EXISTING/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	TRANSMISSION CABLE TYPE	TRANSMISSION CABLE STATUS
Sector 1	1	CCI HPA-65R-BUU-H8	CCI HPA-65R-BUU-H8	LTE	EXISTING	92.80	14.40	7.30	65.60	90	135'	(1) RRUS-32 B2 (EXISTING)	1/2	FIBER/DC	EXISTING
	2		**KATHREIN 80010966**	**LTE**	**PROPOSED**	**96.00**	**20.00**	**6.90**	**125.70**	**90**	**135'**	(1) B5/B12 4449 (PROPOSED) (1) RRUS-32 (PROPOSED) (1) DC-6 DOME (EXISTING)	**1/2**	**FIBER/DC**	**SHARED**
	3	POWERWAVE 7770			**REMOVED**							-	2	1 5/8" COAX	REMAIN
	4	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	143	135'	-	2	1 5/8" COAX	EXISTING
Sector 2	1	CCI HPA-65R-BUU-H6	CCI HPA-65R-BUU-H6	LTE	EXISTING	72.30	14.40	7.30	55.50	210	135'	(1) RRUS-32 B2 (EXISTING)	1/2	FIBER/DC	SHARED
	2		**KATHREIN 80010966**	**LTE**	**PROPOSED**	**96.00**	**20.00**	**6.90**	**125.70**	**210**	**135'**	**(1) B5/B12 4449 (PROPOSED) (1) RRUS-32 (PROPOSED) (1) DC-6 DOME (PROPOSED)**	**1/2**	**FIBER/DC**	**PROPOSED**
	3	POWERWAVE 7770			**REMOVED**					-		-	2	1 5/8" COAX	REMAIN
	4	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	263	135'	-	2	1 5/8" COAX	EXISTING
Sector 3	1	CCI HPA-65R-BUU-H6	CCI HPA-65R-BUU-H6	LTE	EXISTING	72.30	14.40	7.30	55.50	330	135'	(1) RRUS-32 B2 (EXISTING)	1/2	FIBER/DC	SHARED
	2		**KATHREIN 80010966**	**LTE**	**PROPOSED**	**96.00**	**20.00**	**6.90**	**125.70**	**330**	**135'**	**(1) B5/B12 4449 (PROPOSED) (1) RRUS-32 (PROPOSED)**	**1/2**	**FIBER/DC**	**SHARED**
	3	POWERWAVE 7770			**REMOVED**							-	2	1 5/8" COAX	REMAIN
	4	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	23	135'	-	2	1 5/8" COAX	EXISTING

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3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	[illegible]	AJC	RA
1	[illegible]	ISSUED FOR [illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: [illegible]
PROFESSIONAL ENGINEER

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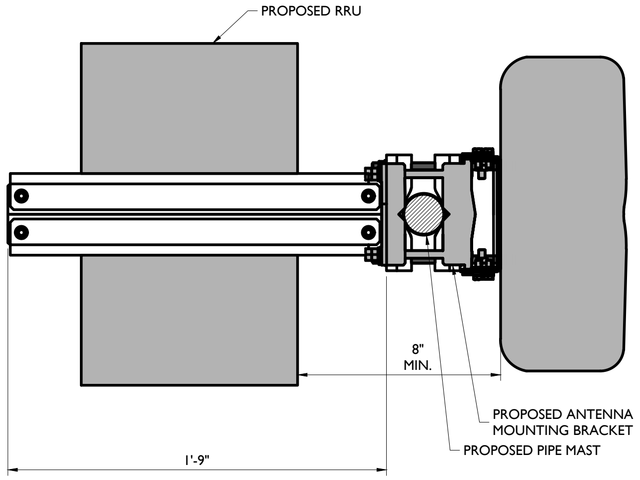
SHEET TITLE :
ANTENNA LAYOUT AND ANTENNA SCHEDULE

SHEET NUMBER :
C-3

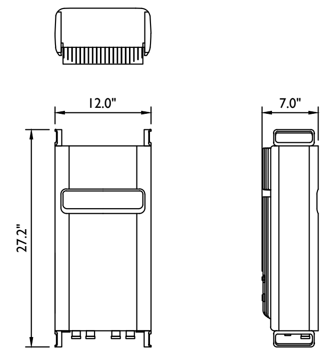


NOTE:

8" MINIMUM SEPARATION REQUIRED FROM BACK OF PANEL ANTENNA TO EXISTING/PROPOSED EQUIPMENT

ANTENNA AND RRUS MOUNTING DETAIL

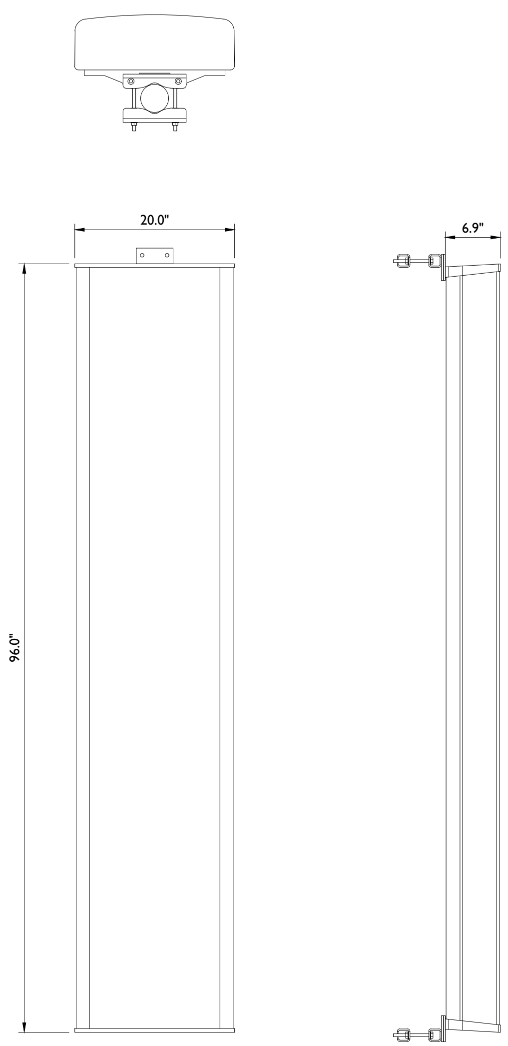
NOT TO SCALE



WEIGHT WITHOUT BRACKETS = 52.9 LB

ERICSSON RRUS-32

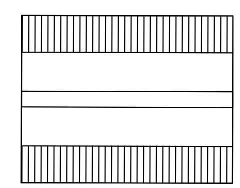
NOT TO SCALE



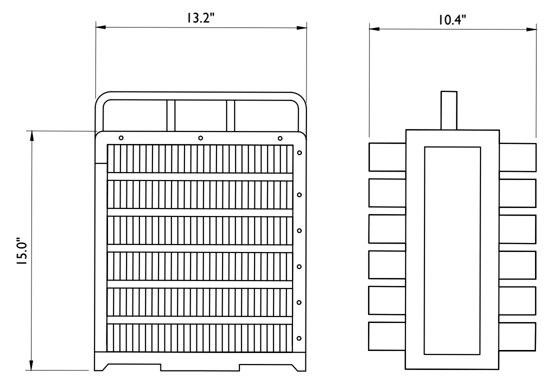
WEIGHT = 125.7 LB

KATHREIN 80010966

NOT TO SCALE



PLAN VIEW

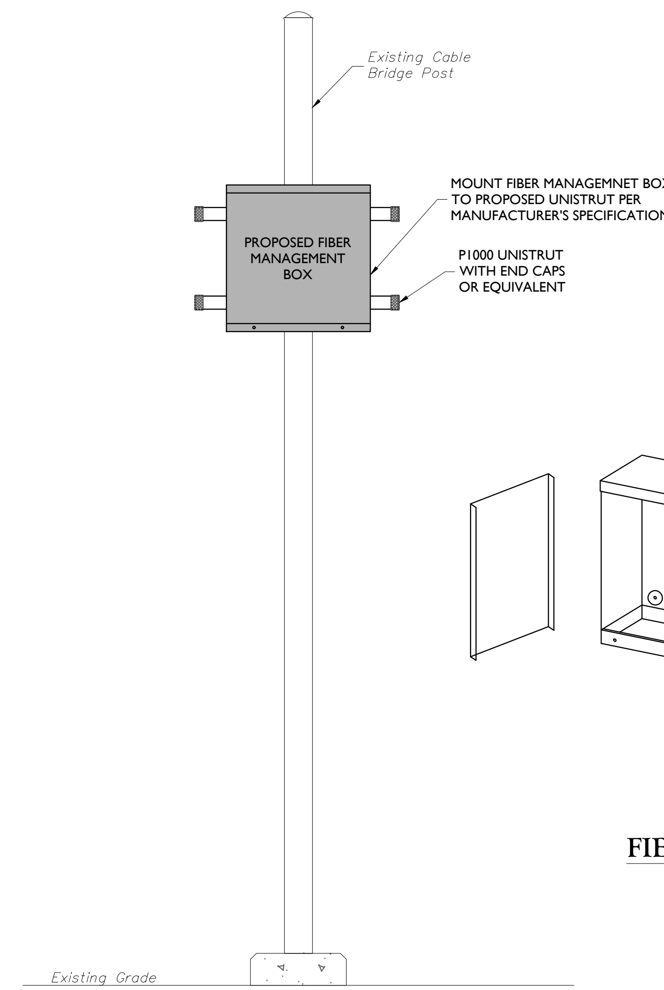


FRONT VIEW SIDE VIEW

WEIGHT = 73.0 LBS (INCLUDES SUNSHIELD AND DOUBLE FILTER CHASSIS)

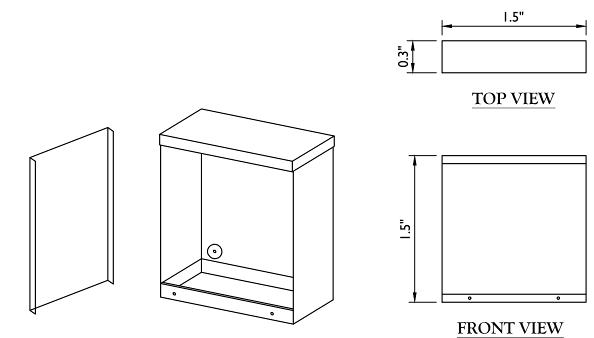
ERICSSON DUAL BAND RRU4449 B5+B12 DETAIL

NOT TO SCALE



FIBER SLACK BOX & MOUNTING DETAIL

NOT TO SCALE



NOTES:

1. ANDREW PART NUMBER FE-18184
2. WEIGHT = 9.8 LBS.
3. REFER TO MANUFACTURER'S SPECIFICATIONS FOR CONNECTION TO POST.

FIBER STORAGE BOX DETAIL

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3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	[illegible]	AJC	RA
1	[illegible]	ISSUED FOR [illegible]	AJC	RA

STATE OF CONNECTICUT PETROS TSOUKALAS LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: [illegible]

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FA# 10035312
SITE# CT2070

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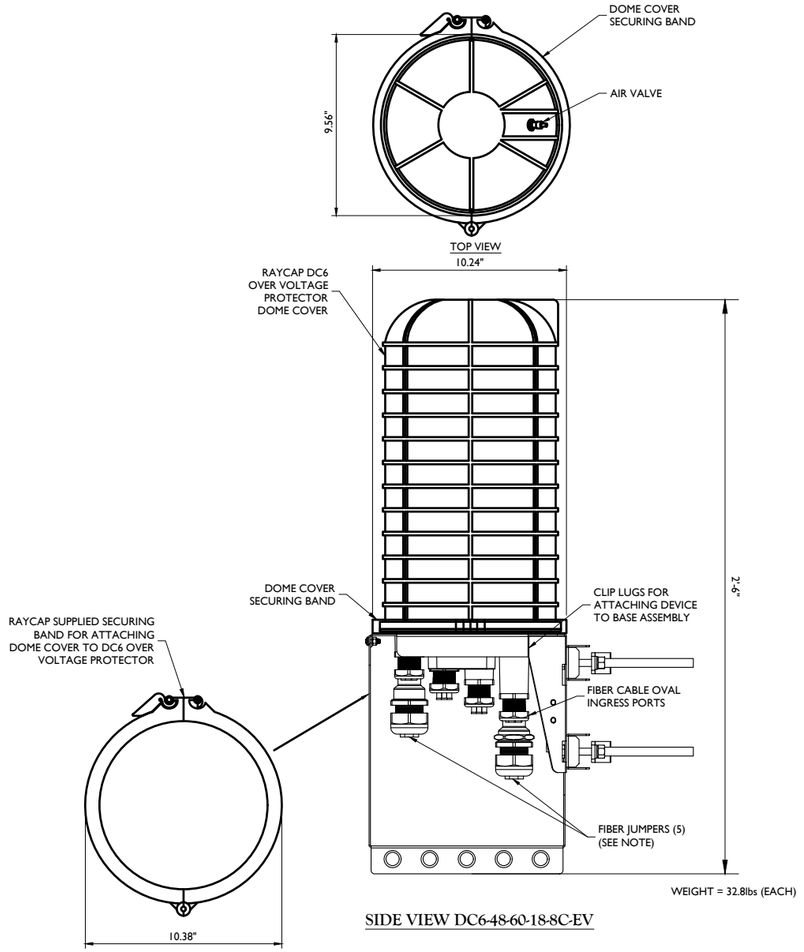
SHEET TITLE :

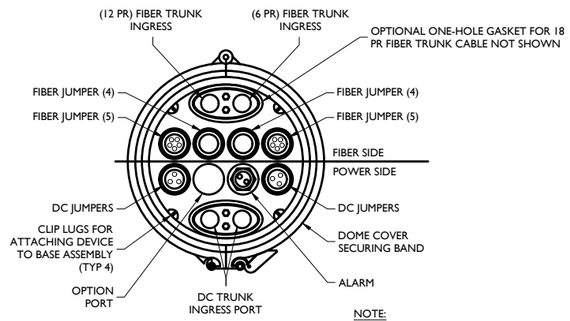
DETAILS

SHEET NUMBER :

A-1



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



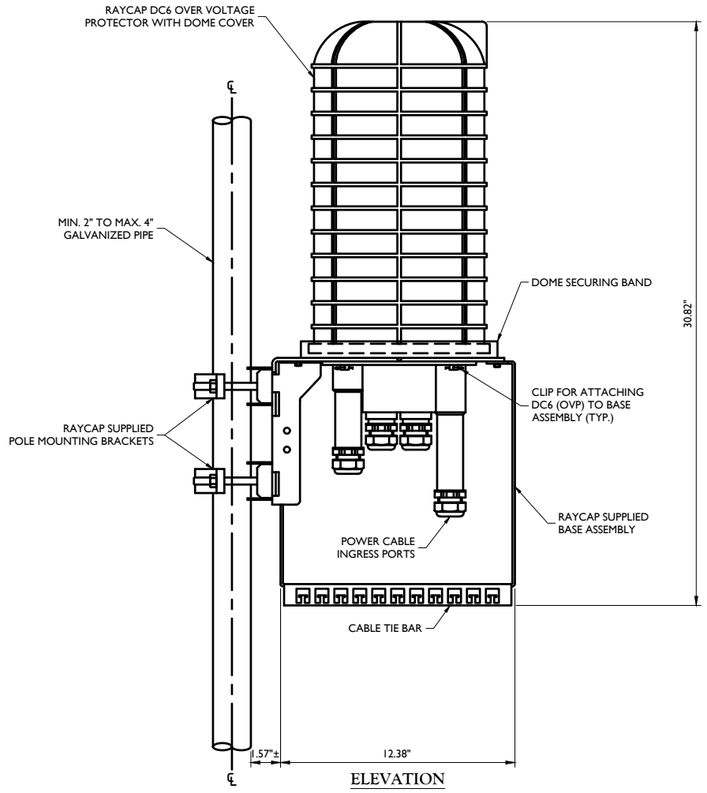
BOTTOM VIEW
DC6-48-60-18-8C-EV

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

RAYCAP DC6-48-60-18-8C -EV
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY

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2	04/26/19	ISSUED FOR REVIEW	AJC	RA
1	01/11/19	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 28021
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

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FA# 10035312
SITE# CT2070

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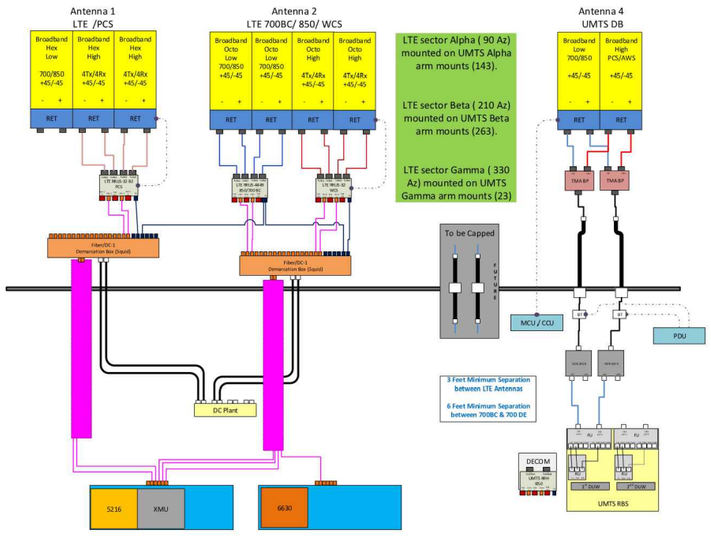
SHEET TITLE : DETAILS

SHEET NUMBER : A-2

Diagram - Sector A | Diagram File Name - NR_CT2070_A_B_C_BrzStd_LTE_4C_R1.02.vsd

Atoll Site Name - CT2070 | Location Name - NEW FAIFIELD SR37-SR39 | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson "

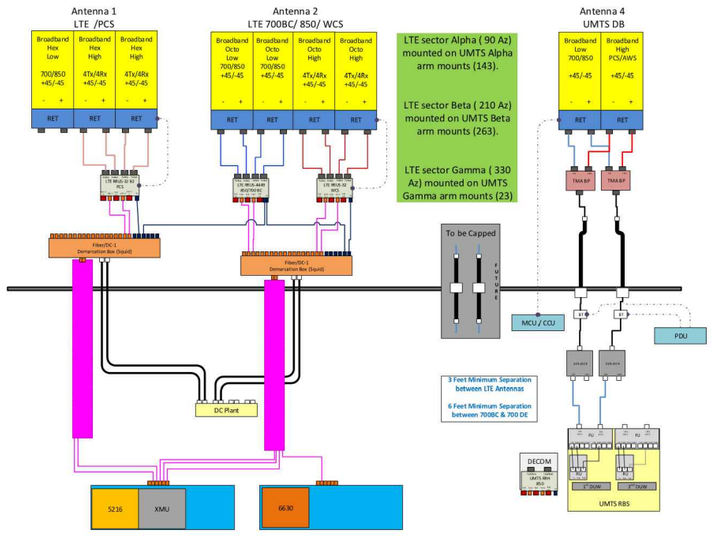


ALPHA SECTOR

Diagram - Sector B | Diagram File Name - NR_CT2070_A_B_C_BrzStd_LTE_4C_R1.02.vsd

Atoll Site Name - CT2070 | Location Name - NEW FAIFIELD SR37-SR39 | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson "

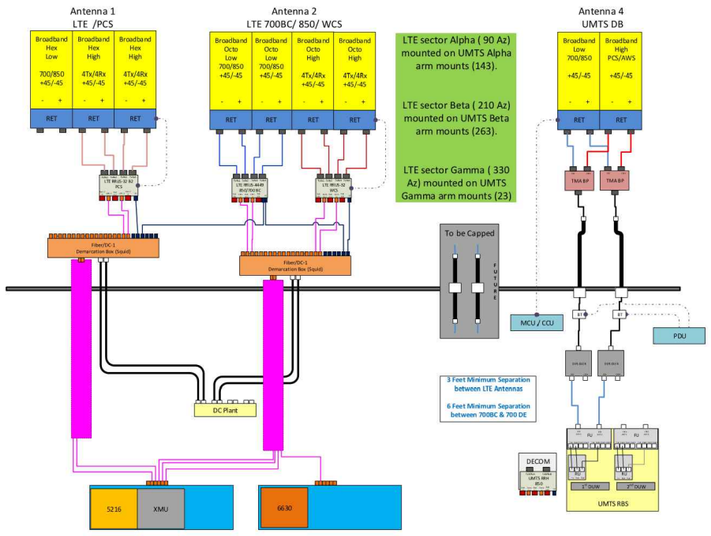


BETA SECTOR

Diagram - Sector C | Diagram File Name - NR_CT2070_A_B_C_BrzStd_LTE_4C_R1.02.vsd

Atoll Site Name - CT2070 | Location Name - NEW FAIFIELD SR37-SR39 | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson "



GAMMA SECTOR

BASED ON RF ENGINEERING DESIGN ENTITLED "10035312.PM201.RFDS.AS-BUILT-IN-PROGRESS.CT2070", LAST REVISED 04/16/19.

RF PLUMBING DIAGRAMS

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1	03/[illegible]/19	ISSUED FOR [illegible]	AJC	RA

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 28[illegible]

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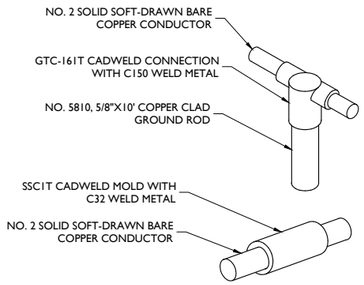
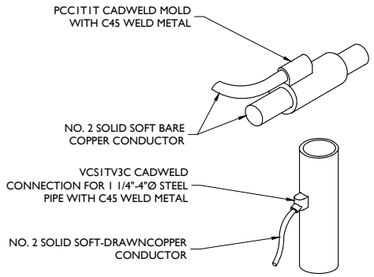
SHEET TITLE : RF PLUMBING DIAGRAM

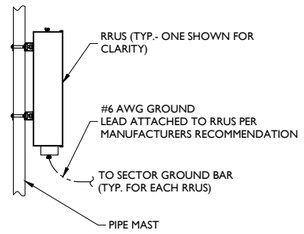
SHEET NUMBER : A-3

M:\Atoll_10971\10035312 New Fairfield_CT2070_ROV 6_CD.dwg\A-3 By: JRA508

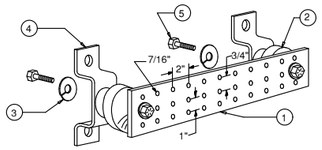




CADWELD DETAILS
NOT TO SCALE



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.

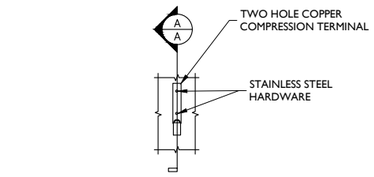
SECTION "P" - SURGE PRODUCERS

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.

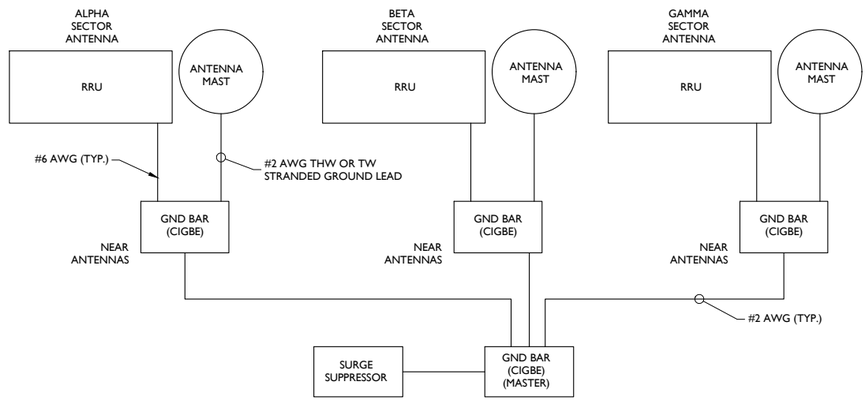
SECTION "A" - SURGE ABSORBERS

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

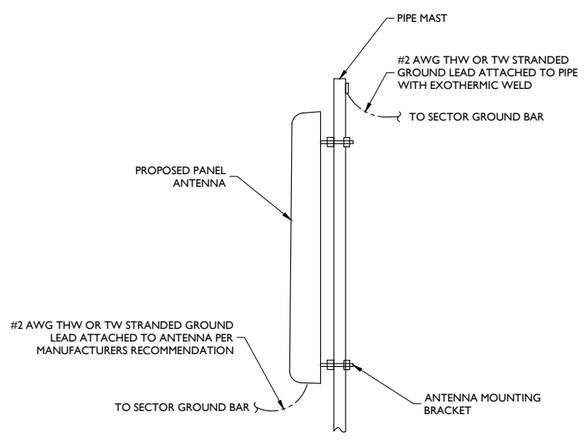
MASTER GROUND BAR
NOT TO SCALE



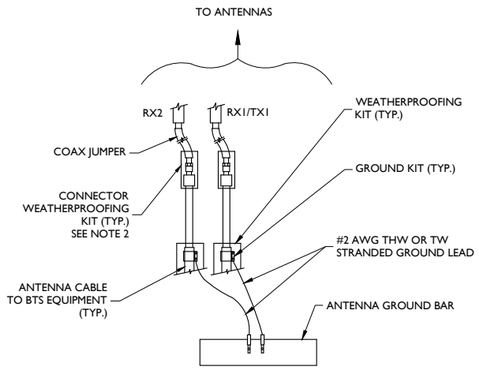
TYPICAL GROUND BAR CONNECTION DETAIL
NOT TO SCALE



SCHEMATIC DIAGRAM GROUNDING SYSTEM



ANTENNA GROUNDING
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
NOT TO SCALE

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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN
JOB NUMBER : 18963030A

REV.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
6	08/17/20	REVISED PER COMMENTS	JRF	MPC
5	01/10/20	REVISED PER COMMENTS	DR	DR
4	12/12/19	REVISED PER COMMENTS	JRF	DR
3	10/24/19	ISSUED AS FINAL	JRF	DR
2	04/26/19	ISSUED FOR [illegible]	AJC	RA
1	04/19	ISSUED FOR [illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER: 28762

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFFESIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

NEW FAIRFIELD SR37-SR39
FA# 10035312
SITE# CT2070

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5669
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
GROUNDING DETAILS

SHEET NUMBER :
G-1

EXHIBIT 2

Engineers Planners Surveyors Landscape Architects Environmental Scientists

MASER CONSULTING
— CONNECTICUT—

Mount Modification Report

FOR

CT2070 - New Fairfield

FA #: 10035312
302 Ball Pond Road
New Fairfield, CT, 06812, Fairfield County
41.4647169, -73.4969519

Mount Utilization: 89.0%*

***Sufficient upon completion of the modifications listed in the 'Recommendations' section of this report.**

May 7, 2019

Prepared For

AT&T Mobility
550 Cochituate Road
Framingham, MA 01701

Prepared By

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
732.383.1950

STATE OF CONNECTICUT PETROS TSOUKALAS 32577 PROFESSIONAL ENGINEER

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader
CT License No. 32577

MC Project No. 18963030A

Objective:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting Connecticut has reviewed the following documents in completing this report:

Document Type	Remarks	Source
Radio Frequency Data Sheet (RFDS)	*RFDS ID: 2454216 Version 4.00 dated 2/15/19*	*Empire Telecom*
Preliminary Construction Drawings	*Maser Consulting Project #: 18963030A, dated 3/5/19*	*Maser Consulting*
Mount Mapping	*Tower Engineering Professionals Project #: 152002.242512 dated 4/10/19*	*Maser Consulting*
Mount Analysis	*Maser Consulting Project #: 18963030A dated 4/8/19*	*Maser Consulting*
Handrail Reinforcement Kit	*Site Pro 1 Part #: PRK-SFS*	*Site Pro 1*
Crossover Plate	*Site Pro 1 SCX1-K*	*Site Pro 1*

Codes, Standards and Loading:

Jurisdictional adopted codes and standards:

- 2018 Connecticut Building Code (2015 IBC)

Maser Consulting Connecticut utilized the following codes and standards:

- Structural Standards for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures ANSI/TIA-222-H
    - Ultimate Wind Speed – 115 mph (3-Second Gust)
    - Exposure Category – C
    - Risk Category – II
    - Topographic Factor, K_{zt} – 1.0
    - Mean Base Elevation (AMSL) – 821.28’
    - Ice Wind Speed – 50 mph (3-Second Gust)
    - Design Ice Thickness – 1.0”
    - Maintenance Wind Speed –0 mph*
        - Maintenance Live Load –0 lb*
        - Maintenance Live Load – 0 lb*

***In accordance with AT&T’s Mount Technical Directive, AT&T forbids the addition of live loads to this type of mount.**

The following equipment has been considered for the analysis of the antenna mount(s):

Carrier	Mount Elevation (ft)	Quantity	Manufacturer	Model	Status	Mount
AT&T Mobility	*135.0*	*3*	*Kathrein*	*800 10966*	*Proposed*	*Modified Sector Mounts*
		3	*Ericsson*	*RRUS 4449 B2/B12*		
		3	*Ericsson*	*RRUS-32*		
		1	*Raycap*	*DC6-48-60-18-8C-EV*		*Standoff Mount*
		1	*Raycap*	*DC6-48-60-18-8F*	*Existing*	
		3	*Ericsson*	*RRUS-32 B2*		
		2	*CCI*	*HPA-65R-BUU-H6*		*Modified Sector Mounts*
		1	*CCI*	*HPA-65R-BUU-H8*		
		3	*Powerwave*	*7770*		
		6	*Powerwave*	*LGP 21401*		

Analysis Approach:

The antenna mount has been modeled in RAM Elements (V15 15.00.00.18), a comprehensive structural analysis program. The program performs design checks of structures under user specified loads. The user specified loads have been calculated separately based on the requirements of the above referenced codes and standards. The program performs an analysis based on the applicable steel code to determine the adequacy of the members and produces the reactions at the connection points of the mounts to the existing structure.

The scope of this assessment does not include analysis of the supporting tower structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent engineer.

Assumptions:

General Site Design Assumptions:

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut and used in this analysis is current and correct.
2. The mounting frames were properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
3. Due to site specific analysis parameters, it is assumed that wind forces will control over seismic forces and as such, seismic forces have not been considered in this analysis.
4. It is the responsibility of the client to ensure that the information provided to Maser Consulting Connecticut and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that the original design, material production, fabrication, and erection of the existing structure was performed in accordance with accepted industry design standards and in accordance with all applicable codes. Further, it is assumed that the existing structure and appurtenances have been properly maintained in accordance with all applicable codes and manufacturer's specifications and no structural defects and/or deterioration to the structural members has occurred.
5. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
6. The existing equipment loading has been applied at locations determined from the supplied documentation and field observations. Should the existing equipment configuration differ from what is utilized in this analysis, the results of this analysis are invalid.
7. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

Site Specific Assumptions and Design Parameters:

1. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
    - Plate — ASTM A36 (Gr. 36)
    - HSS (Rectangular) — ASTM 500 (Gr. B-46)
    - Pipe — ASTM A53 (Gr. B-35)
    - Bolts — ASTM A325
2. All proposed equipment locations are to be as depicted in the rendered diagram in Appendix A of this report. Any changes made to the proposed equipment locations will render this report invalid.
3. Existing equipment locations, quantities, and model numbers are considered as shown in the above referenced mount mapping for the purposes of this analysis. Antennas and ancillary equipment have been relocated as noted in the rendered diagram included in Appendix A to match the equipment layout depicted in the plumbing diagram of the above referenced RFDS.
4. The existing RRUS 11 was not shown in the plumbing diagram and has not been considered for the purposes of this analysis.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.

Calculations:

Selected calculations and analysis output can be found in Appendix A of this report.

Analysis Results and Conclusion:

Component	Utilization %	Pass/Fail
Face Horizontal	*48.0*	*Pass*
Kicker	*9.0*	*Pass*
Mast Pipe	*0.0*	*Pass*
Mod Face Horizontal	*28.0*	*Pass*
Mount Pipe	*71.0*	*Pass*
Standoff Horizontal	*44.0*	*Pass*
Threaded Rod Standoffs	*56.0*	*Pass*
Mount Connection	*89.0*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	***89.0%***

Recommendation:

In order for the results of this analysis to be considered valid, the modifications listed below and shown in Appendix B shall be completed on all sectors:

- Install “handrail reinforcement kit” (Site Pro 1 Part #: PRK-SFS or EOR approved equivalent) to new 120” long P2.0 STD face horizontal members. Connect new horizontals to existing mount pipes with crossover plates (Site Pro 1 Part #: SCX1-K or EOR approved equivalent) (Typical per sector) [mount modification sketch and specification sheets attached].

The conclusions reached by Maser Consulting Connecticut in this evaluation are only applicable for the structural members supporting the AT&T Mobility telecommunications installation described herein. Further, no structural qualifications are made or implied by this document for the existing structure. The mount was checked up to, and including, the bolts that fasten it to the tower leg. However, no structural qualifications are made or implied by this document for the tower leg.

Maser Consulting Connecticut reserves the right to amend this report if additional information regarding the members is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the appurtenances listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,
Maser Consulting Connecticut

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

Disclaimer of Warranties:

The engineering services rendered by Maser Consulting Connecticut in connection with this structural analysis are limited to a computer analysis of the mounting frame structure and theoretical capacity of its main structural members. No allowance has been made for any damaged, bent, missing, loose, or rusted members or connections.

Maser Consulting Connecticut will accept no liability which may arise due to any deficiency in design, material, fabrication, erection, construction, or lack of maintenance. Maser Consulting Connecticut has not performed a site visit of the mounting frame to verify member sizes or equipment loading. Contractor should inspect the condition of the existing structure, mounting frames and connections and notify Maser Consulting Connecticut of any discrepancies or deficiencies before proceeding with installation.

The attached sketch is a schematic representation of the analyzed mounting frames. The contractor shall be responsible for field verifying the existing conditions, proper fit, and clearances in the field.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as part of our work. We recommend that material of suitable size and strength be purchased from a reputable manufacturer.

Maser Consulting Connecticut makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of the mounting frames. Maser Consulting Connecticut will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report.

APPENDIX: A

MASER

Site Info

Maser Job Number	18963030A
Date	5/7/2019
Site ID	10035312
Standard	TIA-222-H
Structure Type	Monopole Tower
Structure Height (ft)	177
Structure Class	II
Antenna Centerline (ft)	135
Mean Base Elevation	821.28 ft AMSL
Mount Type	T-Frame
Wind Speed (mph)	115
Exposure Category	C
Topographic Category	1
Kzt	1.00
Ss	0.00
Design Ice Thickness Type	Factored ASCE 7-16 (500 - Year Return)
Design Ice Thickness (in)	1
Ice Wind Speed (mph)	50
MLL Ice Thickness (in)	0
MLL Wind Speed (mph)	30
I (wind, no ice)	1.00
I (wind, with ice)	1.00
I (ice)	1.00
GH	1.00
Kz	1.35
Ke	0.97
Ks	1.00
Ka	0.90
Kd	0.95
Kiz	1.15
tiz	1.15 in
tiz_MLL	0.00 in

Seismic Calcs

R	2.0
As	1.0
I (seismic)	1.0
S1	0
Site Class	D
Fa	1.600
SDS	0.000
Cs	0.030

Wind Pressure

qz (no ice)	37.9 lb/ft2
qz (ice)	7.2 lb/ft2
qz (MLL)	2.6 lb/ft2

Seismic Multipliers

Vertical Seismic Multiplier	0.000
Lateral Seismic Multiplier	0.030

Distributed Loading (Per Mount Member)

Mount Member Description	Mount Member Shape	Wind Dist. Load (lb/ft)			Ice Dist. Load (lb/ft)	
		No Ice	Ice	MLL Ice	Ice	MLL Ice
RE	Rigid Element	-	-	-	-	-
Standoff Horizontal	HSS_SQR 4X4X3_16	**17.8**	**6.4**	**1.7**	**8.5**	-
Face Horizontal	P 3.00	**13.3**	**4.2**	**0.9**	**6.5**	-
Mast Pipe	P 4.00	**17.0**	**4.9**	**1.2**	**7.9**	-
MPRE	Rigid Element	-	-	-	-	-
MP	P 2.00	**9.0**	**3.3**	**0.6**	**5.0**	-
MP2	P 2.00	-	-	-	**5.0**	-
MP4	P 2.00	-	-	-	**5.0**	-
Threaded Rods	RndBar 1_2	**1.9**	**2.0**	**0.1**	**2.3**	-
MP1	P 2.00	-	-	-	**5.0**	-
Kicker	L 2-1_2X2-1_2X3_16	**15.8**	**4.6**	**1.1**	**6.6**	-
Mod Face Horizontal	P 2.00	**9.0**	**3.3**	**0.6**	**5.0**	-
	-	-	-	-	-	-
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	-	-	-	-	-	-

List of Equipment

Manufacturer	Appurtenance	Type	Height	Width	Depth	Weight	Dia.	Front EPA (No Ice)		Side EPA (No Ice)		Front Wind (Ice)		Side Wind (Ice)		Front Wind (MLL ice)		Side Wind (MLL Ice)	
			(in)	(in)	(in)	(lbs)	(in)	Ca	EPA (ft^2)	Ca	EPA (ft^2)	Ca	EPA (ft^2)	Ca	EPA (ft^2)	Ca	EPA (ft^2)	Ca	EPA (ft^2)
CCI	HPA-65R-BUU-H8	Flat	92.4	14.8	7.4	73		1.37	13.00	1.58	7.52	1.34	15.05	1.49	9.53	1.37	13.00	1.58	7.52
Kathrein	80010966	Flat	96	20	6.9	114.6		1.30	17.36	1.63	7.51	1.29	19.62	1.52	9.57	1.30	17.36	1.63	7.51
POWERWAVE TECHNOLOGIES	7770	Flat	55	11	5	35		1.31	5.51	1.53	2.93	1.28	6.80	1.43	4.16	1.31	5.51	1.53	2.93
Ericsson	RRUS-32	Flat	27.2	12.1	7	53		1.20	2.74	1.26	1.66	1.20	3.54	1.23	2.34	1.20	2.74	1.26	1.66
Ericsson	RRUS 4449 B5/B12	Flat	14.96	13.19	10.43	73		1.20	1.64	1.20	1.30	1.20	2.23	1.20	1.83	1.20	1.64	1.20	1.30
Powerwave Technologies	TME-LGP21401	Flat	14.4	9.2	2.6	14.1		1.20	1.10	1.34	0.35	1.20	1.60	1.24	0.71	1.20	1.10	1.34	0.35

v7.3.24

Equipment Loading by Member Description

Site ID: 10035312

Member ID: MP1

Mount Face: Normal

Appurtenance #	Model #	Flipped?	Shielding % Front	Shielding % Side	# of cnx	Full Wind (lbs) Weight	Full Wind (lbs) Front Wind	Full Wind (lbs) Side Wind	Wind with Ice (lbs) Weight	Wind with Ice (lbs) Front Wind	Wind with Ice (lbs) Side Wind	Wind with MLL (lbs) Weight	Wind with MLL (lbs) Front Wind	Wind with MLL (lbs) Side Wind	Seismic (lbs) Vertical	Seismic (lbs) Lateral
1	HPA-65R-BUU-H8	No	0%	0%	2	**36.5**	**246.2**	**142.4**	**90.7**	**53.9**	**34.1**	**0.0**	**16.8**	**9.7**	**0.0**	**1.1**
2	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
3	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
4	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
5	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
6	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-

Member ID: MP2

Mount Face: Normal

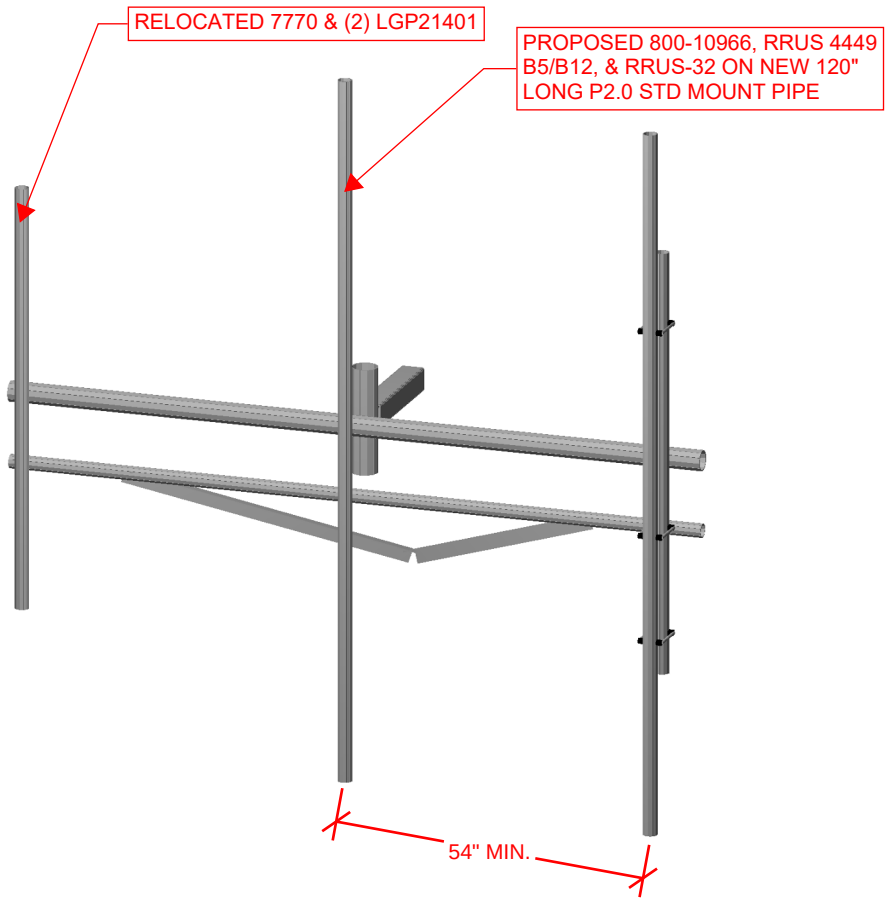
Appurtenance #	Model #	Flipped?	Shielding % Front	Shielding % Side	# of cnx	Full Wind (lbs) Weight	Full Wind (lbs) Front Wind	Full Wind (lbs) Side Wind	Wind with Ice (lbs) Weight	Wind with Ice (lbs) Front Wind	Wind with Ice (lbs) Side Wind	Wind with MLL (lbs) Weight	Wind with MLL (lbs) Front Wind	Wind with MLL (lbs) Side Wind	Seismic (lbs) Vertical	Seismic (lbs) Lateral
1	80010966	No	0%	0%	2	**57.3**	**328.9**	**142.3**	**112.3**	**70.3**	**34.3**	**0.0**	**22.4**	**9.7**	**0.0**	**1.7**
2	RRUS 4449 B5/B12	No	0%	0%	1	**73.0**	**62.3**	**49.3**	**43.7**	**16.0**	**13.1**	**0.0**	**4.2**	**3.4**	**0.0**	**2.2**
3	RRUS-32	No	0%	0%	1	**53.0**	**103.9**	**63.0**	**53.4**	**25.4**	**16.7**	**0.0**	**7.1**	**4.3**	**0.0**	**1.6**
4	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
5	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
6	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-

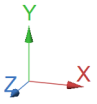
Member ID: MP3

Mount Face: Normal

Appurtenance #	Model #	Flipped?	Shielding % Front	Shielding % Side	# of cnx	Full Wind (lbs) Weight	Full Wind (lbs) Front Wind	Full Wind (lbs) Side Wind	Wind with Ice (lbs) Weight	Wind with Ice (lbs) Front Wind	Wind with Ice (lbs) Side Wind	Wind with MLL (lbs) Weight	Wind with MLL (lbs) Front Wind	Wind with MLL (lbs) Side Wind	Seismic (lbs) Vertical	Seismic (lbs) Lateral
1	7770	No	0%	0%	2	**17.5**	**104.3**	**55.5**	**41.2**	**24.3**	**14.9**	**0.0**	**7.1**	**3.8**	**0.0**	**0.5**
2	TME-LGP21401	Yes	0%	100%	1	**14.1**	**13.2**	**0.0**	**19.4**	**5.0**	**0.0**	**0.0**	**0.9**	**0.0**	**0.0**	**0.4**
3	TME-LGP21401	Yes	0%	0%	1	**14.1**	**13.2**	**41.8**	**19.4**	**5.0**	**11.5**	**0.0**	**0.9**	**2.8**	**0.0**	**0.4**
4	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
5	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-
6	0	No	0%	0%	0	-	-	-	-	-	-	-	-	-	-	-

Project: 18963030A
Client: Empire
Structural Engineer: JRH
Modified: 5/7/2019

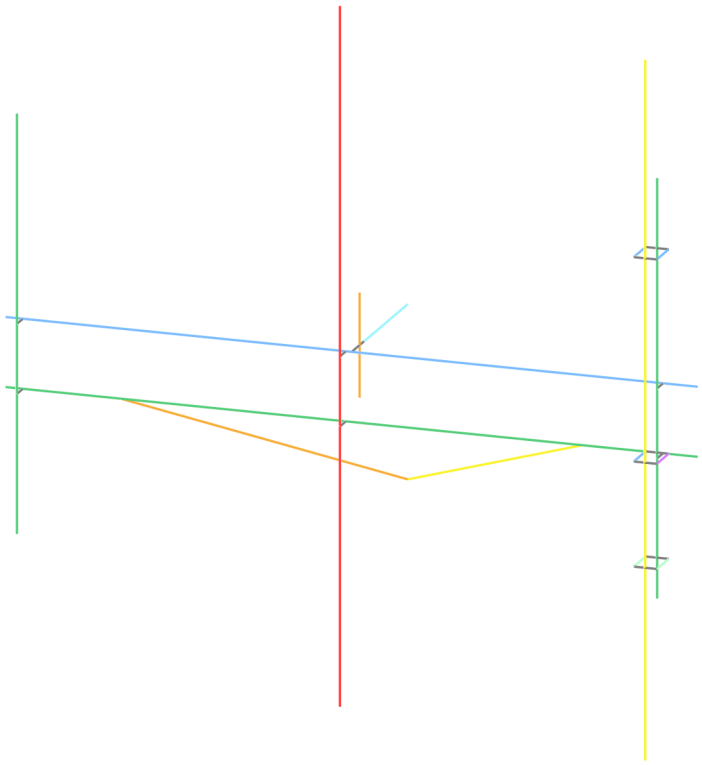


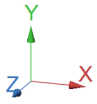


Project: 18963030A
Client: Empire
Structural Engineer: JRH
Modified: 5/7/2019

Stress ratio
AISC/AISI/BS/AS/CSA/NDS

0.71
0.63
0.55
0.47
0.40
0.32
0.24
0.16
0.08
0.00





Project: 18963030A
Client: Empire
Structural Engineer: JRH
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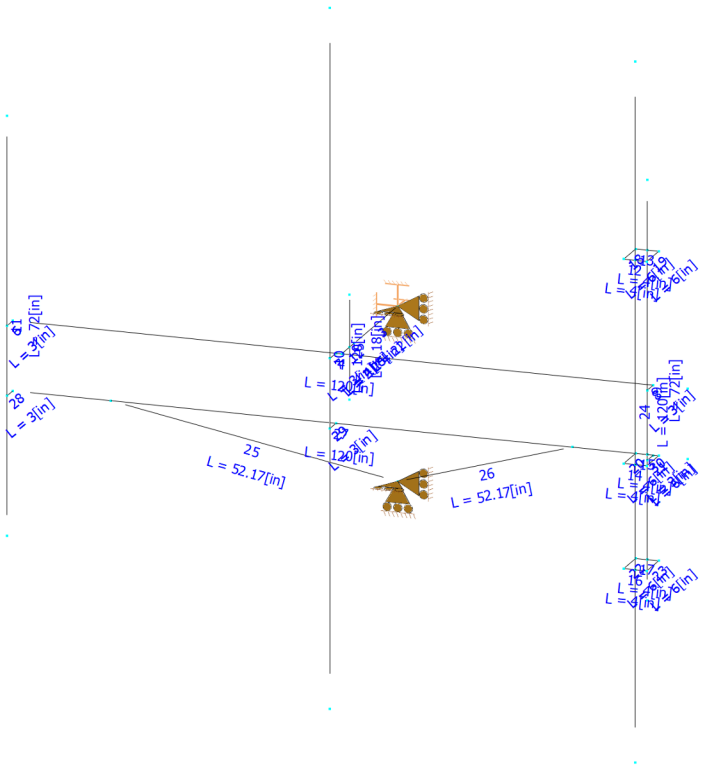
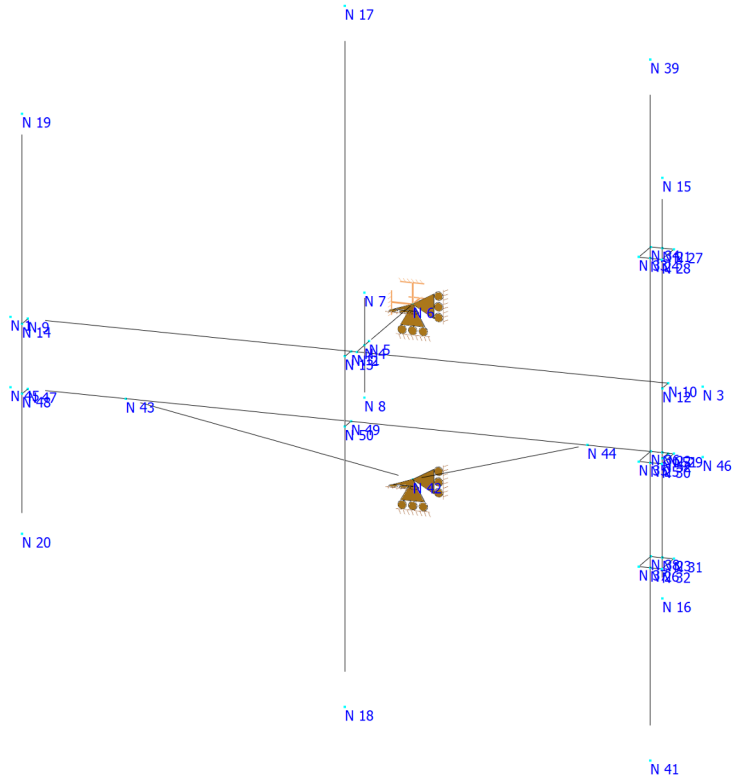


Project: 18963030A
Client: Empire
Structural Engineer: JRH
Modified: 5/7/2019



Project: 18963030A
Client: Empire
Structural Engineer: JRH
Modified: 5/7/2019

Geometry data

GLOSSARY

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

Nodes

Node	X [in]	Y [in]	Z [in]	Rigid Floor
9	3.00	0.00	0.00	0
14	3.00	0.00	3.00	0
11	59.00	0.00	0.00	0
13	59.00	0.00	3.00	0
10	114.00	0.00	0.00	0
12	114.00	0.00	3.00	0
47	3.00	-12.00	0.00	0
48	3.00	-12.00	3.00	0
49	59.00	-12.00	0.00	0
50	59.00	-12.00	3.00	0
51	114.00	-12.00	0.00	0
52	114.00	-12.00	3.00	0
1	0.00	0.00	0.00	0
2	60.00	0.00	0.00	0
3	120.00	0.00	0.00	0
4	60.00	0.00	-4.00	0
5	60.00	0.00	-6.25	0
6	60.00	0.00	-28.25	0
7	60.00	9.00	-4.00	0
8	60.00	-9.00	-4.00	0
15	114.00	36.00	3.00	0

16	114.00	-36.00	3.00	0
17	59.00	60.00	3.00	0
18	59.00	-60.00	3.00	0
19	3.00	36.00	3.00	0
20	3.00	-36.00	3.00	0
21	114.00	24.00	3.00	0
22	114.00	-11.00	3.00	0
23	114.00	-29.00	3.00	0
24	114.00	24.00	9.00	0
25	114.00	-11.00	9.00	0
26	114.00	-29.00	9.00	0
27	116.00	24.00	3.00	0
28	116.00	24.00	9.00	0
29	116.00	-11.00	3.00	0
30	116.00	-11.00	9.00	0
31	116.00	-29.00	3.00	0
32	116.00	-29.00	9.00	0
33	112.00	24.00	9.00	0
34	112.00	24.00	3.00	0
35	112.00	-11.00	9.00	0
36	112.00	-11.00	3.00	0
37	112.00	-29.00	9.00	0
38	112.00	-29.00	3.00	0
39	114.00	58.00	9.00	0
41	114.00	-62.00	9.00	0
42	60.00	-30.00	-28.25	0
43	20.00	-12.00	0.00	0
44	100.00	-12.00	0.00	0
45	0.00	-12.00	0.00	0
46	120.00	-12.00	0.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
6	1	1	1	1	1	1
42	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
6	9	14	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
7	11	13	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
8	10	12	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
28	47	48	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
29	49	50	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
30	51	52	MPRE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
1	2	4	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
2	4	5	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
3	5	6	Standoff Horizontal	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
4	1	3	Face Horizontal	P 3.00	A53 GrB	0.00	0.00	0.00

5	7	8	Mast Pipe	P 4.00	A53 GrB	0.00	0.00	0.00
9	15	16	MP	P 2.00	A53 GrB	0.00	0.00	0.00
24	39	41	MP1	P 2.00	A53 GrB	0.00	0.00	0.00
10	17	18	MP2	P 2.00	A53 GrB	0.00	0.00	0.00
11	19	20	MP3	P 2.00	A53 GrB	0.00	0.00	0.00
12	33	28	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
13	34	27	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
14	35	30	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
15	36	29	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
16	37	32	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
17	38	31	RE	Rigid Element	A36 (weightless)	0.00	0.00	0.00
18	33	34	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
19	28	27	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
20	35	36	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
21	30	29	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
22	37	38	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
23	32	31	Threaded Rods	RndBar 1_2	F1554 Gr36	0.00	0.00	0.00
25	43	42	Kicker	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
26	44	42	Kicker	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
27	45	46	Mod Face Horizontal	P 2.00	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
25	90.00	0	0.00	0.00	0.00
26	180.00	0	0.00	0.00	0.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
1	0	0	0	0	0	1	0	0	0	0	Full
25	1	1	0	0	0	0	0	0	0	0	Full
26	1	1	0	0	0	0	0	0	0	0	Full

Project: 18963030A
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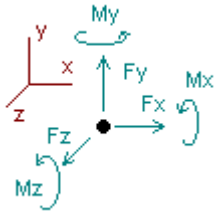
Structural Engineer: JRH
Modified: 5/7/2019

Analysis result

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

D1=1.4DL
D2=1.2DL+WLf3+1.5MLL1
D3=1.2DL+0.866WLf3+0.5WLs3+1.5MLL1
D4=1.2DL+0.5WLf3+0.866WLs3+1.5MLL1
D5=1.2DL+WLs3+1.5MLL1
D6=1.2DL-0.5WLf3+0.866WLs3+1.5MLL1
D7=1.2DL-0.866WLf3+0.5WLs3+1.5MLL1
D8=1.2DL-WLf3+1.5MLL1
D9=1.2DL-0.866WLf3-0.5WLs3+1.5MLL1
D10=1.2DL-0.5WLf3-0.866WLs3+1.5MLL1
D11=1.2DL-WLs3+1.5MLL1
D12=1.2DL+0.5WLf3-0.866WLs3+1.5MLL1
D13=1.2DL+0.866WLf3-0.5WLs3+1.5MLL1
D14=1.2DL+1.5MLL2
D15=1.2DL+WLf1
D16=1.2DL+0.866WLf1+0.5WLs1
D17=1.2DL+0.5WLf1+0.866WLs1
D18=1.2DL+WLs1
D19=1.2DL-0.5WLf1+0.866WLs1
D20=1.2DL-0.866WLf1+0.5WLs1
D21=1.2DL-WLf1
D22=1.2DL-0.866WLf1-0.5WLs1
D23=1.2DL-0.5WLf1-0.866WLs1
D24=1.2DL-WLs1
D25=1.2DL+0.5WLf1-0.866WLs1
D26=1.2DL+0.866WLf1-0.5WLs1
D27=0.9DL+WLf1
D28=0.9DL+0.866WLf1+0.5WLs1
D29=0.9DL+0.5WLf1+0.866WLs1
D30=0.9DL+WLs1
D31=0.9DL-0.5WLf1+0.866WLs1
D32=0.9DL-0.866WLf1+0.5WLs1
D33=0.9DL-WLf1
D34=0.9DL-0.866WLf1-0.5WLs1
D35=0.9DL-0.5WLf1-0.866WLs1
D36=0.9DL-WLs1
D37=0.9DL+0.5WLf1-0.866WLs1
D38=0.9DL+0.866WLf1-0.5WLs1
D39=1.2DL+Di+WLf2

D40=1.2DL+Di+0.866WLf2+0.5WLs2
D41=1.2DL+Di+0.5WLf2+0.866WLs2
D42=1.2DL+Di+WLs2
D43=1.2DL+Di-0.5WLf2+0.866WLs2
D44=1.2DL+Di-0.866WLf2+0.5WLs2
D45=1.2DL+Di-WLf2
D46=1.2DL+Di-0.866WLf2-0.5WLs2
D47=1.2DL+Di-0.5WLf2-0.866WLs2
D48=1.2DL+Di-WLs2
D49=1.2DL+Di+0.5WLf2-0.866WLs2
D50=1.2DL+Di+0.866WLf2-0.5WLs2
D51=1.2DL+Ev+Ehx
D52=1.2DL+Ev+Ehz
D53=1.2DL+Ev-Ehx
D54=1.2DL+Ev-Ehz
D55=0.9DL-Ev+Ehx
D56=0.9DL-Ev+Ehz
D57=0.9DL-Ev-Ehx
D58=0.9DL-Ev-Ehz

		Forces						Moments					
Node		**Fx** [Lb]	**lc**	**Fy** [Lb]	**lc**	**Fz** [Lb]	**lc**	**Mx** [Lb*ft]	**lc**	**My** [Lb*ft]	**lc**	**Mz** [Lb*ft]	**lc**
6	Max	1468.219	D31	1433.271	D45	1170.425	D27	940.82004	D27	2935.75260	D31	1906.43830	D21
	Min	-1468.410	D25	160.983	D27	-1728.424	D21	-3424.91740	D45	-2936.13850	D25	-1318.81260	D27
42	Max	690.981	D26	582.874	D39	877.923	D15	0.00000	D1	0.00000	D1	0.00000	D1
	Min	-690.944	D32	-154.675	D33	-320.006	D33	0.00000	D1	0.00000	D1	0.00000	D1

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Modified: 5/7/2019

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

D1=1.4DL
D2=1.2DL+WLf3+1.5MLL1
D3=1.2DL+0.866WLf3+0.5WLs3+1.5MLL1
D4=1.2DL+0.5WLf3+0.866WLs3+1.5MLL1
D5=1.2DL+WLs3+1.5MLL1
D6=1.2DL-0.5WLf3+0.866WLs3+1.5MLL1
D7=1.2DL-0.866WLf3+0.5WLs3+1.5MLL1
D8=1.2DL-WLf3+1.5MLL1
D9=1.2DL-0.866WLf3-0.5WLs3+1.5MLL1
D10=1.2DL-0.5WLf3-0.866WLs3+1.5MLL1
D11=1.2DL-WLs3+1.5MLL1
D12=1.2DL+0.5WLf3-0.866WLs3+1.5MLL1
D13=1.2DL+0.866WLf3-0.5WLs3+1.5MLL1
D14=1.2DL+1.5MLL2
D15=1.2DL+WLf1
D16=1.2DL+0.866WLf1+0.5WLs1
D17=1.2DL+0.5WLf1+0.866WLs1
D18=1.2DL+WLs1
D19=1.2DL-0.5WLf1+0.866WLs1
D20=1.2DL-0.866WLf1+0.5WLs1
D21=1.2DL-WLf1
D22=1.2DL-0.866WLf1-0.5WLs1
D23=1.2DL-0.5WLf1-0.866WLs1
D24=1.2DL-WLs1
D25=1.2DL+0.5WLf1-0.866WLs1
D26=1.2DL+0.866WLf1-0.5WLs1
D27=0.9DL+WLf1
D28=0.9DL+0.866WLf1+0.5WLs1
D29=0.9DL+0.5WLf1+0.866WLs1
D30=0.9DL+WLs1
D31=0.9DL-0.5WLf1+0.866WLs1
D32=0.9DL-0.866WLf1+0.5WLs1
D33=0.9DL-WLf1
D34=0.9DL-0.866WLf1-0.5WLs1
D35=0.9DL-0.5WLf1-0.866WLs1
D36=0.9DL-WLs1
D37=0.9DL+0.5WLf1-0.866WLs1
D38=0.9DL+0.866WLf1-0.5WLs1
D39=1.2DL+Di+WLf2
D40=1.2DL+Di+0.866WLf2+0.5WLs2
D41=1.2DL+Di+0.5WLf2+0.866WLs2
D42=1.2DL+Di+WLs2
D43=1.2DL+Di-0.5WLf2+0.866WLs2
D44=1.2DL+Di-0.866WLf2+0.5WLs2
D45=1.2DL+Di-WLf2
D46=1.2DL+Di-0.866WLf2-0.5WLs2
D47=1.2DL+Di-0.5WLf2-0.866WLs2
D48=1.2DL+Di-WLs2
D49=1.2DL+Di+0.5WLf2-0.866WLs2
D50=1.2DL+Di+0.866WLf2-0.5WLs2
D51=1.2DL+Ev+Ehx
D52=1.2DL+Ev+Ehz

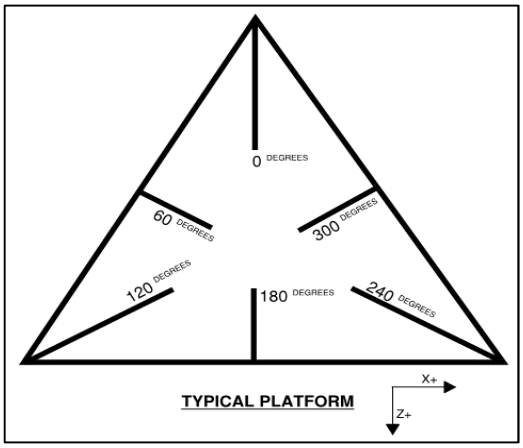
D53=1.2DL+Ev-Ehx
D54=1.2DL+Ev-Ehz
D55=0.9DL-Ev+Ehx
D56=0.9DL-Ev+Ehz
D57=0.9DL-Ev-Ehx
D58=0.9DL-Ev-Ehz

Description	Section	Member	Ratio	Status	Reference
Face Horizontal	***P 3.00***	**4**	**0.48**	**OK**	
Kicker	***L 2-1_2X2-1_2X3_16***	**25**	0.05	OK	
		26	**0.09**	**OK**	
Mast Pipe	***P 4.00***	**5**	**0.00**	**OK**	
Mod Face Horizontal	***P 2.00***	**27**	0.28	OK	
MP		**9**	0.26	OK	
MP1		**24**	0.12	OK	
MP2		**10**	**0.71**	**OK**	
MP3		**11**	0.28	OK	
Standoff Horizontal	***HSS_SQR 4X4X3_16***	**3**	**0.44**	**OK**	
Threaded Rods	***RndBar 1_2***	**18**	0.55	OK	
		19	0.53	OK	
		20	0.50	OK	
		21	**0.56**	**OK**	
		22	0.35	OK	
		23	0.35	OK	

Mount-to-Tower Connection Check

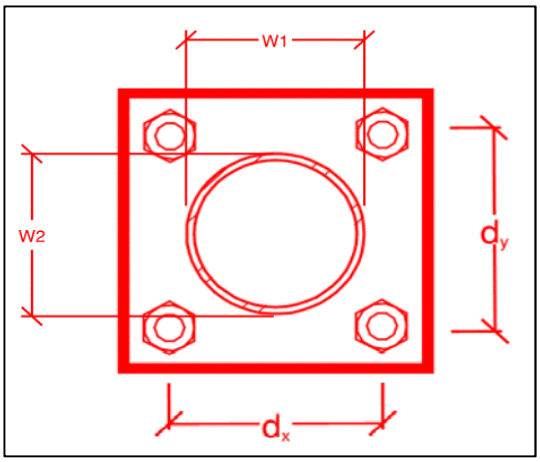
RAM Model Data

Nodes *(numbered per RAM)*	Orientation *(per graphic of typical platform)*
6	180



Tower Connection Bolt Checks

Any moment resistance?	yes
Bolt Quantity per Reaction	4
d_x (in) *(Delta X of typ. bolt config. sketch)*	7
d_y (in) *(Delta Y of typ. bolt config. sketch)*	7
Bolt Type	A325N
Bolt Diameter (in)	0.625
Required Tensile Strength (kips)	15.1
Required Shear Strength (kips)	8.1
Tensile Strength / bolt (kips)	20.7
Shear Strength / bolt (kips)	12.4
Tensile Capacity Overall	**18.3%**
Shear Capacity Overall	**16.2%**



Note: Tension reduction not required if tension or shear capacity < 30%

Tower Connection Plate and Weld Check

Connecting Standoff Member Shape	Rect
Plate Width (in)	10
Plate Height (in)	10
W1 (in)	4
W2 (in)	4
Fy (ksi, plate)	36
t_{Plate} (in)	0.625
Weld Size (1/16 in)	2
Phi*Rn (kip/in)	2.78
Required Weld Strength (kip/in)	2.48
Plate Bending Capacity	**48.8%**
Weld Capacity	**89.0%**

Max Plate Bending Strengths

Mu_{xx} *(kip-in)*	8.7
Phi*Mn_{xx} *(kip-in)*	31.6
Mu_{yy} *(kip-in)*	6.7
Phi*Mn_{yy} *(kip-in)*	31.6

v2.4

APPENDIX: B

PROJECT NO: 18963030A PROJECT MANAGER: R. ANDREWS DESIGNED: J. HESSON CHECKED: P. TSOUKALAS	DRAWING TITLE: SITE #: CT2070 SITE NAME: NEW FAIRFIELD MODIFICATION NOTES	PROJECT TITLE: 10035312	DRAWING NO: SK-001

GENERAL NOTES

1. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD ANSI/TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK AND ORDERING MATERIAL. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
4. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
7. WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
8. THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.
9. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA-322, ANSI A10.48 (LATEST EDITIONS), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322, ANSI A10.48 (LATEST EDITION) INLCUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.

DESIGN LOADS

WIND LOADS

a. BASIC WIND SPEED (ULTIMATE 3 SECOND GUST), V = 115 MPH

ICE LOADS

a. ICE WIND SPEED (3 SECOND GUST), V = 50 MPH

b. ICE THICKNESS, t = 1.00 IN

STRUCTURAL STEEL

1. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
   a. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
   b. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
   c. AISC CODE OF STANDARD PRACTICE

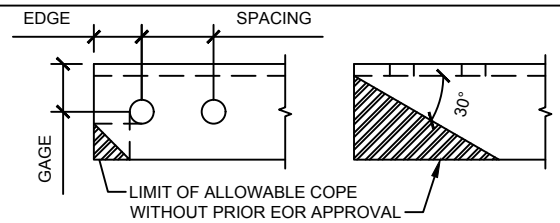
STRUCTURAL STEEL (CONTINUED)

2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE

3. DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
4. ALL BOLT HOLES SHALL BE STANDARD SIZE U.N.O.
5. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
6. ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
7. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
8. ALL BOLT ASSEMBLES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.

ALLOWABLE COPING

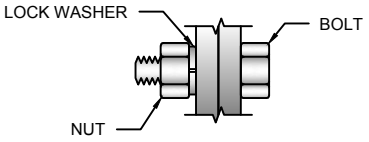


BOLT SCHEDULE (IN.)

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

WORKABLE GAGES (IN.)

LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



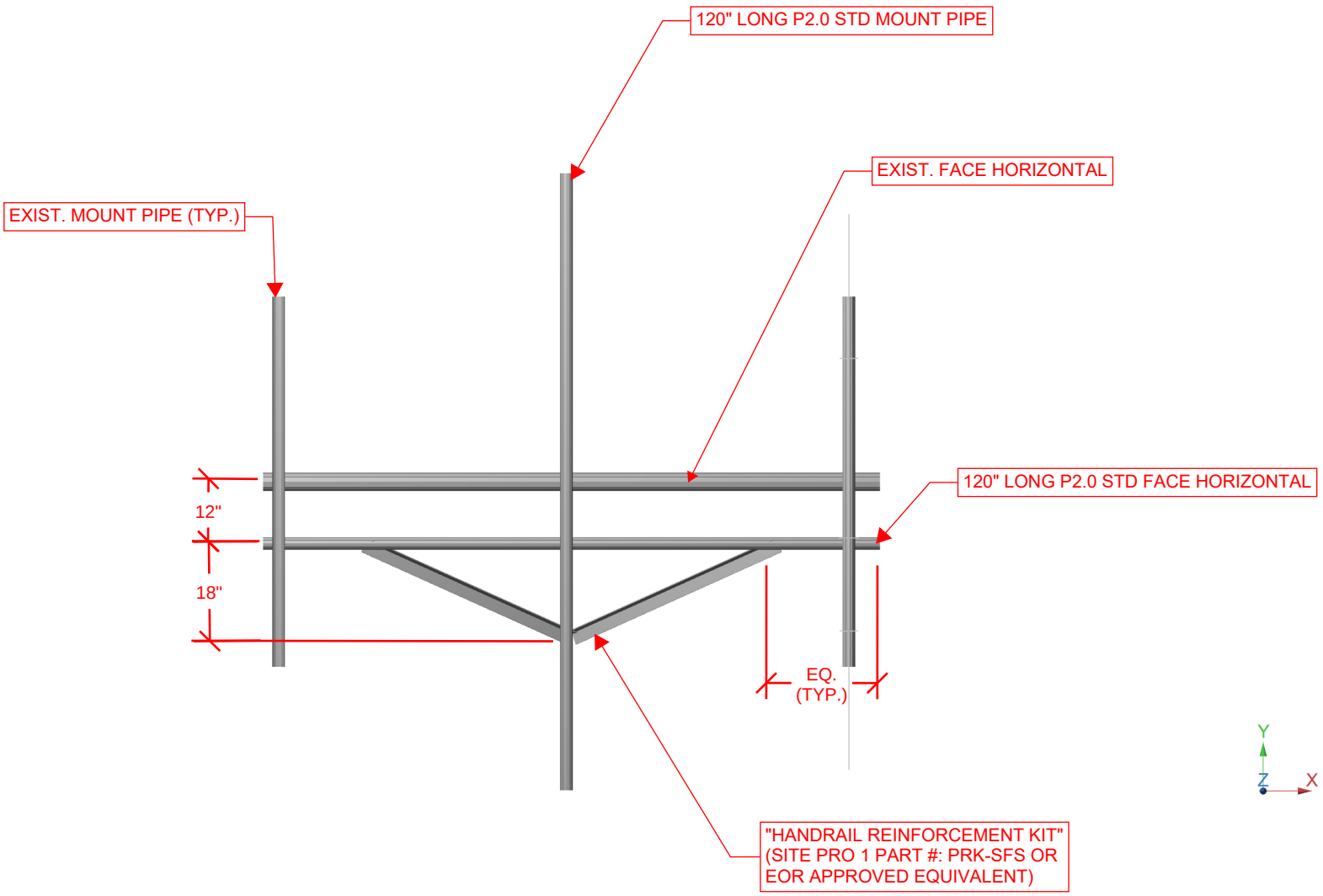
TYP. BOLT ASSEMBLY

NOTES:

1. ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
3. SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS.
4. MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.

Project: 18963030A
Client: Empire
Structural Engineer: JRH
Modified: 5/7/2019

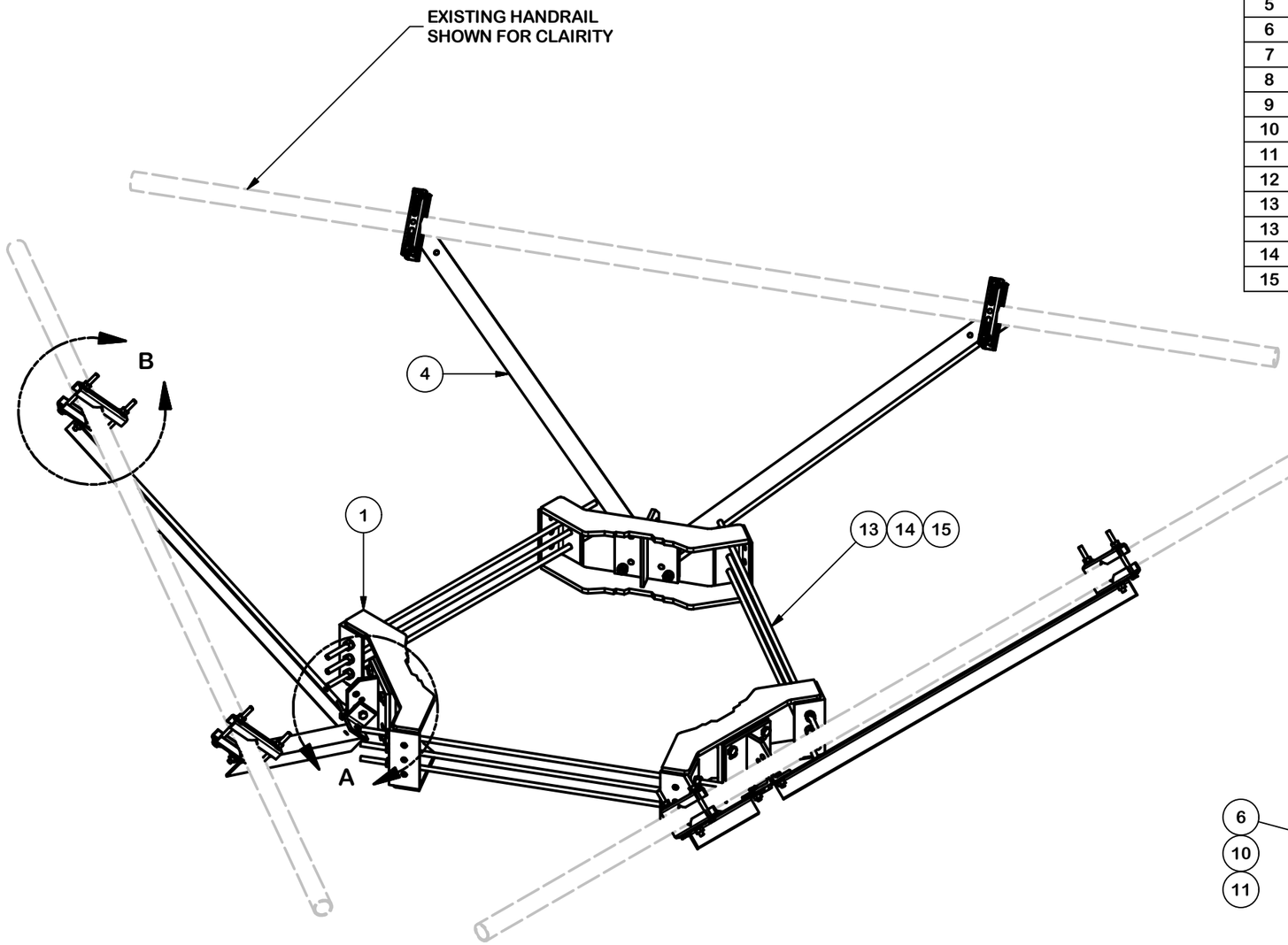
MOUNT MODIFICATION SKETCH (1 OF 1)

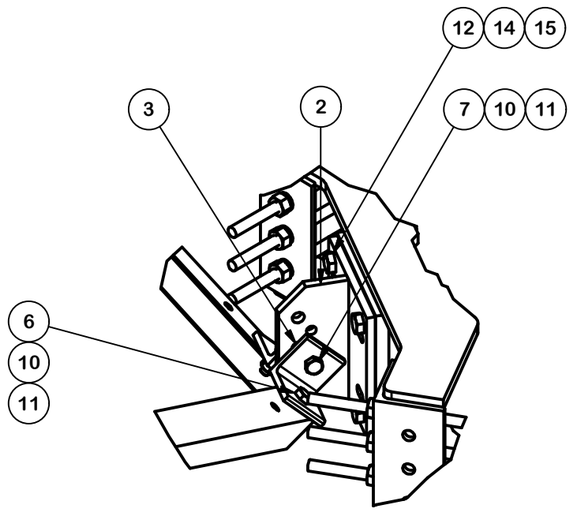


FRONT ELEVATION VIEW (TYP. ALL SECTORS)

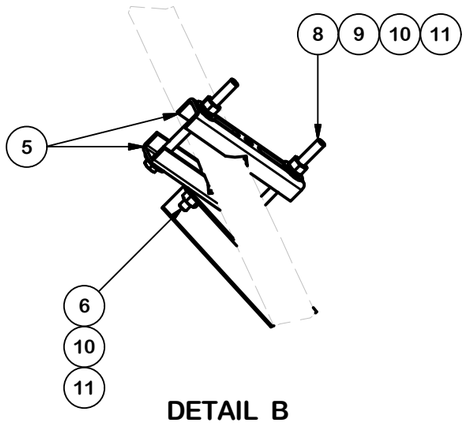
NOTES:
1) MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.
2) EXIST. RADIO AND/OR TME POSITIONS SHALL BE ADJUSTED VERTICALLY AS NEEDED IN ORDER TO ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE.
3) CONNECT NEW PIPE HORIZONTAL TO EXISTING MOUNT PIPES WITH CROSSOVER PLATES (SITE PRO 1 PART #: SCX1-K OR EOR APPROVED EQUIVALENT).

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-TBW	T-BRACKET WELDMENT		13.60	40.80
3	6	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	11.15
4	6	X-232697	TRPD-HD DIAGONAL ANGLE - SITE PRO 1	52 1/2 in	14.35	86.08
5	12	X-STU	STIFF ARM CHANNEL BRACKET	8 1/2 in	1.37	16.46
6	12	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	1.77
7	3	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.61
8	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
9	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
10	27	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.38
11	27	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.93
12	12	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	3.75
13	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
13	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
14	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
15	30	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	3.90
					TOTAL WT. #	587.71





DETAIL A



DETAIL B

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/23/2017

REVISION HISTORY

DESCRIPTION: HANDRAIL REINFORCEMENT KIT

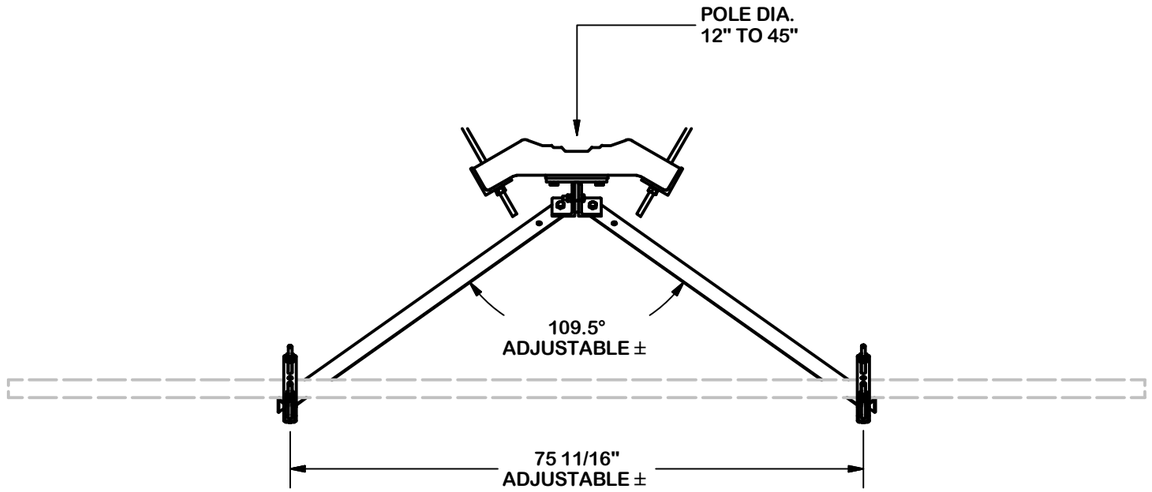
SITE PRO 1 — A valmont COMPANY

Engineering Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

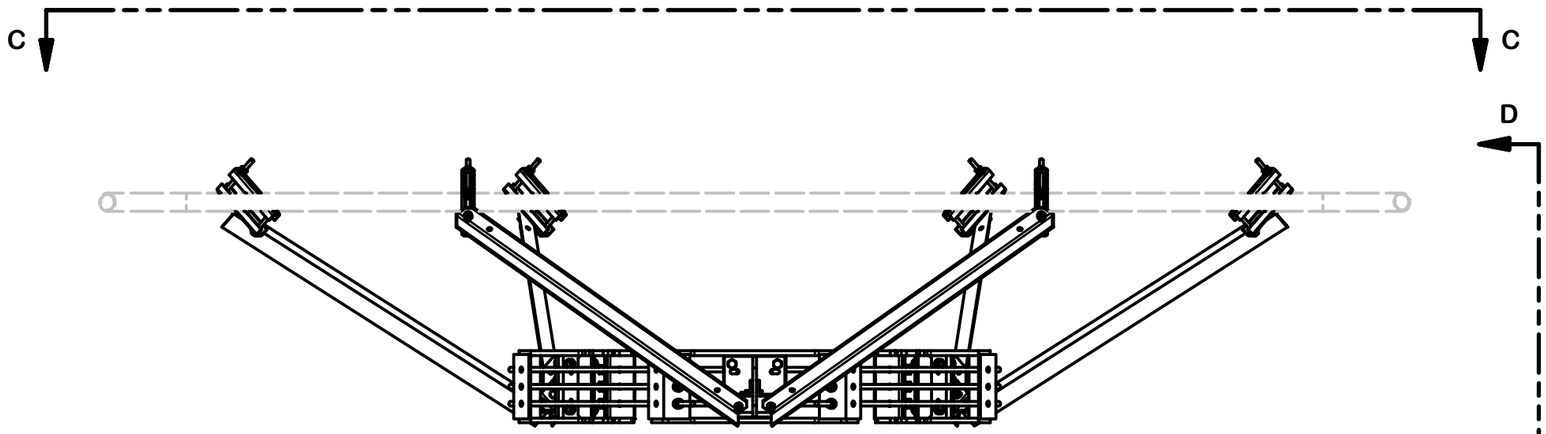
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS	1 OF 3

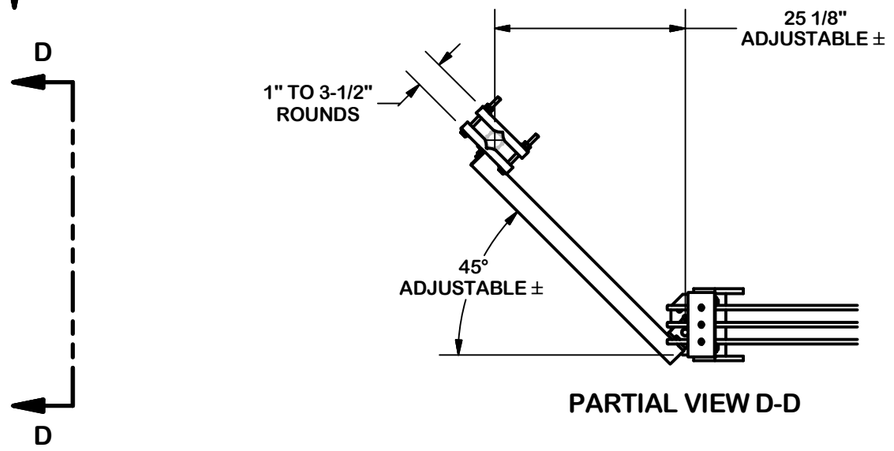
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	SHOP	BMC 3/16/2017	PRK-SFS



PARTIAL VIEW C-C

VERTICAL POSITION





PARTIAL VIEW D-D

TOLERANCE NOTES

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DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/23/2017

REVISION HISTORY

DESCRIPTION: HANDRAIL REINFORCEMENT KIT

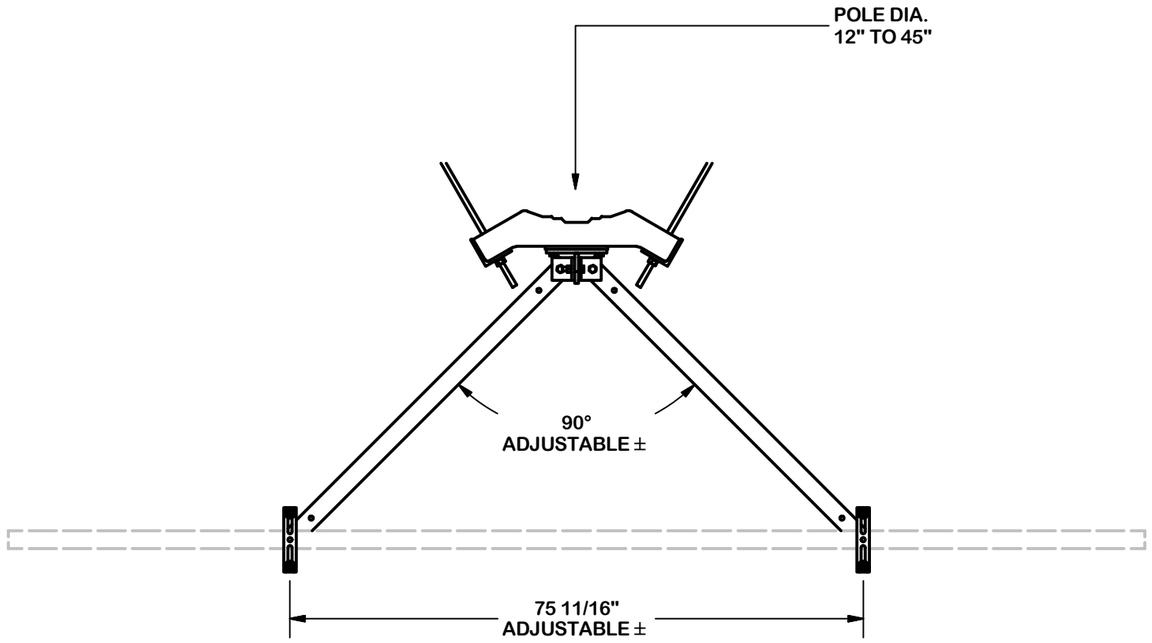
SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

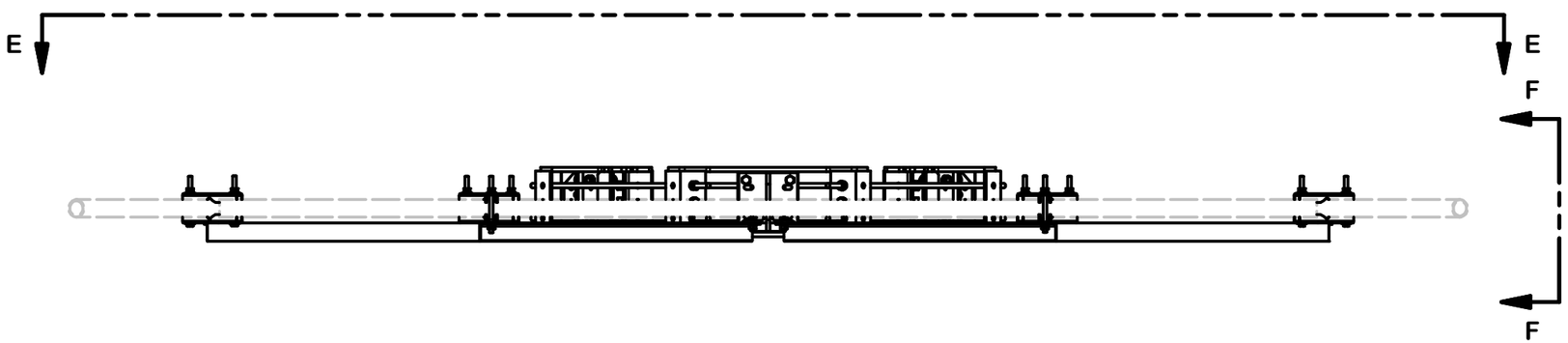
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS

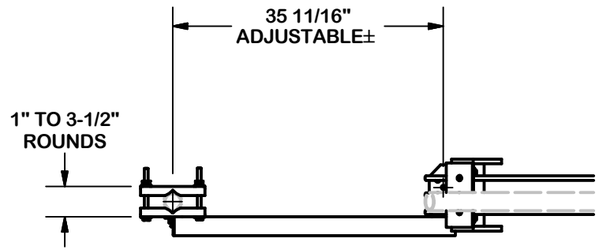
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	SHOP	BMC 3/16/2017	PRK-SFS



PARTIAL VIEW E-E

HORIZONTAL POSITION





PARTIAL VIEW F-F

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED MAX. DIA. FOR HANDRAIL CONNECTION	SP1	BC	10/23/2017

REVISION HISTORY

DESCRIPTION: HANDRAIL REINFORCEMENT KIT

SITE PRO 1 — A valmont COMPANY

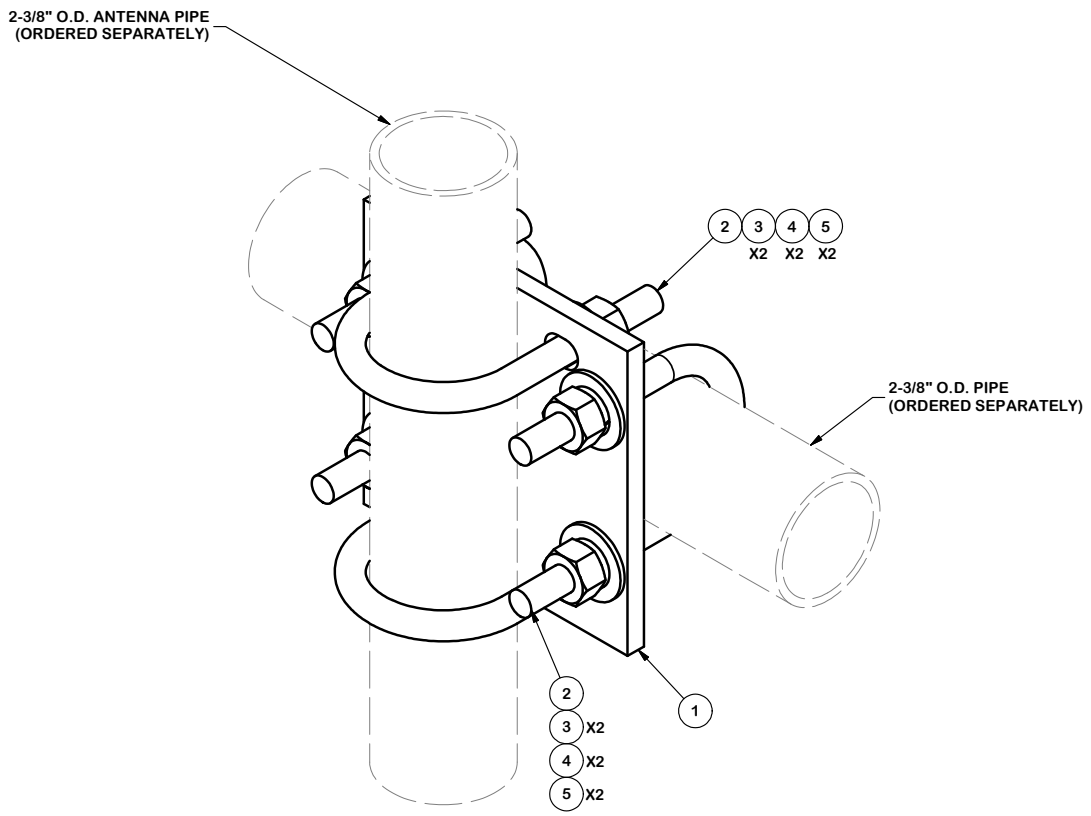
Engineering Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	SHOP	BMC 3/16/2017	PRK-SFS

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"		3.71	3.71
2	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	2.50
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	7.16



TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED MISSING U-BOLT AND HRDWE		KC8	7/5/2012

REVISION HISTORY

DESCRIPTION: CROSSOVER PLATE

CPD NO.:

DRAWN BY: CEK 6/30/2011

ENG. APPROVAL:

CLASS: 81 SUB: 01

DRAWING USAGE: CUSTOMER

CHECKED BY: CEK 8/23/2012

PART NO.: SCX1-K

DWG. NO.: SCX1-K

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

EXHIBIT 3

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

www.ct.gov/csc

August 19, 2019

Michelle Scharath
Site Acquisition Specialist
Empire Telecom USA, LLC
16 Esquire Road
Billerica, MA 01862

RE: **EM-AT&T-091-190730** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 302 Ball Pond Road, New Fairfield, Connecticut.

Dear Ms. Scharath:

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

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

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

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

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

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

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

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

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

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

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

c: The Honorable Patricia Del Monaco, First Selectman, Town of New Fairfield
Evan White, Zoning Enforcement Officer, Town of New Fairfield

The Planning Commission

Town of New Fairfield
New Fairfield, Connecticut 06812

Regular Meeting
Monday, March 25, 2002
Town Hall Conference Room, 7:30pm

MINUTES - REVISED

Commissioners Present: Jim Piskura, Ron Stoddard, Chris Gould, Dale Holly

Alternates Present: Jim Mitchell, Joe Longo

Staff Present: Jeannine Fitzgerald

Commissioners Absent: Bill DiTullio, Mike Verrico

Call to Order: 7:37 pm

Appt of Alternates
Chris Gould made motion to elevate Jim Mitchell to full voting status. Seconded by Dale Holly.

Approval of Minutes:
Dale Holly made motion to accept Feb 25th minutes as is. Chris Gould seconded. All in favor.
Dale Holly made motion to accept Mar 11th special minutes. Chris Gould seconded. All in favor. Ron Stoddard abstained.

Correspondence/Announcements:
1. Email from Tony Iadarola re: updates, etc.
2. Email from Tony March 24, 2002 re: Pine Hill
3. Email from Jeannine re: vacation next month. Need someone to take care of agenda, minutes, legal notices and votes.

Jim Piksura will not be at the April 8, 2002 Planimetrics meeting at 7pm.
Jeannine to republish the notice again in CN for next Weds. April 3rd.

OLD BUSINESS
Chelsea Drive - waiting for correspondence
Sonneborn Estates - pending
Pine Hill Subdivision- pending

NEW BUSINESS
Communication Tower – 302 Ball Pond Road Referral
Location is behind Fire House & Police Station
Russ Strilowich, Chairman of the Permanent Building Committee present.

8.24 Referral to Zoning sought

>Chris Gould made motion to grant a positive referral to the PBC. Dale Holly seconded. All in favor.

3:30

The Planning Commission

Town of New Fairfield
New Fairfield, Connecticut 06812

MEMO

TO: Permanent Building Committee

FROM: Jeannine Fitzgerald

RE: Referral for Amendment to Zoning Regulations

DATE: March 26, 2002

The Planning Commission of New Fairfield granted a positive referral to the Communication Tower at 302 Ball Pond Road.

Call me or Jim Piskura at 746-1180 if you have any questions.

cc: Jim Piskura
Maria Haussherr-Hughes
First Selectman's Office

Hand Delivered to Mail Box

ZONING PERMIT

ZONING COMMISSION

TOWN OF NEW FAIRFIELD
4 BRUSH HILL ROAD
NEW FAIRFIELD, CT 06812
203-746-8140

PROPERTY OWNER: Town Of New Fairfield

OWNER'S ADDRESS: 302 Ball Pond Road
New Fairfield, CT 06812

PROPERTY ADDRESS: 302 Ball Pond Road

ZONE: R **MAP: 23** **BLOCK: 16** **LOT: 15-16**

LOT SIZE: **FRONTAGE:**

PROJECT DESCRIPTION: CONSTRUCTION OF ACCESS ROAD TO 100' X 100' COMPOUND FOR 175 FOOT COMMUNICATION TOWER FOR TOWN EMS ANTENNAS

CONSTRUCTION MAY NOT PROCEED UNTIL
A BUILDING PERMIT HAS BEEN OBTAINED

THIS PERMIT MUST BE POSTED ON THE PREMISES

PERMIT VOID IF CONSTRUCTION AUTHORIZED IN NOT COMPLETED WITHIN ONE (1) YEAR OF ISSUANCE.

THIS PERMIT IF ISSUED, IS BASED UPON THE PLOT PLAN SUBMITTED. FALSIFICATION, BY MISREPRESENTATION OR OMISSION, OR FAILURE TO COMPLY WITH THE CONDITIONS OF APPROVAL OF THIS PERMIT SHALL CONSTITUTE A VIOLATION OF THE NEW FAIRFIELD ZONING REGULATIONS.

CONDITIONS OF APPROVAL:
Permit for structure only - Town Emergency Tower/Antenna exempt under section 2.13.10 of the New Fairfield Zoning Regulations.

PERMIT NO. ZO-01-120

DATE ISSUED 07/03/02

FEE waived
(INCLUDES $10. STATE SURCHARGE)

Maria Haussherr-Hughes
Maria Haussherr-Hughes
Zoning Enforcement Officer

TOWN OF NEW FAIRFIELD
4 BRUSH HILL ROAD, NEW FAIRFIELD, CT
203-312-5646

BUILDING PERMIT

POST THIS PERMIT CONSPICUOUSLY

Owner: Town Of New Fairfield
Address: 302 Ball Pond Road
Project Description: CONSTRUCTION OF ACCESS ROAD TO 100' X 100' COMPOUND FOR 175 FOOT COMMUNICATION TOWER FOR TOWN EMS ANTENNAS
Map: 23 **Block:** 16 **Lot:** 15-16

In accordance with application, plans and specifications submitted to the New Fairfield building department, this project will be completed subject to the State of Connecticut building code. Otherwise this permit will be null and void. Occupancy of this new building or addition prior to issuance of certification of occupancy will be considered a violation of the state building code.

Permit No: 02-133 **Fee $:** 0.00

Expires in six months if constructions is not then commenced

Ronald N. Malmberg, Building Official

Inspections:

Date Issued: 07/09/02

1. **Footings**
2. **Footing Drains**
3. **Framing (Rough)**
4. **Plumbing (Rough with Test)**
5. **Electrical**
6. **Insulation**
7. **Gas or Oil Burner**
8. **Final Elec. and Plumbing**
9. **Deck**
10. **Final - Fire Separation, Exits, etc.**

Conditions:

•

EXHIBIT 4

302 BALL POND RD

Location	302 BALL POND RD	**Mblu**	23/ 16/ 15/ /
Acct#	00037200	**Owner**	NEW FAIRFIELD TOWN OF
Assessment	$10,519,700	**Appraisal**	$15,028,100
PID	378	**Building Count**	6

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$12,547,500	$2,480,600	$15,028,100
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$8,783,300	$1,736,400	$10,519,700

Owner of Record

Owner	NEW FAIRFIELD TOWN OF	**Sale Price**	$0
Co-Owner	CONSOLIDATED SCHOOL & FIREHOUSE	**Certificate**	
Address	4 BRUSH HILL RD NEW FAIRFIELD, CT 06812	**Book & Page**	0461/1055
		Sale Date	03/18/2010
		Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
NEW FAIRFIELD TOWN OF	$0		0461/1055	29	03/18/2010
NEW FAIRFIELD TOWN OF	$0		0000/0000		01/01/1900

Building Information

Building 1 : Section 1

Year Built:	1940
Living Area:	91,801
Replacement Cost:	$14,753,798
Building Percent Good:	55

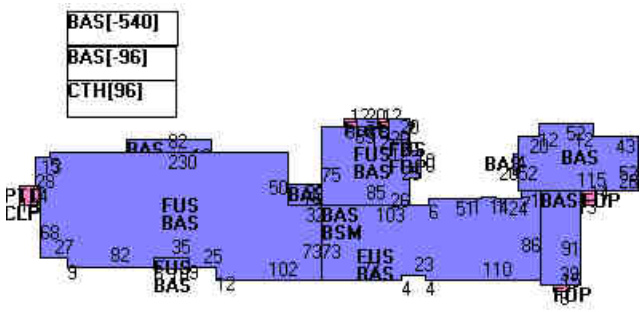
Replacement Cost
Less Depreciation: $8,114,600

Building Attributes	
Field	**Description**
Style:	Public School
Model	Commercial
Grade	B
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl
Exterior Wall 2	Brick/Masonry
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Struct Class	
Bldg Use	Education
1st Floor Use:	903
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//\00\00\57\41.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	59,749	59,749
FRB	FRB	36,898	31,363
FBM	FBM	984	689
BSM	Basement	12,618	0
CLP	Loading Platform Covered	360	0
CRL	Crawl Space	6,604	0
CTH	Cathedral	2,804	0
FOP	Open Porch	1,204	0
PTO	Patio	360	0
		121,581	91,801

Building 2 : Section 1

Year Built: 1981
Living Area: 13,681
Replacement Cost: $1,868,793

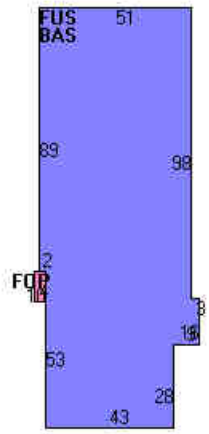
Building Percent Good: 82
Replacement Cost Less Depreciation: $1,532,400

Building Attributes : Bldg 2 of 6	
Field	**Description**
Style:	Fire Station
Model	Commercial
Grade	B
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Mansard
Roof Cover	Wood Shingle
Interior Wall 1	Plastered
Interior Wall 2	Plywood Panel
Interior Floor 1	Dirt/None
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	None
Struct Class	
Bldg Use	Fire Vol.
1st Floor Use:	903
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//\00\00\57\42.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	7,016	7,016
FUS	Finished Upper Story	7,016	6,665
FOP	Open Porch	40	0
		14,072	13,681

Building 3 : Section 1

Year Built: 1989
Living Area: 11,951
Replacement Cost: $1,503,675
Building Percent Good: 86
Replacement Cost Less Depreciation: $1,293,200

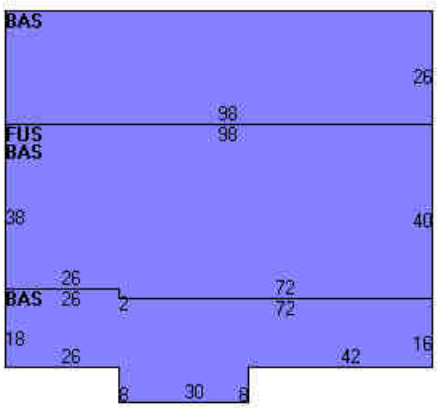
Building Attributes : Bldg 3 of 6	
Field	**Description**
Style:	Police
Model	Commercial

Grade	C
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Municipal-Comm
1st Floor Use:	903
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//\00\00\57\43.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	8,276	8,276
FUS	Finished Upper Story	3,868	3,675
		12,144	11,951

Building 4 : Section 1

Year Built: 2004
Living Area: 360
Replacement Cost: $42,689
Building Percent Good: 87
Replacement Cost Less Depreciation: $37,100

Building Attributes : Bldg 4 of 6	
Field	Description
Style:	Tower support
Model	Commercial
Grade	C

Stories:	1
Occupancy	0.00
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Misc
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//default.jpg)

Building Layout

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//Sketches/378_8724

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	360	360
		360	360

Building 5 : Section 1

Year Built: 2004
Living Area: 300
Replacement Cost: $35,574
Building Percent Good: 87
Replacement Cost Less Depreciation: $30,900

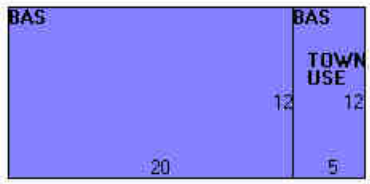
Building Attributes : Bldg 5 of 6	
Field	Description
Style:	Tower support
Model	Commercial
Grade	C
Stories:	1

Occupancy	0.00
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Misc
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//default.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	300	300
		300	300

Building 6 : Section 1

Year Built: 2004
Living Area: 200
Replacement Cost: $65,002
Building Percent Good: 87
Replacement Cost Less Depreciation: $56,600

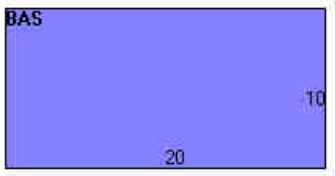
Building Attributes : Bldg 6 of 6	
Field	Description
Style:	Tower support
Model	Commercial
Grade	C
Stories:	1

Occupancy	
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Municipal-Comm
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/NewFairfieldCTPhotos//default.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	200	200
		200	200

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPR3	SPRINKLERS-DRY	6604.00 S.F.	$10,000	1
ELV3	Residential Elevator	1.00 UNITS	$16,500	1
GEN	Generator	1.00 UNITS	$2,500	2

Land

Land Use

Land Line Valuation

Use Code	909	**Size (Acres)**	38.23
Description	Education	**Depth**	
Zone	2	**Assessed Value**	$1,736,400
Neighborhood	C	**Appraised Value**	$2,480,600
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV2	PAVING-CONC			100.00 S.F.	$300	1
PAV1	PAVING-ASPHALT			103000.00 S.F.	$92,700	1
CNP2	CANOPY-GOOD			546.00 S.F.	$6,800	1
SHD1	Shed			476.00 S.F.	$3,300	1
SHD1	Shed			80.00 S.F.	$600	1
CELL	Cell Tenant			5.00 UNITS	$1,350,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$14,116,500	$2,070,500	$16,187,000
2017	$14,116,500	$2,070,500	$16,187,000
2016	$14,116,500	$2,070,500	$16,187,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$9,881,500	$1,449,300	$11,330,800
2017	$9,881,500	$1,449,300	$11,330,800
2016	$9,881,500	$1,449,300	$11,330,800

302 Ball Pond Road

10/20/2020 1:13:13 PM

Scale: 1"=500'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

EXHIBIT 5

RF EMISSIONS COMPLIANCE REPORT

Empire Telecom on behalf of AT&T Mobility, LLC

Site Name: NEW FAIRFIELD SR37-SR39
AT&T Mobility, LLC Site FA #: 10035312
AT&T Mobility, LLC Site USID: 27009
AT&T Mobility, LLC Site ID: CT2070
302 BALL POND ROAD
NEW FAIRFIELD, CT
5/17/2019

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
NEW FAIRFIELD, 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 "NEW FAIRFIELD SR37-SR39" ("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 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 7.2% 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 10.211% 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
NEW FAIRFIELD SR37-SR39
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.219 %
AT&T Mobility, LLC	1.702 %
AT&T Mobility, LLC (Proposed)	1.473 %
AT&T Mobility, LLC (Proposed)	2.014 %
AT&T Mobility, LLC (Proposed)	1.792 %
Unknown Carrier	0.148 %
Unknown Carrier	0.994 %
Unknown Carrier	0.52 %
Unknown Carrier	0.567 %
Unknown Carrier	0.781 %
Composite Site MPE:	10.211 %

AT&T Mobility, LLC
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	1.24343	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.21943	%

					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	90	143	547	0.684097	0.120723	1.066653	0.188233
Powerwave	7770	90	263	547	0.684097	0.120723	1.066653	0.188233
Powerwave	7770	90	23	547	0.684097	0.120723	1.066653	0.188233

AT&T Mobility, LLC
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	17.01923	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	1.70192	%

					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	HPA-65R-BUU-H8	90	0	4777	13.391842	1.339184	15.079942	1.507994
CCI Antennas	HPA-65R-BUU-H6	90	210	2350	6.424754	0.642475	7.324093	0.732409
CCI Antennas	HPA-65R-BUU-H6	90	330	2350	4.292343	0.429234	5.718872	0.571887

AT&T Mobility, LLC (Proposed)
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	14.72504	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	1.4725	%

					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	800-10966	90	0	4046	5.258307	0.525831	8.17381	0.817381
Kathrein-Scala	800-10966	90	210	4046	5.258307	0.525831	8.17381	0.817381
Kathrein-Scala	800-10966	90	330	4046	5.209836	0.520984	8.17381	0.817381

AT&T Mobility, LLC (Proposed)
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	11.41197	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	2.01388	%

					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	800-10966	90	0	2143	2.059846	0.363502	3.849432	0.679312
Kathrein-Scala	800-10966	90	0	2143	2.059846	0.363502	3.849432	0.679312
Kathrein-Scala	800-10966	90	210	2143	1.739975	0.307054	3.469076	0.61219
Kathrein-Scala	800-10966	90	210	2143	1.739975	0.307054	3.469076	0.61219
Kathrein-Scala	800-10966	90	330	2143	1.898192	0.334975	3.654156	0.644851
Kathrein-Scala	800-10966	90	330	2143	1.898192	0.334975	3.654156	0.644851

AT&T Mobility, LLC (Proposed)
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	8.80653	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	1.79237	%

					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	800-10966	90	0	3623	4.137969	0.842192	5.730481	1.166312
Kathrein-Scala	800-10966	90	210	3623	3.529279	0.718306	5.242523	1.066999
Kathrein-Scala	800-10966	90	330	3623	3.83005	0.779522	5.476909	1.114703

Unknown Carrier
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	150	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.2963	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.14815	%

					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**
Generic	Omni	175	0	100	0.148148	0.074074	0.148148	0.074074
Generic	Omni	175	0	100	0.148148	0.074074	0.148148	0.074074

Unknown Carrier
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	9.93795	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.99379	%

					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**
Generic	Panel	125	0	3992	5.416341	0.541634	5.416341	0.541634
Generic	Panel	125	120	3992	5.416341	0.541634	5.416341	0.541634
Generic	Panel	125	240	3992	5.38442	0.538442	5.407069	0.540707
Generic	Panel	145	0	3992	3.960761	0.396076	3.960761	0.396076
Generic	Panel	145	120	3992	3.93669	0.393669	3.953785	0.395379
Generic	Panel	145	240	3992	3.960761	0.396076	3.960761	0.396076

Unknown Carrier
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.20462	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.52046	%

					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**
Generic	Panel	125	0	4180	1.298241	0.129824	1.503912	0.150391
Generic	Panel	125	120	4180	1.298583	0.129858	1.503912	0.150391
Generic	Panel	125	240	4180	1.298241	0.129824	1.503912	0.150391
Generic	Panel	145	0	4180	0.958621	0.095862	1.100873	0.110087
Generic	Panel	145	120	4180	0.958621	0.095862	1.100873	0.110087
Generic	Panel	145	240	4180	0.958916	0.095892	1.100873	0.110087
Generic	Panel	155	0	4180	0.837956	0.083796	0.957357	0.095736
Generic	Panel	155	120	4180	0.837956	0.083796	0.957357	0.095736
Generic	Panel	155	240	4180	0.838271	0.083827	0.957357	0.095736

Unknown Carrier
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	3.21353	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.56709	%

					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**
Generic	Panel	125	0	2266	1.611277	0.284343	2.024873	0.357331
Generic	Panel	125	120	2266	1.611277	0.284343	2.024873	0.357331
Generic	Panel	125	240	2266	1.613085	0.284662	2.024873	0.357331
Generic	Panel	155	0	2266	1.022965	0.180523	1.290155	0.227674
Generic	Panel	155	120	2266	1.02432	0.180762	1.290155	0.227674
Generic	Panel	155	240	2266	1.022965	0.180523	1.290155	0.227674

Unknown Carrier
NEW FAIRFIELD SR37-SR39
Carrier Summary

Frequency:	700	MHz
Maximum Permissible Exposure (MPE):	466.67	µW/cm^2
Maximum power density at ground level:	3.6459	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.78126	%

					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**
Generic	Panel	125	0	1960	1.34924	0.289123	1.915804	0.410529
Generic	Panel	125	120	1960	1.34924	0.289123	1.915803	0.410529
Generic	Panel	125	240	1960	1.355527	0.29047	1.915804	0.410529
Generic	Panel	145	0	1960	0.98394	0.210844	1.403255	0.300697
Generic	Panel	145	120	1960	0.987876	0.211688	1.403255	0.300697
Generic	Panel	145	240	1960	0.98394	0.210844	1.403255	0.300697

EXHIBIT 6

MASER CONSULTING
— CONNECTICUT —

Engineers Planners Surveyors Landscape Architects Environmental Scientists

Monopole Structural Analysis

FOR

CT2070 – New Fairfield SR37-SR39

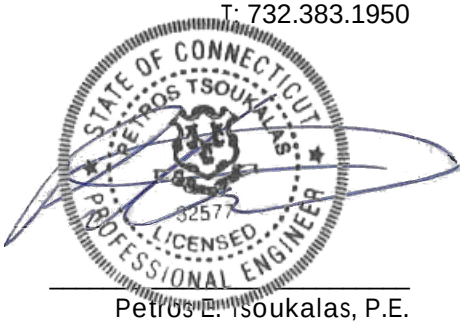
FA# 10035312
302 Ball Pond Road
New Fairfield, CT 06812
Fairfield County
41.4647169, -73.4969519

Monopole Utilization: 81.8%
Foundation Utilization: 71.7%

June 12, 2020

Prepared For
AT&T
550 Cochituate Road
Framingham, MA 01701

Prepared By
Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950



Petros L. Tsoukalas, P.E.
Geographic Discipline Leader
Connecticut License No. 32557

MC Project No. 18963030A

Objective:

The objective of this report is to determine the capacity of the monopole and foundation at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting Connecticut has reviewed the following documents in completing this report:

Document Type	Remarks	Source
Radio Frequency Data Sheet (RFDS)	*RFDS ID: 2454216, Version 5.00 Dated April 16, 2019*	*Empire Telecom*
Tower Design Documents	*Fred A. Nudd Corporation Drawings #02-0203-1 Dated February 14, 2003*	*Maser Consulting Connecticut*
Structural Analysis	*Infinigy Engineering Project #158-093 Dated February 16, 2016*	*Empire Telecom*
Structural Analysis	*Malouf Engineering Project #CT01113M-16V0 Dated November 2, 2016*	*Empire Telecom*
Mount Modification Analysis	*Maser Consulting Project #18963030A Dated May 7, 2019*	*Maser Consulting Connecticut*
Tower Mapping	*TEP Project No. 152002.416943 Dated June 8, 2020*	*Tower Engineering Professionals*

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2018 Connecticut State Building Code, Incorporating the 2015 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
    - Nominal Wind Speed – 89 mph (Per Connecticut Building Code)
    - Exposure Category – B
    - Structure Class – II
    - Ice Thickness – 0.75”
    - Ice Wind Speed – 50 mph
    - Service Wind Speed – 60 mph

Proposed Discrete and Linear Appurtenances:

Carrier	Mount Elevation (ft)	Antenna Elevation (ft)	Quantity	Antenna Manufacturer	Antenna Model	Mount	Coax
AT&T	136.8	136.8	3	Kathrein	800-10966	-	(1) Fiber (2) DC
			3	Ericsson	4449 B5/B12		
			3	Ericsson	RRUS-32		
			1	Raycap	DC6-48-60-08C		

Existing Discrete and Linear Appurtenances:

Carrier	Mount Elevation (ft)	Antenna Elevation (ft)	Quantity	Antenna Manufacturer	Antenna Model	Mount	Coax
Town	176.0	186.0	4	-	20' Omni	Low Profile Platfrom	(2) 3/8" (2) 7/8"
		176.0	1	-	1' Square Panel		
			1	Andrew	HPD3-4.7NS		
Sprint	153.0	153.0	3	-	DNR	Low Profile Platform & Collar Mount	(4) 1-1/4" (3) 7/8"
			3	KMW	ET-X-TU-42-15-37-18-1R-RA		
			6	ALU	1900MHz RRH		
			6	ALU	800MHz RRH		
Verizon	143.7	143.7	3	Commscope	LNX-6515DS-VTM	(3) T-Arm	(12) 1-5/8"
			3	Kathrein	81010022R3B		
			3	Kathrein	81010020R4B		
			6	Ericsson	RRUS-11		
AT&T	136.8	136.8	1	CCI	HPA-65R-BUU-H8	(3) Modified T-Arm	(12) 1-5/8" (2) DC (1) Fiber
			2	CCI	HPA-65R-BUU-H6		
			3	Powerwave	7770.00		
			3	Ericsson	RRUS-32 B2		
			6	Powerwave	LGP21401		
			1	Raycap	DC6-48-60-18-8F		
T-Mobile	123.8	123.8	3	Antel	BXA-171085-12CF	(3) T-Arm	(18) 1-5/8"
			6	Antel	LPA-80080-6CF		
			3	Antel	BXA-70063-6CF		
Town	98.0	108.0	1	-	20' Omni	Side-Arm	(1) 7/8"
Sprint	84.3	84.3	-	-	-	Empty Collar	-

Analysis Approach:

A three-dimensional model was created using tnxTower (version 8.0.5.0), a commercially available analysis software package. This model was used to calculate member stressed for live, dead, wind and ice load cases.

Assumptions:

General Site Design Assumptions:

1. The tower was constructed in accordance with its original design and maintained per the manufacturer's specifications.
2. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in the above tables and the referenced drawings.
3. Mount sizes, weights, and manufacturers are best estimates based on photos provided and determined without the benefit of a site visit by Maser Consulting.
4. Mount pipes are removed when the antennas they support are removed.
5. Coax mounting equipment (feedline ladders, T-brackets, etc.) is removed when all coax attached to the equipment is removed from the tower.
6. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
7. All foundation steel reinforcing is assumed to have been designed to meet or exceed the load carrying capacity of the surrounding soils unless otherwise specified in this report.

Site Specific Assumptions and Design Parameters:

1. Structural Steel Grades have been assumed as follows, unless otherwise noted in this analysis:
    - Pole Sections — ASTM A572 (Gr. 65)
    - Base Plate — ASTM A572 (Gr. 42)
    - Anchor Rods — ASTM A615 (Gr. 75)
    - Reinforcement Bars — ASTM A1035 (Gr. 120)
2. The existing tower is constructed to plumb and is properly maintained with no structural deficiencies and deteriorations.
3. It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes.
4. It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
5. It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
6. It is assumed the modification has been installed as intended as outlined in the referenced SA report.

Calculations:

Selected calculations and analysis output can be found in Appendix A of this report.

Analysis Results and Conclusion:

Component	Utilization %	Pass/Fail
Monopole	*81.8*	*Pass*
Anchor Rods	*59.9*	*Pass*
Foundation	*71.7*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**81.8%**

Recommendation:

The monopole and foundation have **SUFFICIENT** capacity to carry the existing and proposed loading and do not require any modifications.

Maser Consulting Connecticut reserves the right to amend this report if additional information regarding the members is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the appurtenances listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,
Maser Consulting Connecticut

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

Vincent DiGirolamo
Senior Engineer

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Disclaimer of Warranties:

The engineering services rendered by Maser Consulting Connecticut in connection with this structural analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance has been made for any damaged, bent, missing, loose, or rusted members or connections.

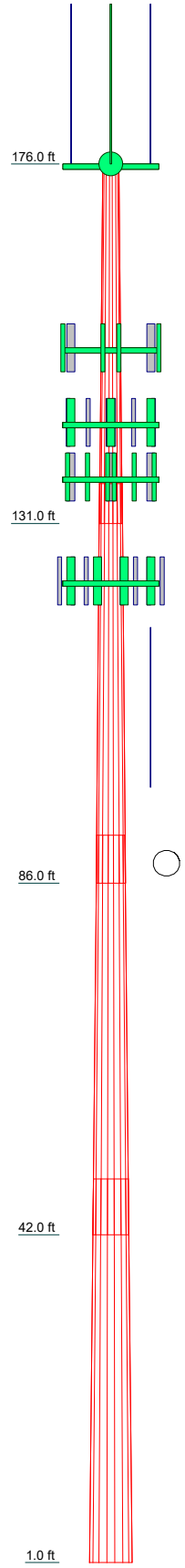
Maser Consulting Connecticut will accept no liability which may arise due to any deficiency in design, material, fabrication, erection, construction, or lack of maintenance. Maser Consulting Connecticut has not performed a site visit of the tower structure to verify member sizes or equipment loading. Contractor should inspect the condition of the existing structure, mounting frames and connections and notify Maser Consulting Connecticut of any discrepancies or deficiencies before proceeding with installation.

The attached sketch is a schematic representation of the analyzed tower. The contractor shall be responsible for field verifying the existing conditions, proper fit, and clearances in the field. Any mention of structural modifications are reasonable estimates and should not be used as a construction document. Construction documents depicting the required modification are obtainable from Maser Consulting Connecticut, but are beyond the scope of this report.

Maser Consulting Connecticut makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of the tower. Maser Consulting Connecticut will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report.

APPENDIX A

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	45.00	18	0.2500	5.00	24.0000	34.6880	A572-65	3.5
2	50.00	18	0.3125	6.00	33.0004	44.6880		6.5
3	50.00	18	0.3750	7.00	42.6605	54.5000		9.8
4	48.00	18	0.3750		52.0925	64.5000		11.3
								31.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Platform Mount (Town)	176	HPA-65R-BUU-H8 (ATI)	136.8
PD220 (Town)	176	HPA-65R-BUU-H8 (ATI)	136.8
PD220 (Town)	176	7770.00 (ATI)	136.8
PD220 (Town)	176	7770.00 (ATI)	136.8
PD220 (Town)	176	7770.00 (ATI)	136.8
1' Square Panel (Town)	176	800-10966 (ATI)	136.8
(4) 6' x 2" Mount Pipe (Town)	176	800-10966 (ATI)	136.8
6' x 2" Mount Pipe (Town)	176	800-10966 (ATI)	136.8
6' x 2" Mount Pipe (Town)	176	RRUS 32 B2 (ATI)	136.8
HP3	176	RRUS 32 B2 (ATI)	136.8
(2) 1900MHz RRH (Sprint)	155 - 153	RRUS 32 B2 (ATI)	136.8
(2) 1900MHz RRH (Sprint)	155	RRUS 32 (ATI)	136.8
(2) 1900MHz RRH (Sprint)	155	RRUS 32 (ATI)	136.8
(2) 800MHZ RRH (Sprint)	155	RRUS 32 (ATI)	136.8
(2) 800MHZ RRH (Sprint)	155	RRUS 4449 B5/B12 (ATI)	136.8
(2) 800MHZ RRH (Sprint)	155	RRUS 4449 B5/B12 (ATI)	136.8
(2) 6' x 2" Mount Pipe (Sprint)	155	RRUS 4449 B5/B12 (ATI)	136.8
(2) 6' x 2" Mount Pipe (Sprint)	155	(2) LGP21401 (ATI)	136.8
(2) 6' x 2" Mount Pipe (Sprint)	155	(2) LGP21401 (ATI)	136.8
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe (Sprint)	153	(2) LGP21401 (ATI)	136.8
		DC6-48-60-18-8F (ATI)	136.8
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe (Sprint)	153	DC6-48-60-0-8C (ATI)	136.8
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe (Sprint)	153	BXA-171085-12CF-EDIN-X w/ Mount Pipe (T-Mobile)	123.8
DNR w/ Mount Pipe (Sprint)	153	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
Platform Mount (Sprint)	153	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
Collar Mount (Sprint)	153	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
DNR w/ Mount Pipe (Sprint)	153	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
DNR w/ Mount Pipe (Sprint)	153	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
LNX-6515DS-A1M w/ Mount Pipe (VZW)	143.7	LPA-80080-6CF-EDIN-2 w/ Mount Pipe (T-Mobile)	123.8
LNX-6515DS-A1M w/ Mount Pipe (VZW)	143.7	BXA-70063-6CF-EDIN-0 w/ Mount Pipe (T-Mobile)	123.8
81010020R4B w/ Mount Pipe (VZW)	143.7	BXA-70063-6CF-EDIN-0 w/ Mount Pipe (T-Mobile)	123.8
81010020R4B w/ Mount Pipe (VZW)	143.7	BXA-70063-6CF-EDIN-0 w/ Mount Pipe (T-Mobile)	123.8
81010020R4B w/ Mount Pipe (VZW)	143.7	T-Arm Mount (T-Mobile)	123.8
81010022R3B w/ Mount Pipe (VZW)	143.7	T-Arm Mount (T-Mobile)	123.8
81010022R3B w/ Mount Pipe (VZW)	143.7	T-Arm Mount (T-Mobile)	123.8
81010022R3B w/ Mount Pipe (VZW)	143.7	BXA-171085-12CF-EDIN-X w/ Mount Pipe (T-Mobile)	123.8
(2) RRUS 11 (VZW)	143.7	BXA-171085-12CF-EDIN-X w/ Mount Pipe (T-Mobile)	123.8
(2) RRUS 11 (VZW)	143.7	Side Arm Mount (Town)	98
(2) RRUS 11 (VZW)	143.7	PD220 (Town)	98
T-Arm Mount (VZW)	143.7	Collar Mount (Sprint)	84.3
T-Arm Mount (VZW)	143.7		
T-Arm Mount (VZW)	143.7		
Collar Mount (Sprint)	143.7		
LNX-6515DS-A1M w/ Mount Pipe (VZW)	143.7		
Modified T-Arm Mount (ATI)	136.8		
Modified T-Arm Mount (ATI)	136.8		
Modified T-Arm Mount (ATI)	136.8		
HPA-65R-BUU-H8 (ATI)	136.8		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
FAX:

Job: ***18963030A***			
Project: ***CT2070***			
Client: AT&T / Empire Telecom	Drawn by: Vincent DiGirolamo	App'd:	
Code: TIA-222-G	Date: 06/12/20	Scale: NTS	
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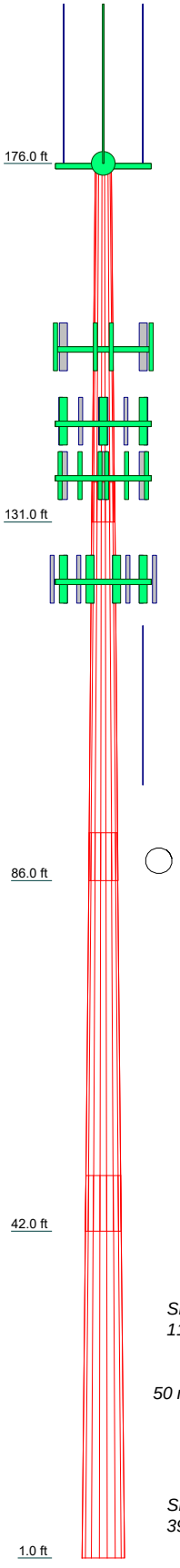
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	45.00	18	0.2500	5.00	24.0000	34.6880	A572-65	3.5
2	50.00	18	0.3125	6.00	33.0004	44.6880		6.5
3	50.00	18	0.3750	7.00	42.6605	54.5000		9.8
4	48.00	18	0.3750		52.0925	64.5000		11.3
								31.1



ALL REACTIONS ARE FACTORED

AXIAL 99 K

SHEAR 11 K

MOMENT 1394 kip-ft

TORQUE 1 kip-ft

50 mph WIND - 0.7500 in ICE

AXIAL 61 K

SHEAR 39 K

MOMENT 4955 kip-ft

TORQUE 1 kip-ft

REACTIONS - 89 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 89 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 81.8%

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
FAX:

Job: ***18963030A***			
Project: ***CT2070***			
Client: AT&T / Empire Telecom	Drawn by: Vincent DiGirolamo	App'd:	
Code: TIA-222-G	Date: 06/12/20	Scale: NTS	
Path: \\maserconsulting.com\BWE\AllOffices\MLaurel\Projects\2018\18963000A\18963030A\Structural\Tower Analysis\Rev 2\TNX\CT2070.eri		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 89 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification		Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	176.00-131.00	45.00	5.00	18	24.0000	34.6880	0.2500	1.0000	A572-65 (65 ksi)
L2	131.00-86.00	50.00	6.00	18	33.0004	44.6880	0.3125	1.2500	A572-65 (65 ksi)
L3	86.00-42.00	50.00	7.00	18	42.6605	54.5000	0.3750	1.5000	A572-65 (65 ksi)
L4	42.00-1.00	48.00		18	52.0925	64.5000	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.3317	18.8456	1342.9976	8.4313	12.1920	110.1540	2687.7623	9.4246	3.7840	15.136
	35.1846	27.3266	4094.4743	12.2255	17.6215	232.3567	8194.3362	13.6659	5.6651	22.66
L2	34.6481	32.4224	4376.8053	11.6042	16.7642	261.0801	8759.3697	16.2143	5.2581	16.826
	45.3292	44.0149	10950.2535	15.7533	22.7015	482.3581	21914.9156	22.0117	7.3151	23.408
L3	44.7034	50.3303	11369.7220	15.0114	21.6715	524.6386	22754.4046	25.1699	6.8482	18.262
	55.2829	64.4223	23843.4650	19.2144	27.6860	861.2102	47718.3038	32.2173	8.9320	23.819
L4	54.6756	61.5567	20801.1541	18.3597	26.4630	786.0475	41629.6788	30.7842	8.5083	22.689
	65.4372	76.3248	39651.3314	22.7644	32.7660	1210.1365	79354.8371	38.1696	10.6920	28.512

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 176.00-131.00				1	1	1			
L2 131.00-86.00				1	1	1			
L3 86.00-42.00				1	1	1			
L4 42.00-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
Safety Line 3/8	C	No	Surface Ar (CaAa)	176.00 - 1.00	1	1	0.000 0.000	0.3750		0.22
Step Pegs (3/4" Diameter)	C	No	Surface Ar (CaAa)	176.00 - 1.00	1	1	0.000 0.000	0.7500		1.50

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
7/8 (Town)	C	No	No	Inside Pole	176.00 - 1.00	2	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
3/8 (Town)	C	No	No	Inside Pole	176.00 - 1.00	2	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25
1 1/4 (Sprint)	C	No	No	Inside Pole	153.00 - 1.00	4	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
7/8 (Sprint)	C	No	No	Inside Pole	153.00 - 1.00	3	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
1 5/8 (VZW)	C	No	No	Inside Pole	143.70 - 1.00	12	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
3/8" Fiber (AT&T)	C	No	No	Inside Pole	136.00 - 1.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
7/8 DC (AT&T)	C	No	No	Inside Pole	136.00 - 1.00	4	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
1 5/8 (AT&T)	C	No	No	Inside Pole	137.00 - 1.00	12	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
1 5/8 (T-Mobile)	C	No	No	Inside Pole	124.00 - 1.00	18	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
7/8 (Town)	C	No	No	Inside Pole	101.00 - 1.00	1	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	176.00-131.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.063	0.000	0.49
L2	131.00-86.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.063	0.000	2.34
L3	86.00-42.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	4.950	0.000	2.43
L4	42.00-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	4.612	0.000	2.27

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	176.00-131.00	A	1.748	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.526	0.000	0.94
L2	131.00-86.00	A	1.689	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.526	0.000	2.78
L3	86.00-42.00	A	1.602	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	34.669	0.000	2.84
L4	42.00-1.00	A	1.433	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	30.888	0.000	2.61

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	176.00-131.00	0.0000	0.9776	0.0000	2.9346
L2	131.00-86.00	0.0000	0.9888	0.0000	3.1459
L3	86.00-42.00	0.0000	0.9955	0.0000	3.2072
L4	42.00-1.00	0.0000	0.9999	0.0000	3.1804

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	12	Safety Line 3/8	131.00 - 176.00	1.0000	1.0000
L1	13	Step Pegs (3/4" Diameter)	131.00 - 176.00	1.0000	1.0000
L2	12	Safety Line 3/8	86.00 - 131.00	1.0000	1.0000
L2	13	Step Pegs (3/4" Diameter)	86.00 - 131.00	1.0000	1.0000
L3	12	Safety Line 3/8	42.00 - 86.00	1.0000	1.0000
L3	13	Step Pegs (3/4" Diameter)	42.00 - 86.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Platform Mount	C	None		0.0000	176.00	No Ice	20.80	20.80	1.80
(Town)						1/2" Ice	28.10	28.10	2.07
						1" Ice	35.40	35.40	2.33
PD220	A	From	5.70	0.0000	176.00	No Ice	3.56	3.56	0.02
(Town)		Centroid-Face	0.00			1/2" Ice	7.13	7.13	0.05
			10.00			1" Ice	10.70	10.70	0.07
PD220	A	From	5.70	0.0000	176.00	No Ice	3.56	3.56	0.02
(Town)		Centroid-Face	0.00			1/2" Ice	7.13	7.13	0.05
			10.00			1" Ice	10.70	10.70	0.07
PD220	B	From	5.70	0.0000	176.00	No Ice	3.56	3.56	0.02
(Town)		Centroid-Face	0.00			1/2" Ice	7.13	7.13	0.05
			10.00			1" Ice	10.70	10.70	0.07
PD220	C	From	5.70	0.0000	176.00	No Ice	3.56	3.56	0.02
(Town)		Centroid-Face	0.00			1/2" Ice	7.13	7.13	0.05
			10.00			1" Ice	10.70	10.70	0.07
1' Square Panel	C	From	5.70	0.0000	176.00	No Ice	1.20	0.41	0.02
(Town)		Centroid-Face	0.00			1/2" Ice	1.34	0.50	0.03
			0.00			1" Ice	1.48	0.59	0.04
***									
Platform Mount	C	None		0.0000	153.00	No Ice	14.66	14.66	1.25
(Sprint)						1/2" Ice	18.87	18.87	1.48
						1" Ice	23.08	23.08	1.71
Collar Mount	C	None		0.0000	153.00	No Ice	1.50	1.50	0.03
(Sprint)						1/2" Ice	1.74	1.74	0.04
						1" Ice	1.98	1.98	0.04
DNR w/ Mount Pipe	B	From	4.00	0.0000	153.00	No Ice	5.54	6.49	0.08
(Sprint)		Centroid-Leg	0.00			1/2" Ice	6.03	7.32	0.14
			0.00			1" Ice	6.49	8.02	0.21
DNR w/ Mount Pipe	C	From	4.00	0.0000	153.00	No Ice	5.54	6.49	0.08
(Sprint)		Centroid-Leg	0.00			1/2" Ice	6.03	7.32	0.14
			0.00			1" Ice	6.49	8.02	0.21
DNR w/ Mount Pipe	A	From	4.00	0.0000	153.00	No Ice	5.54	6.49	0.08
(Sprint)		Centroid-Leg	0.00			1/2" Ice	6.03	7.32	0.14
			0.00			1" Ice	6.49	8.02	0.21
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe	A	From Face	4.00	0.0000	153.00	No Ice	7.76	4.71	0.07
(Sprint)			0.00			1/2" Ice	8.28	5.51	0.13
			0.00			1" Ice	8.77	6.19	0.20
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe	B	From Face	4.00	0.0000	153.00	No Ice	7.76	4.71	0.07
(Sprint)			0.00			1/2" Ice	8.28	5.51	0.13
			0.00			1" Ice	8.77	6.19	0.20
ET-X-TU-42-15-37-18-iR-RA w/ Mount Pipe	C	From Face	4.00	0.0000	153.00	No Ice	7.76	4.71	0.07
(Sprint)			0.00			1/2" Ice	8.28	5.51	0.13
			0.00			1" Ice	8.77	6.19	0.20
(2) 1900MHz RRH	A	From Face	1.00	0.0000	153.00 - 155.00	No Ice	2.49	3.26	0.04
(Sprint)			0.00			1/2" Ice	2.70	3.48	0.08
			0.00			1" Ice	2.91	3.72	0.11
(2) 1900MHz RRH	B	From Face	1.00	0.0000	155.00	No Ice	2.49	3.26	0.04
(Sprint)			0.00			1/2" Ice	2.70	3.48	0.08
			0.00			1" Ice	2.91	3.72	0.11
(2) 1900MHz RRH	C	From Face	1.00	0.0000	155.00	No Ice	2.49	3.26	0.04
(Sprint)			0.00			1/2" Ice	2.70	3.48	0.08
			0.00			1" Ice	2.91	3.72	0.11
(2) 800MHZ RRH	A	From Face	1.00	0.0000	155.00	No Ice	1.71	1.29	0.05
(Sprint)			0.00			1/2" Ice	1.87	1.44	0.07
			0.00			1" Ice	2.04	1.59	0.09
(2) 800MHZ RRH	B	From Face	1.00	0.0000	155.00	No Ice	1.71	1.29	0.05
(Sprint)			0.00			1/2" Ice	1.87	1.44	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1" Ice	2.04	1.59	0.09
(2) 800MHZ RRH (Sprint)	C	From Face	1.00	0.0000	155.00		No Ice	1.71	1.29	0.05
			0.00				1/2" Ice	1.87	1.44	0.07
			0.00				1" Ice	2.04	1.59	0.09
(2) 6' x 2" Mount Pipe (Sprint)	A	From Face	1.00	0.0000	155.00		No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
(2) 6' x 2" Mount Pipe (Sprint)	B	From Face	1.00	0.0000	155.00		No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
(2) 6' x 2" Mount Pipe (Sprint)	C	From Face	1.00	0.0000	155.00		No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
***										
T-Arm Mount (VZW)	A	None		0.0000	143.70		No Ice	14.16	9.13	0.36
							1/2" Ice	14.16	12.17	0.47
							1" Ice	14.16	15.21	0.57
T-Arm Mount (VZW)	B	None		0.0000	143.70		No Ice	14.16	9.13	0.36
							1/2" Ice	14.16	12.17	0.47
							1" Ice	14.16	15.21	0.57
T-Arm Mount (VZW)	C	None		0.0000	143.70		No Ice	14.16	9.13	0.36
							1/2" Ice	14.16	12.17	0.47
							1" Ice	14.16	15.21	0.57
LNX-6515DS-A1M w/ Mount Pipe (VZW)	A	From Face	2.00	0.0000	143.70		No Ice	11.68	9.84	0.08
			0.00				1/2" Ice	12.40	11.37	0.17
			0.00				1" Ice	13.14	12.91	0.27
LNX-6515DS-A1M w/ Mount Pipe (VZW)	B	From Face	2.00	0.0000	143.70		No Ice	11.68	9.84	0.08
			0.00				1/2" Ice	12.40	11.37	0.17
			0.00				1" Ice	13.14	12.91	0.27
LNX-6515DS-A1M w/ Mount Pipe (VZW)	C	From Face	2.00	0.0000	143.70		No Ice	11.68	9.84	0.08
			0.00				1/2" Ice	12.40	11.37	0.17
			0.00				1" Ice	13.14	12.91	0.27
81010020R4B w/ Mount Pipe (VZW)	A	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
81010020R4B w/ Mount Pipe (VZW)	B	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
81010020R4B w/ Mount Pipe (VZW)	C	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
81010022R3B w/ Mount Pipe (VZW)	A	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
81010022R3B w/ Mount Pipe (VZW)	B	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
81010022R3B w/ Mount Pipe (VZW)	C	From Face	2.00	0.0000	143.70		No Ice	6.16	5.55	0.10
			0.00				1/2" Ice	6.60	6.30	0.16
			0.00				1" Ice	7.03	7.00	0.22
(2) RRUS 11 (VZW)	A	From Face	1.00	0.0000	143.70		No Ice	2.78	1.19	0.05
			0.00				1/2" Ice	2.99	1.33	0.07
			0.00				1" Ice	3.21	1.49	0.10
(2) RRUS 11 (VZW)	B	From Face	1.00	0.0000	143.70		No Ice	2.78	1.19	0.05
			0.00				1/2" Ice	2.99	1.33	0.07
			0.00				1" Ice	3.21	1.49	0.10
(2) RRUS 11	C	From Face	1.00	0.0000	143.70		No Ice	2.78	1.19	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(VZW)			0.00			1/2" Ice	2.99	1.33	0.07
			0.00			1" Ice	3.21	1.49	0.10
***									
T-Arm Mount	A	None		0.0000	123.80	No Ice	14.16	9.13	0.36
(T-Mobile)						1/2" Ice	14.16	12.17	0.47
						1" Ice	14.16	15.21	0.57
T-Arm Mount	B	None		0.0000	123.80	No Ice	14.16	9.13	0.36
(T-Mobile)						1/2" Ice	14.16	12.17	0.47
						1" Ice	14.16	15.21	0.57
T-Arm Mount	C	None		0.0000	123.80	No Ice	14.16	9.13	0.36
(T-Mobile)						1/2" Ice	14.16	12.17	0.47
						1" Ice	14.16	15.21	0.57
BXA-171085-12CF-EDIN-X	A	From Face	3.00	0.0000	123.80	No Ice	5.03	5.29	0.04
w/ Mount Pipe			0.00			1/2" Ice	5.58	6.46	0.09
(T-Mobile)			0.00			1" Ice	6.10	7.35	0.14
BXA-171085-12CF-EDIN-X	B	From Face	3.00	0.0000	123.80	No Ice	5.03	5.29	0.04
w/ Mount Pipe			0.00			1/2" Ice	5.58	6.46	0.09
(T-Mobile)			0.00			1" Ice	6.10	7.35	0.14
BXA-171085-12CF-EDIN-X	C	From Face	3.00	0.0000	123.80	No Ice	5.03	5.29	0.04
w/ Mount Pipe			0.00			1/2" Ice	5.58	6.46	0.09
(T-Mobile)			0.00			1" Ice	6.10	7.35	0.14
LPA-80080-6CF-EDIN-2 w/	A	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
LPA-80080-6CF-EDIN-2 w/	B	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
LPA-80080-6CF-EDIN-2 w/	C	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
LPA-80080-6CF-EDIN-2 w/	A	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
LPA-80080-6CF-EDIN-2 w/	B	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
LPA-80080-6CF-EDIN-2 w/	C	From Face	3.00	0.0000	123.80	No Ice	4.56	10.27	0.05
Mount Pipe			0.00			1/2" Ice	5.10	11.44	0.11
(T-Mobile)			0.00			1" Ice	5.61	12.32	0.19
BXA-70063-6CF-EDIN-0 w/	A	From Face	3.00	0.0000	123.80	No Ice	7.81	5.80	0.04
Mount Pipe			0.00			1/2" Ice	8.36	6.95	0.10
(T-Mobile)			0.00			1" Ice	8.87	7.82	0.17
BXA-70063-6CF-EDIN-0 w/	B	From Face	3.00	0.0000	123.80	No Ice	7.81	5.80	0.04
Mount Pipe			0.00			1/2" Ice	8.36	6.95	0.10
(T-Mobile)			0.00			1" Ice	8.87	7.82	0.17
BXA-70063-6CF-EDIN-0 w/	C	From Face	3.00	0.0000	123.80	No Ice	7.81	5.80	0.04
Mount Pipe			0.00			1/2" Ice	8.36	6.95	0.10
(T-Mobile)			0.00			1" Ice	8.87	7.82	0.17
***									
Side Arm Mount	B	None		0.0000	98.00	No Ice	0.85	1.67	0.07
(Town)						1/2" Ice	1.14	2.34	0.08
						1" Ice	1.43	3.01	0.09
PD220	B	From Face	4.00	0.0000	98.00	No Ice	3.56	3.56	0.02
(Town)			0.00			1/2" Ice	7.13	7.13	0.05
			10.00			1" Ice	10.70	10.70	0.07
***									
Collar Mount	C	None		0.0000	84.30	No Ice	1.50	1.50	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Sprint)						1/2" Ice	1.74	1.74	0.04
						1" Ice	1.98	1.98	0.04
***									
Modified T-Arm Mount (AT&T)	A	None		0.0000	136.80	No Ice	27.50	136.60	0.71
						1/2" Ice	41.70	23.64	0.91
						1" Ice	54.90	29.54	1.11
Modified T-Arm Mount (AT&T)	B	None		0.0000	136.80	No Ice	27.50	136.60	0.71
						1/2" Ice	41.70	23.64	0.91
						1" Ice	54.90	29.54	1.11
Modified T-Arm Mount (AT&T)	C	None		0.0000	136.80	No Ice	27.50	136.60	0.71
						1/2" Ice	41.70	23.64	0.91
						1" Ice	54.90	29.54	1.11
HPA-65R-BUU-H8 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	12.98	7.52	0.07
						1/2" Ice	13.56	8.09	0.14
						1" Ice	14.15	8.67	0.22
HPA-65R-BUU-H8 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	12.98	7.52	0.07
						1/2" Ice	13.56	8.09	0.14
						1" Ice	14.15	8.67	0.22
HPA-65R-BUU-H8 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	12.98	7.52	0.07
						1/2" Ice	13.56	8.09	0.14
						1" Ice	14.15	8.67	0.22
7770.00 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	5.51	2.93	0.04
						1/2" Ice	5.87	3.27	0.07
						1" Ice	6.23	3.63	0.11
7770.00 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	5.51	2.93	0.04
						1/2" Ice	5.87	3.27	0.07
						1" Ice	6.23	3.63	0.11
7770.00 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	5.51	2.93	0.04
						1/2" Ice	5.87	3.27	0.07
						1" Ice	6.23	3.63	0.11
800-10966 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	17.36	7.50	0.13
						1/2" Ice	17.99	8.09	0.22
						1" Ice	18.63	8.69	0.32
800-10966 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	17.36	7.50	0.13
						1/2" Ice	17.99	8.09	0.22
						1" Ice	18.63	8.69	0.32
800-10966 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	17.36	7.50	0.13
						1/2" Ice	17.99	8.09	0.22
						1" Ice	18.63	8.69	0.32
RRUS 32 B2 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.73	1.67	0.05
						1/2" Ice	2.95	1.86	0.07
						1" Ice	3.18	2.05	0.10
RRUS 32 B2 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.73	1.67	0.05
						1/2" Ice	2.95	1.86	0.07
						1" Ice	3.18	2.05	0.10
RRUS 32 B2 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.73	1.67	0.05
						1/2" Ice	2.95	1.86	0.07
						1" Ice	3.18	2.05	0.10
RRUS 32 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.86	1.78	0.06
						1/2" Ice	3.08	1.97	0.08
						1" Ice	3.32	2.17	0.10
RRUS 32 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.86	1.78	0.06
						1/2" Ice	3.08	1.97	0.08
						1" Ice	3.32	2.17	0.10
RRUS 32 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice	2.86	1.78	0.06
						1/2" Ice	3.08	1.97	0.08
						1" Ice	3.32	2.17	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRUS 4449 B5/B12 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
(2) LGP21401 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
DC6-48-60-18-8F (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.20 2.40 2.60	2.20 2.40 2.60	0.02 0.04 0.07
DC6-48-60-0-8C (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.04 2.23 2.42	2.04 2.23 2.42	0.02 0.04 0.06
(4) 6' x 2" Mount Pipe (Town)	A	From Centroid-Face	5.70 0.00 10.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe (Town)	B	From Centroid-Face	5.70 0.00 10.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe (Town)	C	From Centroid-Face	5.70 0.00 10.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Collar Mount (Sprint)	C	None		0.0000	143.70	No Ice 1/2" Ice 1" Ice	1.50 1.74 1.98	1.50 1.74 1.98	0.03 0.04 0.04

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HP3	C	Paraboloid w/Radome	From Centroid -Face	5.70 0.00 0.00	0.0000		176.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	0.02 0.04 0.06

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	176 - 131	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.95	1.85	-0.95
			Max. Mx	20	-14.23	240.47	1.33
			Max. My	2	-14.20	0.36	246.34
			Max. Vy	20	-26.40	240.47	1.33
			Max. Vx	2	-26.58	0.36	246.34
			Max. Torque	2			1.59
L2	131 - 86	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.45	1.37	-1.54
			Max. Mx	20	-26.32	1593.47	2.84
			Max. My	2	-26.30	0.18	1607.00
			Max. Vy	20	-33.52	1593.47	2.84
			Max. Vx	2	-33.69	0.18	1607.00
			Max. Torque	24			1.55
L3	86 - 42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.55	1.37	-2.53
			Max. Mx	20	-40.99	3105.15	4.20
			Max. My	2	-40.98	0.06	3125.87
			Max. Vy	20	-36.61	3105.15	4.20
			Max. Vx	2	-36.78	0.06	3125.87
			Max. Torque	24			0.92
L4	42 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.32	1.37	-3.77
			Max. Mx	20	-60.58	4926.65	5.63
			Max. My	2	-60.58	-0.09	4955.13
			Max. Vy	20	-39.13	4926.65	5.63
			Max. Vx	2	-39.30	-0.09	4955.13
			Max. Torque	24			0.91

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	99.32	0.00	-10.97
	Max. H_x	21	45.46	39.09	0.03
	Max. H_z	2	60.61	-0.00	39.25
	Max. M_x	2	4955.13	-0.00	39.25
	Max. M_z	8	4925.88	-39.09	0.04
	Max. Torsion	24	0.91	19.60	34.00
	Min. Vert	23	45.46	33.90	19.62
	Min. H_x	9	45.46	-39.09	0.04
	Min. H_z	14	60.61	0.00	-39.21
	Min. M_x	14	-4947.75	0.00	-39.21
	Min. M_z	20	-4926.65	39.09	0.03
	Min. Torsion	14	-0.89	0.00	-39.21

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	50.51	0.00	0.00	0.55	0.30	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.6 Wind 0 deg - No Ice	60.61	0.00	-39.25	-4955.13	-0.09	-0.89
0.9 Dead+1.6 Wind 0 deg - No Ice	45.46	0.00	-39.25	-4903.29	-0.18	-0.88
1.2 Dead+1.6 Wind 30 deg - No Ice	60.61	19.61	-34.00	-4292.13	-2473.70	-0.63
0.9 Dead+1.6 Wind 30 deg - No Ice	45.46	19.61	-34.00	-4247.24	-2447.84	-0.62
1.2 Dead+1.6 Wind 60 deg - No Ice	60.61	33.90	-19.63	-2476.95	-4273.66	-0.37
0.9 Dead+1.6 Wind 60 deg - No Ice	45.46	33.90	-19.63	-2451.12	-4228.94	-0.37
1.2 Dead+1.6 Wind 90 deg - No Ice	60.61	39.09	-0.04	-6.57	-4925.88	-0.06
0.9 Dead+1.6 Wind 90 deg - No Ice	45.46	39.09	-0.04	-6.66	-4874.33	-0.06
1.2 Dead+1.6 Wind 120 deg - No Ice	60.61	33.85	19.55	2464.56	-4265.44	0.40
0.9 Dead+1.6 Wind 120 deg - No Ice	45.46	33.85	19.55	2438.55	-4220.82	0.40
1.2 Dead+1.6 Wind 150 deg - No Ice	60.61	19.56	33.93	4280.70	-2465.92	0.83
0.9 Dead+1.6 Wind 150 deg - No Ice	45.46	19.56	33.93	4235.62	-2440.16	0.82
1.2 Dead+1.6 Wind 180 deg - No Ice	60.61	-0.00	39.21	4947.75	0.84	0.89
0.9 Dead+1.6 Wind 180 deg - No Ice	45.46	-0.00	39.21	4895.66	0.74	0.88
1.2 Dead+1.6 Wind 210 deg - No Ice	60.61	-19.57	33.93	4281.17	2467.49	0.71
0.9 Dead+1.6 Wind 210 deg - No Ice	45.46	-19.57	33.93	4236.09	2441.52	0.71
1.2 Dead+1.6 Wind 240 deg - No Ice	60.61	-33.86	19.56	2465.37	4266.68	0.48
0.9 Dead+1.6 Wind 240 deg - No Ice	45.46	-33.86	19.56	2439.35	4221.84	0.48
1.2 Dead+1.6 Wind 270 deg - No Ice	60.61	-39.09	-0.03	-5.63	4926.65	0.06
0.9 Dead+1.6 Wind 270 deg - No Ice	45.46	-39.09	-0.03	-5.73	4874.90	0.06
1.2 Dead+1.6 Wind 300 deg - No Ice	60.61	-33.90	-19.62	-2476.15	4273.96	-0.52
0.9 Dead+1.6 Wind 300 deg - No Ice	45.46	-33.90	-19.62	-2450.33	4229.04	-0.51
1.2 Dead+1.6 Wind 330 deg - No Ice	60.61	-19.60	-34.00	-4291.67	2473.65	-0.91
0.9 Dead+1.6 Wind 330 deg - No Ice	45.46	-19.60	-34.00	-4246.79	2447.60	-0.91
1.2 Dead+1.0 Ice+1.0 Temp	99.32	-0.00	0.00	3.77	1.37	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	99.32	0.00	-10.98	-1387.94	1.31	-0.50
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	99.32	5.48	-9.51	-1201.73	-693.54	-0.67
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	99.32	9.48	-5.49	-691.95	-1199.48	-0.69
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	99.32	10.94	-0.01	2.15	-1382.97	-0.54
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	99.32	9.47	5.47	696.45	-1197.33	-0.22
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	99.32	5.47	9.49	1206.52	-691.45	0.18

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	99.32	-0.00	10.97	1393.83	1.71	0.50
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	99.32	-5.47	9.49	1206.73	694.82	0.69
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	99.32	-9.47	5.47	696.80	1200.56	0.72
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	99.32	-10.94	-0.01	2.55	1386.00	0.54
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	99.32	-9.48	-5.49	-691.60	1202.31	0.19
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	99.32	-5.48	-9.51	-1201.53	696.22	-0.21
Dead+Wind 0 deg - Service	50.51	0.00	-9.98	-1251.68	0.20	-0.23
Dead+Wind 30 deg - Service	50.51	4.98	-8.64	-1084.15	-624.84	-0.16
Dead+Wind 60 deg - Service	50.51	8.62	-4.99	-625.48	-1079.65	-0.10
Dead+Wind 90 deg - Service	50.51	9.94	-0.01	-1.26	-1244.45	-0.02
Dead+Wind 120 deg - Service	50.51	8.60	4.97	623.14	-1077.57	0.10
Dead+Wind 150 deg - Service	50.51	4.97	8.62	1082.05	-622.87	0.21
Dead+Wind 180 deg - Service	50.51	-0.00	9.96	1250.60	0.44	0.23
Dead+Wind 210 deg - Service	50.51	-4.97	8.62	1082.17	623.71	0.18
Dead+Wind 240 deg - Service	50.51	-8.60	4.97	623.35	1078.33	0.12
Dead+Wind 270 deg - Service	50.51	-9.94	-0.01	-1.02	1245.08	0.02
Dead+Wind 300 deg - Service	50.51	-8.61	-4.99	-625.27	1080.17	-0.13
Dead+Wind 330 deg - Service	50.51	-4.98	-8.64	-1084.03	625.27	-0.23

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-50.51	0.00	0.00	50.51	0.00	0.000%
2	0.00	-60.61	-39.25	-0.00	60.61	39.25	0.000%
3	0.00	-45.46	-39.25	-0.00	45.46	39.25	0.000%
4	19.61	-60.61	-34.00	-19.61	60.61	34.00	0.000%
5	19.61	-45.46	-34.00	-19.61	45.46	34.00	0.000%
6	33.90	-60.61	-19.63	-33.90	60.61	19.63	0.000%
7	33.90	-45.46	-19.63	-33.90	45.46	19.63	0.000%
8	39.09	-60.61	-0.04	-39.09	60.61	0.04	0.000%
9	39.09	-45.46	-0.04	-39.09	45.46	0.04	0.000%
10	33.85	-60.61	19.55	-33.85	60.61	-19.55	0.000%
11	33.85	-45.46	19.55	-33.85	45.46	-19.55	0.000%
12	19.56	-60.61	33.93	-19.56	60.61	-33.93	0.000%
13	19.56	-45.46	33.93	-19.56	45.46	-33.93	0.000%
14	-0.00	-60.61	39.21	0.00	60.61	-39.21	0.000%
15	-0.00	-45.46	39.21	0.00	45.46	-39.21	0.000%
16	-19.57	-60.61	33.93	19.57	60.61	-33.93	0.000%
17	-19.57	-45.46	33.93	19.57	45.46	-33.93	0.000%
18	-33.86	-60.61	19.56	33.86	60.61	-19.56	0.000%
19	-33.86	-45.46	19.56	33.86	45.46	-19.56	0.000%
20	-39.09	-60.61	-0.03	39.09	60.61	0.03	0.000%
21	-39.09	-45.46	-0.03	39.09	45.46	0.03	0.000%
22	-33.90	-60.61	-19.62	33.90	60.61	19.62	0.000%
23	-33.90	-45.46	-19.62	33.90	45.46	19.62	0.000%
24	-19.60	-60.61	-34.00	19.60	60.61	34.00	0.000%
25	-19.60	-45.46	-34.00	19.60	45.46	34.00	0.000%
26	0.00	-99.32	0.00	0.00	99.32	-0.00	0.000%
27	0.00	-99.32	-10.98	-0.00	99.32	10.98	0.000%
28	5.48	-99.32	-9.51	-5.48	99.32	9.51	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
29	9.48	-99.32	-5.49	-9.48	99.32	5.49	0.000%
30	10.94	-99.32	-0.01	-10.94	99.32	0.01	0.000%
31	9.47	-99.32	5.47	-9.47	99.32	-5.47	0.000%
32	5.47	-99.32	9.49	-5.47	99.32	-9.49	0.000%
33	-0.00	-99.32	10.97	0.00	99.32	-10.97	0.000%
34	-5.47	-99.32	9.49	5.47	99.32	-9.49	0.000%
35	-9.47	-99.32	5.47	9.47	99.32	-5.47	0.000%
36	-10.94	-99.32	-0.01	10.94	99.32	0.01	0.000%
37	-9.48	-99.32	-5.49	9.48	99.32	5.49	0.000%
38	-5.48	-99.32	-9.51	5.48	99.32	9.51	0.000%
39	0.00	-50.51	-9.98	-0.00	50.51	9.98	0.000%
40	4.98	-50.51	-8.64	-4.98	50.51	8.64	0.000%
41	8.62	-50.51	-4.99	-8.62	50.51	4.99	0.000%
42	9.94	-50.51	-0.01	-9.94	50.51	0.01	0.000%
43	8.60	-50.51	4.97	-8.60	50.51	-4.97	0.000%
44	4.97	-50.51	8.62	-4.97	50.51	-8.62	0.000%
45	-0.00	-50.51	9.96	0.00	50.51	-9.96	0.000%
46	-4.97	-50.51	8.62	4.97	50.51	-8.62	0.000%
47	-8.60	-50.51	4.97	8.60	50.51	-4.97	0.000%
48	-9.94	-50.51	-0.01	9.94	50.51	0.01	0.000%
49	-8.61	-50.51	-4.99	8.61	50.51	4.99	0.000%
50	-4.98	-50.51	-8.64	4.98	50.51	8.64	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00002903
3	Yes	5	0.00000001	0.00001308
4	Yes	6	0.00000001	0.00004359
5	Yes	6	0.00000001	0.00001385
6	Yes	6	0.00000001	0.00004407
7	Yes	6	0.00000001	0.00001405
8	Yes	5	0.00000001	0.00001093
9	Yes	4	0.00000001	0.00012795
10	Yes	6	0.00000001	0.00004386
11	Yes	6	0.00000001	0.00001401
12	Yes	6	0.00000001	0.00004311
13	Yes	6	0.00000001	0.00001371
14	Yes	5	0.00000001	0.00002941
15	Yes	5	0.00000001	0.00001327
16	Yes	6	0.00000001	0.00004432
17	Yes	6	0.00000001	0.00001414
18	Yes	6	0.00000001	0.00004324
19	Yes	6	0.00000001	0.00001378
20	Yes	5	0.00000001	0.00001083
21	Yes	4	0.00000001	0.00012648
22	Yes	6	0.00000001	0.00004342
23	Yes	6	0.00000001	0.00001381
24	Yes	6	0.00000001	0.00004478
25	Yes	6	0.00000001	0.00001427
26	Yes	4	0.00000001	0.00000767
27	Yes	6	0.00000001	0.00003792
28	Yes	6	0.00000001	0.00004854
29	Yes	6	0.00000001	0.00004918

30	Yes	6	0.00000001	0.00003760
31	Yes	6	0.00000001	0.00004880
32	Yes	6	0.00000001	0.00004877
33	Yes	6	0.00000001	0.00003810
34	Yes	6	0.00000001	0.00004989
35	Yes	6	0.00000001	0.00004879
36	Yes	6	0.00000001	0.00003781
37	Yes	6	0.00000001	0.00004897
38	Yes	6	0.00000001	0.00004946
39	Yes	4	0.00000001	0.00006900
40	Yes	5	0.00000001	0.00001800
41	Yes	5	0.00000001	0.00001864
42	Yes	4	0.00000001	0.00005430
43	Yes	5	0.00000001	0.00001861
44	Yes	5	0.00000001	0.00001766
45	Yes	4	0.00000001	0.00006902
46	Yes	5	0.00000001	0.00001904
47	Yes	5	0.00000001	0.00001791
48	Yes	4	0.00000001	0.00005438
49	Yes	5	0.00000001	0.00001795
50	Yes	5	0.00000001	0.00001942

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	176 - 131	28.980	39	1.3254	0.0037
L2	136 - 86	18.158	39	1.2343	0.0011
L3	92 - 42	8.227	39	0.8570	0.0003
L4	49 - 1	2.286	39	0.4367	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load Comb.*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft			*in*	°	°	*ft*
176.00	HP3	39	28.980	1.3254	0.0037	91948
155.00	(2) 1900MHz RRH	39	23.193	1.3007	0.0023	21892
154.00	(2) 1900MHz RRH	39	22.921	1.2986	0.0022	20897
153.00	Platform Mount	39	22.650	1.2964	0.0021	19988
143.70	T-Arm Mount	39	20.163	1.2689	0.0016	14232
136.80	Modified T-Arm Mount	39	18.363	1.2385	0.0012	11734
123.80	T-Arm Mount	39	15.111	1.1542	0.0008	8901
98.00	Side Arm Mount	39	9.384	0.9175	0.0004	6026
84.30	Collar Mount	39	6.854	0.7797	0.0003	5450

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	176 - 131	114.808	2	5.2549	0.0146
L2	136 - 86	71.929	2	4.8948	0.0044
L3	92 - 42	32.592	2	3.3970	0.0013
L4	49 - 1	9.055	2	1.7301	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.00	HP3	2	114.808	5.2549	0.0148	23511
155.00	(2) 1900MHz RRH	2	91.877	5.1578	0.0089	5595
154.00	(2) 1900MHz RRH	2	90.802	5.1496	0.0087	5341
153.00	Platform Mount	2	89.728	5.1409	0.0084	5108
143.70	T-Arm Mount	2	79.873	5.0321	0.0063	3635
136.80	Modified T-Arm Mount	2	72.744	4.9114	0.0049	2995
123.80	T-Arm Mount	2	59.861	4.5766	0.0031	2269
98.00	Side Arm Mount	2	37.177	3.6371	0.0015	1531
84.30	Collar Mount	2	27.153	3.0905	0.0012	1382

Section Capacity Table

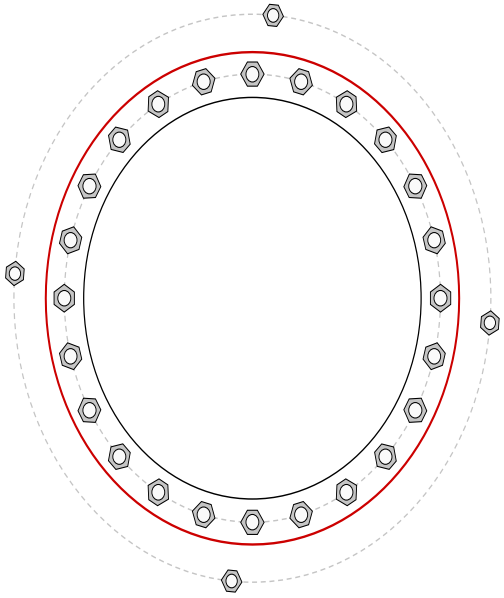
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	176 - 131	Pole	TP34.688x24x0.25	1	-14.20	1798.30	20.9	Pass
L2	131 - 86	Pole	TP44.688x33.0004x0.3125	2	-26.30	2869.34	64.3	Pass
L3	86 - 42	Pole	TP54.5x42.6605x0.375	3	-40.98	4176.03	70.3	Pass
L4	42 - 1	Pole	TP64.5x52.0925x0.375	4	-60.58	4661.85	81.8	Pass
							Summary	
						Pole (L4)	81.8	Pass
						RATING =	**81.8**	**Pass**

Monopole Base Plate Connection

Site Info	
BU #	
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	Yes
l_{ar} (in)	0
Eta Factor, η	0.7

Applied Loads	
Moment (kip-ft)	4955.13
Axial Force (kips)	60.58
Shear Force (kips)	39.30



Connection Properties

Anchor Rod Data

GROUP 1: (24) 2" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 58" BC

GROUP 2: (4) 1-3/4" ø bolts (A1035 Gr 120 N; Fy=120 ksi, Fu=150 ksi) on 73.5" BC

Base Plate Data

52" ID x 1.5" Plate (A572-42; Fy=42 ksi, Fu=60 ksi)

Stiffener Data

N/A

Pole Data

64.5" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:

Pu_t = 139.68	ϕPn_t = 250	**Stress Rating**
Vu = 1.45	ϕVn = n/a	**56.7%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_t = 134.98	ϕPn_t = 228	**Stress Rating**
Vu = 1.1	ϕVn = n/a	**59.9%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**N/A**

Pier and Pad Foundation

TIA-222 Revision:	G
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	60.58	kips
Base Shear, Vu_comp:	39.30	kips
Moment, M_u:	4955.13	ft-kips
Tower Height, **H**:	175	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.25	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	50	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	6	ft
Pad Width, **W**:	27.5	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size (Bottom), **Sp**:	10	
Pad Rebar Quantity (Bottom), **mp**:	32	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	3000	psi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	100	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating**	**Check**
Lateral (Sliding) (kips)	235.82	39.30	**16.7%**	**Pass**
Bearing Pressure (ksf)	6.00	2.52	**42.0%**	**Pass**
*Overturning (kip*ft)*	7271.42	5210.58	**71.7%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	11243.64	5043.56	**44.9%**	**Pass**
Pier Compression (kip)	18370.97	76.17	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	7616.25	2181.79	**28.6%**	**Pass**
Pad Shear - 1-way (kips)	1168.40	279.65	**23.9%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.029	**17.7%**	**Pass**

Soil Rating:	**71.7%**
Structural Rating:	**44.9%**

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

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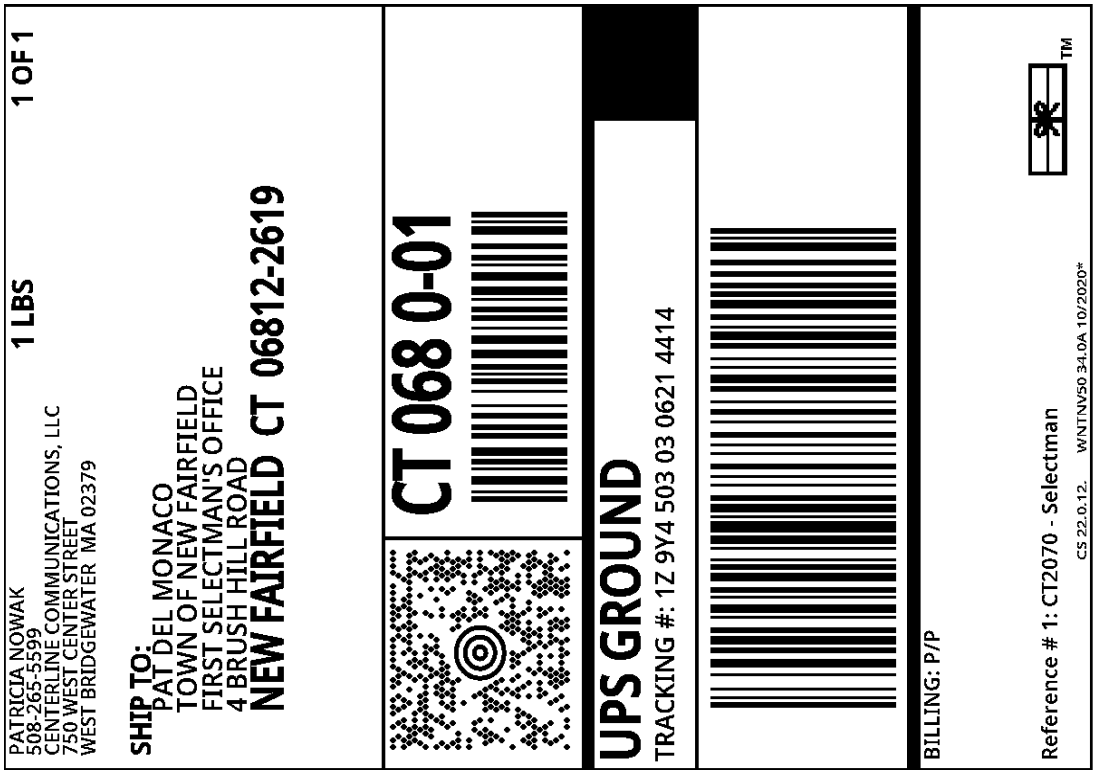

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   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
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