QC Development
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January 27, 2016

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2155
4 Elkington Farm Road, New Milford, CT 06776
N 41-35-28.0
W 73-24-30.9

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 154-foot level of the existing 150-foot Monopole at 4 Elkington Farm Road, New Canaan, CT. The structure is owned by American Tower and the property is owned by Canterbury School Inc.. AT&T now intends to remove three (3) Ericsson AWS remote radio units (RRUS-12) and replace them with three (3) new Ericsson 1900 RRUS-12s. The new radio units would be installed at the 154-foot level of the tower.

This facility was approved by the Connecticut Siting Council in Docket # 138.2 on November 26, 1990. The Decision and Order included a condition limiting the tower height to 162 feet AGL. Since no change to the overall height of the tower or antennas is proposed, this modification therefore complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to David Gronbach, Mayor of the Town of New Milford, as well as the property owner and the tower owner.

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

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

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

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

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

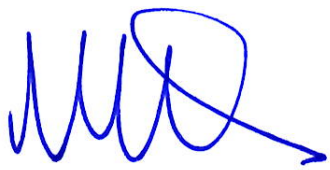
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: The Honorable David Gronbach- as elected official (via e-mail)
Canterbury School Inc - as property owner
American Tower - as structure (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							3.62%
AT&T GSM	1	283	154	0.0046	880	0.5867	0.08%
AT&T UMTS	2	565	154	0.0186	880	0.5867	0.32%
AT&T UMTS	4	525	154	0.0345	1900	1.0000	0.34%
AT&T LTE	1	1313	154	0.0216	734	0.4893	0.44%
AT&T LTE	2	875	154	0.0287	2300	1.0000	0.29%
Site Total							5.09%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							3.62%
AT&T GSM	1	142	154	0.0023	880	0.5867	0.04%
AT&T UMTS	2	296	154	0.0049	880	0.5867	0.08%
AT&T UMTS	1	525	154	0.0086	1900	1.0000	0.09%
AT&T LTE	1	1476	154	0.0485	734	0.4893	0.99%
AT&T LTE	2	3664	154	0.0086	1900	1.0000	1.20%
Site Total							6.03%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Note: Proposed Loading may also include corrections to certain Existing Loading values

SITE NAME: NEW MILFORD
SITE NUMBER: CT2155
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776

VICINITY MAP N.T.S.

DIRECTIONS FROM 500 ENTERPRISE DRIVE, ROCKY HILL, CT:

HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. TURN LEFT ONTO CAPITAL BLVD. USE THE LEFT 2 LANES TO TURN LEFT ONTO STATE HWY 411. TURN LEFT TO MERGE ONTO I-91 S. MERGE ONTO I-91 S. TAKE EXIT 18 FOR I-691 W TOWARD MERIDEN/WATERBURY. CONTINUE ONTO I-691 W. USE THE LEFT 2 LANES TO TAKE EXIT 1 FOR I-84 W TOWARD WATERBURY/DANBURY. MERGE ONTO I-84. TAKE EXIT 15 FOR US-6 E/CT-67 TOWARD SOUTHBURY. TURN RIGHT ONTO CT-67 N/US-6 E. TURN LEFT ONTO CT-67 W. TURN LEFT TO STAY ON CT-67 W. CONTINUE STRAIGHT ONTO CHURCH ST. CONTINUE ONTO WELLERS BRIDGE RD. TURN LEFT ONTO CT-67 W. TURN RIGHT ONTO EAST ST. CONTINUE ONTO POPLAR ST. TURN LEFT ONTO ELKINGTON FARM RD. TURN RIGHT TO STAY ON ELKINGTON FARM RD. SITE WILL BE ON THE LEFT.

SITE INFORMATION

SITE COORDINATES:
LATITUDE: 41°-35'-27.070" N (NAD83)
LONGITUDE: 73°-24'-30.895" W (NAD83)
(PER GOOGLE EARTH)

ELEVATION DATA:
GRADE ELEVATION AT TOWER = 468'± A.M.S.L.
(PER GOOGLE EARTH)

PROJECT DESCRIPTION

- SWAP EXISTING AWS RRUS-12 WITH 1900 RRUS-12 (TYP.-1 PER SECTOR) (3 TOTAL)
- DUL TO DUS UPGRADE

PROJECT INFORMATION

SITE NAME:
NEW MILFORD

SITE NUMBER:
CT2155

SITE ADDRESS:
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

TOWER OWNER:
AMERICAN TOWER CORPORATION
116 HUNTINGTON AVE., 11TH FLOOR
BOSTON, MA 02116

APPLICANT/LESSEE:
AT&T MOBILITY
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

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

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

SHEET INDEX

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

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CT2155
NEW MILFORD

CONSTRUCTION DRAWINGS

0	01/18/17	ISSUED FOR CONSTRUCTION
A	01/03/17	ISSUED FOR REVIEW

Dewberry®
Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710

STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED PROFESSIONAL ENGINEER
CONNECTICUT LICENSE NO. 0023222

DRAWN BY:	BJR
REVIEWED BY:	BSH
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065673
SITE ADDRESS:	

4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – SAI COMMUNICATIONS, INC.
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH LAND LORD. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

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

CONCRETE AND REINFORCING STEEL NOTES:

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

STRUCTURAL STEEL NOTES:

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

ELECTRICAL INSTALLATION NOTES:

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

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SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CT2155
NEW MILFORD

CONSTRUCTION DRAWINGS		
0	01/18/17	ISSUED FOR CONSTRUCTION
A	01/03/17	ISSUED FOR REVIEW

Dewberry®
Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 301
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PHONE: 973.739.9400
FAX: 973.739.9710

STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED PROFESSIONAL ENGINEER

CONNECTICUT LICENSE NO. 0023222

DRAWN BY:	BJR
REVIEWED BY:	BSH
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065673
SITE ADDRESS:	

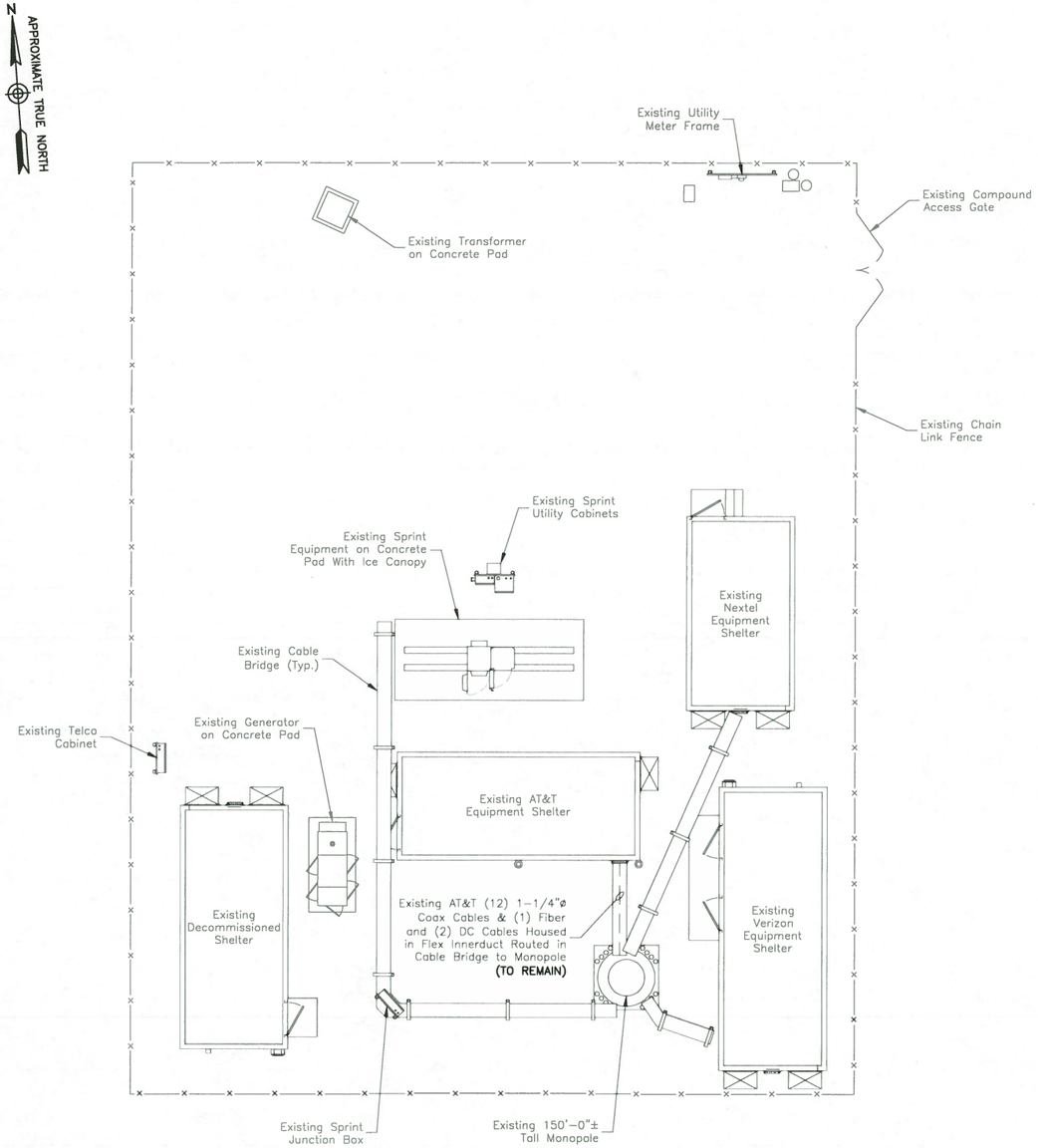
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

G–1



NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. NOT ALL INFORMATION IS SHOWN FOR CLARITY.
3. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, TMA'S, RRU'S, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY AMERICAN TOWER CORPORATION DATED SEPTEMBER 19, 2012.

3
C-3

COMPOUND PLAN 1

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

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JIANG YU
No. 23222
LICENSED PROFESSIONAL ENGINEER

CONNECTICUT LICENSE NO. 0023222

DRAWN BY:	BJR
REVIEWED BY:	BSH
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065673
SITE ADDRESS:	

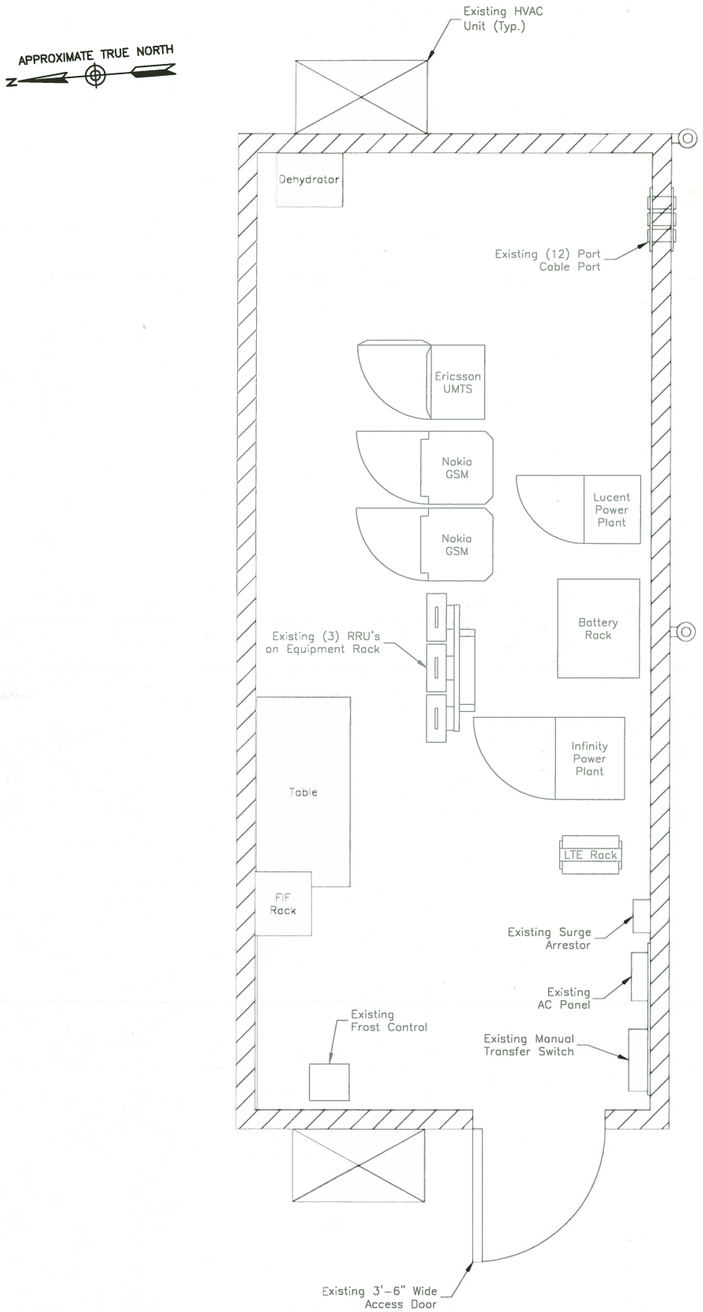
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

COMPOUND PLAN

SHEET NUMBER

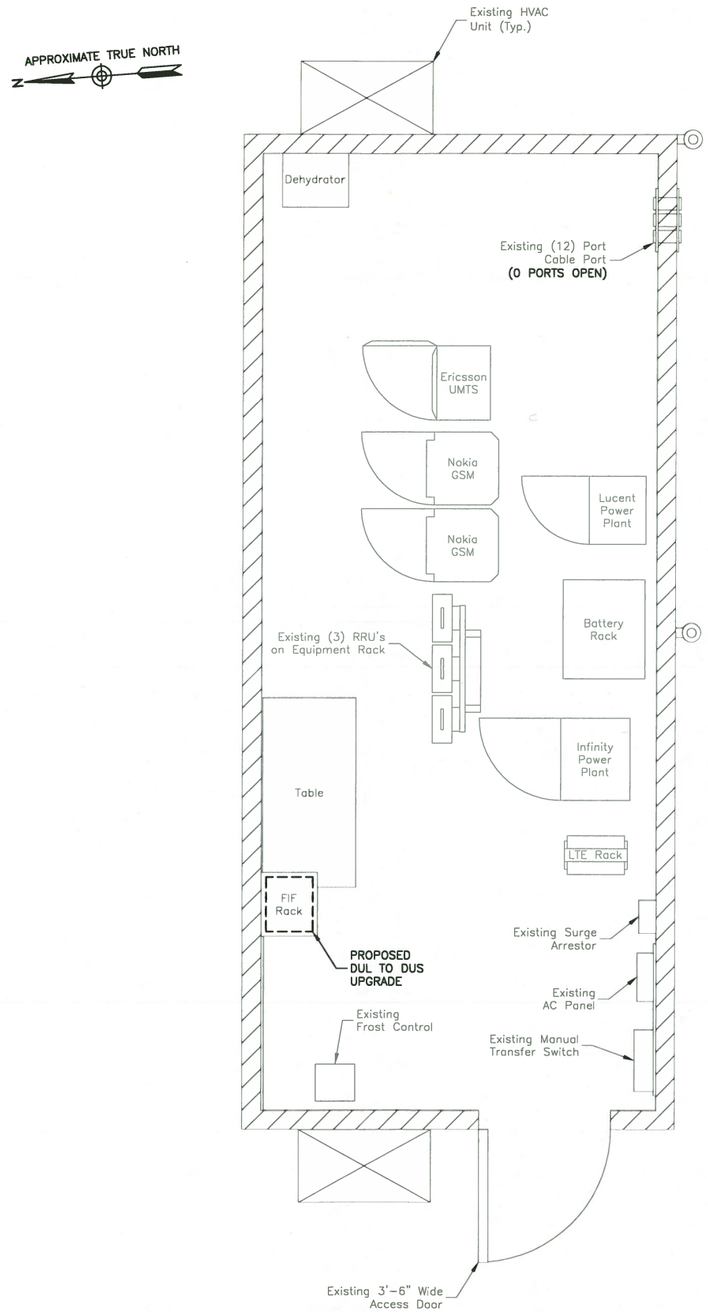
C-1



EXISTING SHELTER LAYOUT (1)

SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"

0' 1' 2' 4'



PROPOSED SHELTER LAYOUT (2)

SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"

0' 1' 2' 4'

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STATE OF CONNECTICUT
JIANG YU
No. 28222
LICENSED
PROFESSIONAL ENGINEER

CONNECTICUT LICENSE NO. 0023222

DRAWN BY:	BJR
REVIEWED BY:	BSH
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065673

SITE ADDRESS:

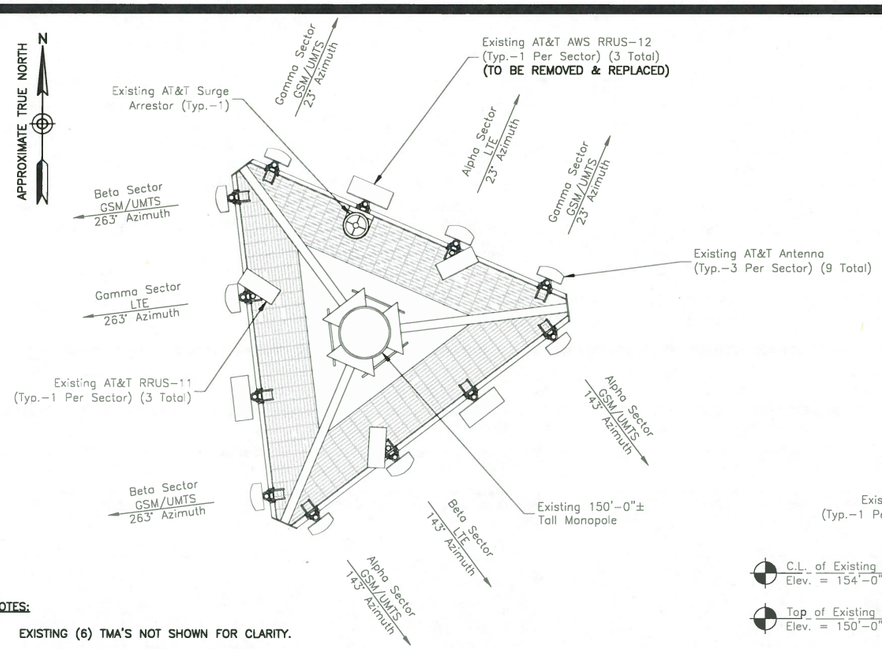
4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

EXISTING & PROPOSED SHELTER LAYOUTS

SHEET NUMBER

C-2

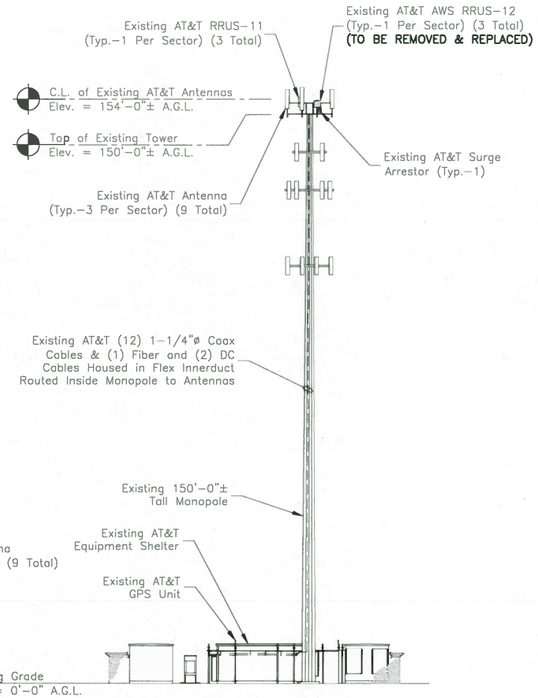


NOTES:

1. EXISTING (6) TMA'S NOT SHOWN FOR CLARITY.
2. ALL EXISTING TMA'S ARE TO REMAIN.

EXISTING ANTENNA LAYOUT (1)

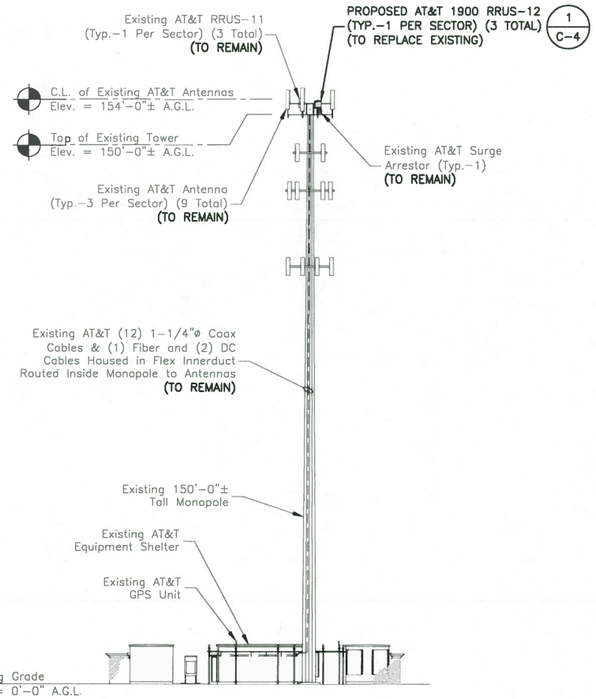
SCALE: N.T.S.



EXISTING SOUTH ELEVATION (3)

SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

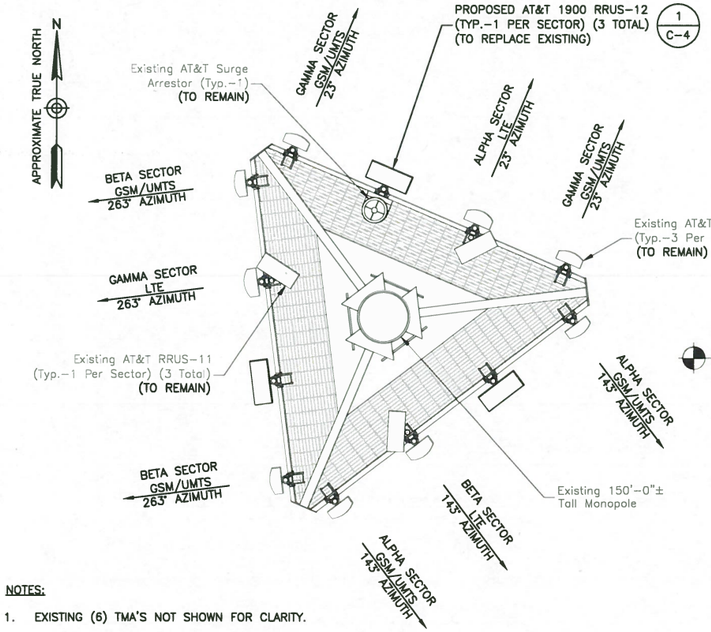
0' 20' 40'



PROPOSED SOUTH ELEVATION (4)

SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

0' 20' 40'



NOTES:

1. EXISTING (6) TMA'S NOT SHOWN FOR CLARITY.
2. ALL EXISTING TMA'S ARE TO REMAIN.

PROPOSED ANTENNA LAYOUT (2)

SCALE: N.T.S.

NOTE:

1. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, TMA'S, RRU'S, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY AMERICAN TOWER CORPORATION DATED SEPTEMBER 19, 2012.

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STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED
PROFESSIONAL ENGINEER
CONNECTICUT LICENSE NO. 0023222

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CHECKED BY:	GHN
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JOB NUMBER:	50065673
SITE ADDRESS:	

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LITCHFIELD COUNTY

SHEET TITLE

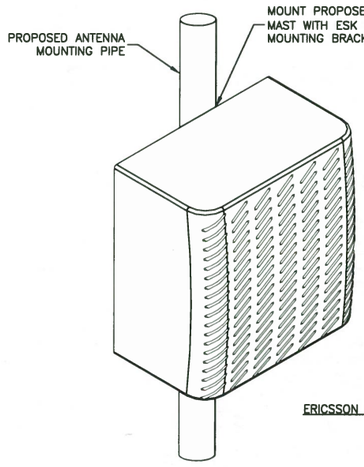
ANTENNA LAYOUTS & ELEVATIONS

SHEET NUMBER

C–3

EXISTING/PROPOSED RRUS SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	18.2x18.5x7.3
BETA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	18.2x18.5x7.3
GAMMA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	18.2x18.5x7.3



ERICSSON RRUS-12

SPECIFICATIONS:
HEIGHT: 18.2"
WIDTH: 18.5"
DEPTH: 7.3"
WEIGHT: 55.0 LBS

RRU NOTES:

1. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND AT&T STANDARDS.
3. CONFIRM REQUIRED EQUIPMENT WITH THE LATEST RFDS.

RRUS-12 - REMOTE RADIO UNIT (1)
SCALE: N.T.S.

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4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

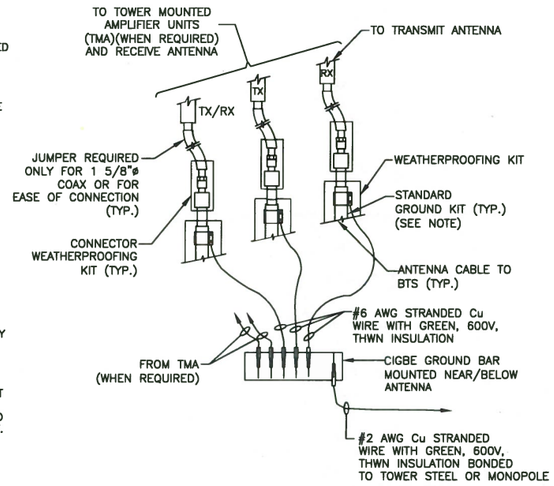
CONSTRUCTION DETAILS

SHEET NUMBER

C-4

GROUNDING NOTES:

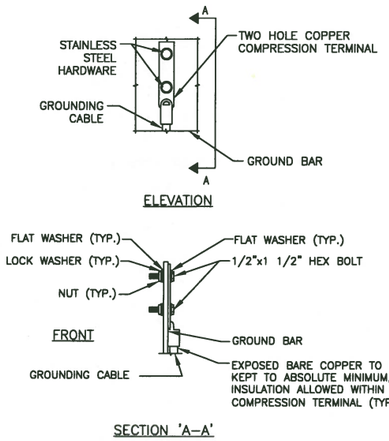
1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA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



NOTE:

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

CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE) — 1

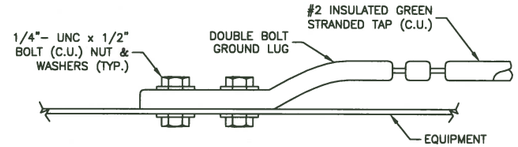


NOTES:

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

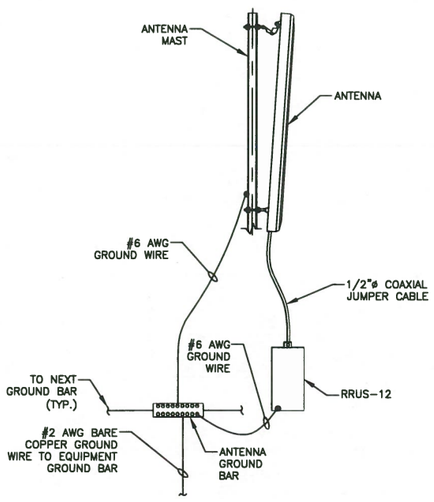
TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL — 2

SCALE: N.T.S.



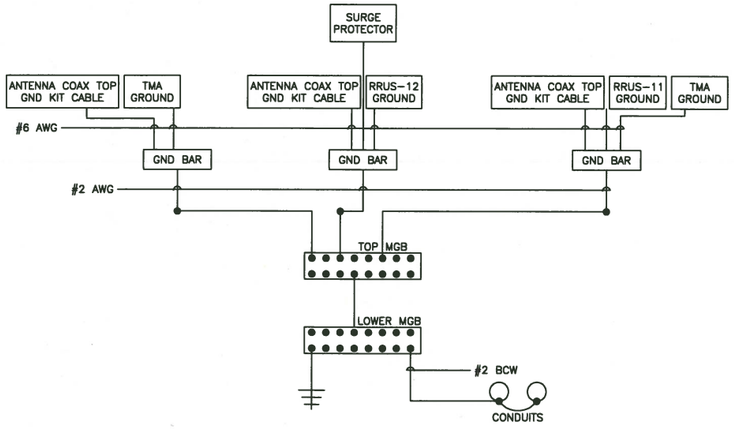
CONNECTION TO EQUIPMENT DETAIL — 3

SCALE: N.T.S.



TYPICAL ANTENNA GROUNDING DETAIL — 4

SCALE: N.T.S



NOTES:

1. BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE
2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE.
3. SCHEMATIC GROUNDING DIAGRAM IS TYPICAL FOR EACH SECTOR.
4. GROUND ALL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.

SCHEMATIC GROUNDING DIAGRAM — 5

SCALE: N.T.S.

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FAX: 973.739.9710

STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED PROFESSIONAL ENGINEER

CONNECTICUT LICENSE NO. 0023222

DRAWN BY:	BJR
REVIEWED BY:	BSH
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SITE ADDRESS:	

4 ELKINGTON FARM ROAD
NEW MILFORD, CT 06776
LITCHFIELD COUNTY

SHEET TITLE

GROUNDING NOTES & DETAILS

SHEET NUMBER

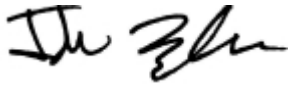
E-1

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**New Milford CT 2, CT**
ATC Site Number	:	**302523**
Engineering Number	:	**OAA692635_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**New Milford**
Carrier Site Number	:	**CT2155**
Site Location	:	**4 Elkington Farm Rd** **New Milford, CT 06776-2909** **41.590861,-73.408600**
County	:	**Litchfield**
Date	:	**January 25, 2017**
Max Usage	:	**97%**
Result	:	**Pass**

Prepared By:
John D. Bigham, E.I.
Structural Engineer II



Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	ITT Meyer per AT&T Design Spec. AT-8935, dated April 13, 1984
Foundation Drawing	SNET Job #3C239, dated April 20, 1990
Geotechnical Report	JSEC Job #14974-NM, dated January 28, 2002
Modifications	Scientel CMS Modification Drawings, dated March 7, 2002 ATC Project #41658239, dated December 22, 2008 ATC Project #50496632, dated October 22, 2012

Analysis

The tower was analyzed using tnxTower 7.0.7.0 analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust V_{ASD}) / 120 mph (3-Second Gust V_{ULT})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.07
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	1	Andrew ABT-DFDM-ADB	Low Profile Platform	(12) 1 1/4" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Cable (1) 3" conduit	AT&T Mobility
		6	Powerwave TT19-08BP111-001			
		3	Ericsson RRUS 11 (Band 12)			
		6	Powerwave 7770.00A			
		3	KMW AM-X-CD-16-65-00T-RET			
143.0	143.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Platform w/ Handrails	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4X45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS RFS APXV9TM14-ALU-I20			
		3	RFS APXVSPP18-C-A20			
132.0	132.0	6	RFS FD9R6004/2C-3L	Low Profile Platform	(12) 1 5/8" Coax (1) 1.58" Hybrid	Verizon
		2	Antel BXA-171085-8BF-EDIN-X			
		1	Antel BXA-171063-8BF-EDIN-X			
		3	Alcatel-Lucent B66A RRH 4x45			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Commscope SBNHH-1D65B			
		4	Antel LPA-80080/6CF ___			
		2	Antel LPA-80063/6CF			
107.0	107.0	8	48" x 8" Panel	T-Arm	(12) 1 1/4" Coax	Sprint Nextel
		4	48" x 18" Panel-Grid			
75.0	75.0	1	PCTEL GPS-TMG-HR-26N	Flush	(1) 1/2" Coax	

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	5	Andrew ABT-DFDM-ADB	-	(2) 0.78" 8 AWG 6	AT&T Mobility
		3	Ericsson RRUS 11 (Band 12)			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	154.0	3	Ericsson RRUS-12 B2	Low Profile Platform	-	AT&T Mobility

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	94%	Pass
Shaft	96%	Pass
Base Plate	47%	Pass
Flanges	97%	Pass
Reinforcement	94%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,603.6	81%
Axial (Kips)	41.2	19%
Shear (Kips)	26.7	15%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
150.0	Ericsson RRUS-12 B2	AT&T Mobility	2.149	1.972

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

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Standard Conditions

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

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

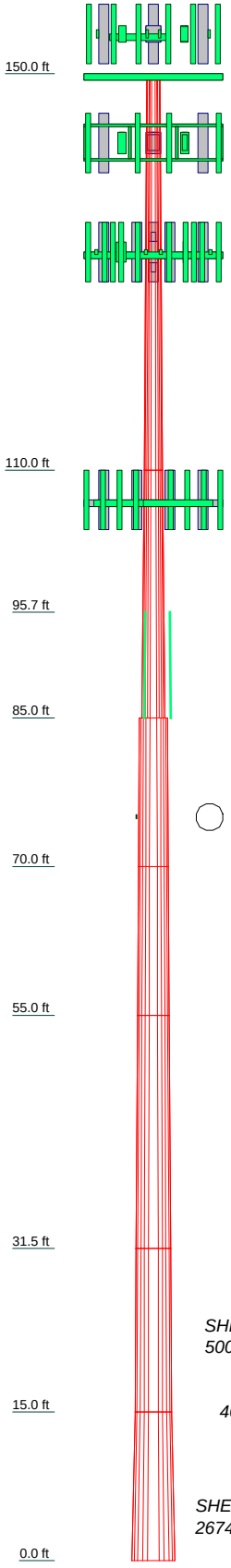
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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

Section	1	2	3	4	5	6	7
Length (ft)	40.00	25.00	15.00	15.00	23.50	16.50	15.00
Number of Sides	12	12	12	12	12	12	12
Thickness (in)	0.1875	0.2500	0.3722	0.3918	0.4720	0.4977	0.5362
Top Dia (in)	15.0000	21.2500	33.3250	35.6910	38.0580	41.5760	44.0460
Bot Dia (in)	21.2500	27.6100	35.6910	38.0580	41.5760	44.0460	52.0640
Grade	A572-65						
Tube Length (ft)		10.69					
Reinf Size		2 1/2					
Reinf Grade		A615-75					
Weight (lb)	1474.1	1655.9	2088.2	2349.5	4782.2	3807.3	4187.9

20345.1



ALL REACTIONS ARE FACTORED

AXIAL 78283 lb

SHEAR 5001 lb *MOMENT 552416 lb-ft*

TORQUE 370 lb-ft
40 mph WIND - 1.0000 in ICE

AXIAL 41221 lb

SHEAR 26744 lb *MOMENT 2603568 lb-ft*

TORQUE 2193 lb-ft
REACTIONS - 90 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Andrew ABT-DFDM-ADB	150	APXVSPP18-C-A20	143
(2) TT19-08BP111-001	150	APXVSPP18-C-A20	143
(2) TT19-08BP111-001	150	APXVSPP18-C-A20	143
(2) TT19-08BP111-001	150	Round Platform w/ Handrails	143
RRUS 11 (Band 12) (55 lb)	150	(2) FD9R6004/2C-3L	132
RRUS 11 (Band 12) (55 lb)	150	(2) FD9R6004/2C-3L	132
RRUS 11 (Band 12) (55 lb)	150	(2) FD9R6004/2C-3L	132
RRUS-12 B2	150	BXA-171085-8BF-EDIN-X	132
RRUS-12 B2	150	BXA-171085-8BF-EDIN-X	132
RRUS-12 B2	150	BXA-171063-8BF-EDIN-X	132
(2) 7770.00	150	B66A RRH 4x45	132
(2) 7770.00	150	B66A RRH 4x45	132
(2) 7770.00	150	B66A RRH 4x45	132
AM-X-CD-16-65-00T-RET	150	DB-T1-6Z-8AB-0Z	132
AM-X-CD-16-65-00T-RET	150	SBNHH-1D65B	132
AM-X-CD-16-65-00T-RET	150	SBNHH-1D65B	132
Round Low Profile Platform	150	SBNHH-1D65B	132
800 MHz 2X50W RRH w/ Filter	143	(2) LPA-80080/6CF ___	132
800 MHz 2X50W RRH w/ Filter	143	(2) LPA-80080/6CF ___	132
800 MHz 2X50W RRH w/ Filter	143	(2) LPA-80063/6CF	132
1900 MHz 4X45 RRH	143	Round Low Profile Platform	132
1900 MHz 4X45 RRH	143	(4) 48" x 8" Panel	107
1900 MHz 4X45 RRH	143	(4) 48" x 8" Panel	107
TD-RRH8x20-25 w/ Solar Shield	143	(4) 48" x 18" Panel-Grid	107
TD-RRH8x20-25 w/ Solar Shield	143	Round T-Arm	107
TD-RRH8x20-25 w/ Solar Shield	143	Round T-Arm	107
APXV9TM14-ALU-I20	143	Round T-Arm	107
APXV9TM14-ALU-I20	143	GPS-TMG-HR-26N	75
APXV9TM14-ALU-I20	143		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	A615-75	75 ksi	100 ksi

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 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 wrap from 0' to 85'. This model considers an equivalent Moment of Inertia for tower Sections 3 through 7.
9. TOWER RATING: 96.1%

AMERICAN TOWER CORPORATION
Tower Analysis

American Tower Corporation
3500 Regency Parkway, Suite 100
Cary, NC 27511
Phone: (919) 466-5033
FAX: (919) 466-5415

Job:	***302523 - New Milford CT 2, CT***		
Project:	***OAA692635***		
Client: AT&T Mobility	Drawn by: John Bigham	App'd:	
Code: TIA-222-G	Date: 01/25/17	Scale: NTS	
Path: C:\Users\john.bigham\Desktop\TNX Files\302523 - New Milford CT 2, CT.eri		Dwg No. E-1	

Tower Input Data

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

Tower is located in Litchfield County, Connecticut.
Basic wind speed of 90 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 40 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tower wrap from 0' to 85'. This model considers an equivalent Moment of Inertia for tower Sections 3 through 7..
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				

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*	
L1	150.00-110.00	40.00	0.00	12	15.0000	21.2500	0.1875	0.7500	A572-65 (65 ksi)
L2	110.00-85.00	25.00	0.00	12	21.2500	27.6100	0.2500	1.0000	A572-65

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
L3	85.00-70.00	15.00	0.00	12	33.3250	35.6910	0.3722	1.4888	(65 ksi) A572-65 (65 ksi)
L4	70.00-55.00	15.00	0.00	12	35.6910	38.0580	0.3918	1.5673	(65 ksi) A572-65 (65 ksi)
L5	55.00-31.50	23.50	0.00	12	38.0580	41.5760	0.4720	1.8882	(65 ksi) A572-65 (65 ksi)
L6	31.50-15.00	16.50	0.00	12	41.5760	44.0460	0.4977	1.9908	(65 ksi) A572-65 (65 ksi)
L7	15.00-0.00	15.00		12	44.0460	52.0640	0.5362	2.1449	(65 ksi) 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	15.5291	8.9430	250.4541	5.3029	7.7700	32.2335	507.4880	4.4015	3.5175	18.76
	21.9996	12.7165	720.0669	7.5404	11.0075	65.4160	1459.0508	6.2587	5.1925	27.693
L2	21.9996	16.9050	951.5678	7.5180	11.0075	86.4472	1928.1342	8.3201	5.0250	20.1
	28.5840	22.0248	2104.4088	9.7949	14.3020	147.1411	4264.1028	10.8399	6.7295	26.918
L3	34.5006	39.4945	5474.0206	11.7971	17.2624	317.1075	11091.8499	19.4380	7.9336	21.315
	36.9500	42.3301	6739.8046	12.6441	18.4879	364.5515	13656.6715	20.8336	8.5677	23.018
L4	36.9500	44.5367	7083.2568	12.6371	18.4879	383.1285	14352.5987	21.9196	8.5151	21.732
	39.4005	47.5231	8605.8524	13.4845	19.7140	436.5341	17437.7901	23.3894	9.1494	23.351
L5	39.4005	57.1295	10301.4312	13.4558	19.7140	522.5428	20873.4924	28.1174	8.9345	18.927
	43.0426	62.4767	13473.2267	14.7152	21.5364	625.6035	27300.4100	30.7491	9.8773	20.925
L6	43.0426	65.8318	14179.0407	14.7060	21.5364	658.3766	28730.5806	32.4004	9.8085	19.708
	45.5998	69.7902	16893.6340	15.5903	22.8158	740.4348	34231.0826	34.3486	10.4705	21.038
L7	45.5998	75.1266	18153.2042	15.5765	22.8158	795.6408	36783.3132	36.9750	10.3672	19.334
	53.9006	88.9710	30152.0589	18.4469	26.9692	1118.0203	61096.2459	43.7888	12.5161	23.341

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 150.00-110.00				1	1	1			
L2 110.00-85.00				1	1	1			
L3 85.00-70.00				1	1	1			
L4 70.00-55.00				1	1	1			
L5 55.00-31.50				1	1	1			
L6 31.50-15.00				1	1	1			
L7 15.00-0.00				1	1	1			

Pole Reinforcing Data

Height Above Base ft	Segment Length ft	No. of Segments	Offset in	Grade	Type	Size	Unbraced Length ft	K	Bolt Hole Dia. in	Bolts per Row	Shear Lag Factor U

Height Above Base ft	Segment Length ft	No. of Segments	Offset in	Grade	Type	Size	Unbraced Length ft	K	Bolt Hole Dia. in	Bolts per Row	Shear Lag Factor U
85.00	10.69	3	7.5625	A615-75 (75 ksi)	Solid Round	2 1/2	2.50	0.80	0.7500	12	1.000

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***									
1 5/8" Coax	B	Surface Ar (CaAa)	132.00 - 5.00	12	6	-0.500 0.500	1.9800		0.82
1.58" (40.1mm) Hybrid	B	Surface Ar (CaAa)	132.00 - 5.00	1	1	0.500 0.500	1.5800		1.61
***									
1 1/4" Coax	C	Surface Ar (CaAa)	107.00 - 5.00	12	6	-0.500 0.500	1.5500		0.63
***									

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 1/4" Coax	A	No	Inside Pole	150.00 - 5.00	12	No Ice	0.00	0.63
						1/2" Ice	0.00	0.63
						1" Ice	0.00	0.63
0.78" (19.7 mm) 8 AWG 6	A	No	Inside Pole	150.00 - 5.00	2	No Ice	0.00	0.59
						1/2" Ice	0.00	0.59
						1" Ice	0.00	0.59
0.39" (10 mm) Cable	A	No	Inside Pole	150.00 - 5.00	1	No Ice	0.00	0.07
						1/2" Ice	0.00	0.07
						1" Ice	0.00	0.07
3" Conduit	A	No	Inside Pole	150.00 - 5.00	1	No Ice	0.00	7.58
						1/2" Ice	0.00	7.58
						1" Ice	0.00	7.58
***								
1 1/4" Hybriflex Cable	A	No	Inside Pole	143.00 - 5.00	4	No Ice	0.00	1.00
						1/2" Ice	0.00	1.00
						1" Ice	0.00	1.00
***								
1/2" Coax	C	No	Inside Pole	75.00 - 5.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
***								

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 lb

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 lb
L1	150.00-110.00	A	0.000	0.000	0.000	0.000	787.60
		B	0.000	0.000	29.612	0.000	251.90
		C	0.000	0.000	0.000	0.000	0.00
L2	110.00-85.00	A	0.000	0.000	0.000	0.000	509.75
		B	0.000	0.000	33.650	0.000	286.25
		C	0.000	0.000	20.460	0.000	166.32
L3	85.00-70.00	A	0.000	0.000	0.000	0.000	305.85
		B	0.000	0.000	20.190	0.000	171.75
		C	0.000	0.000	13.950	0.000	114.15
L4	70.00-55.00	A	0.000	0.000	0.000	0.000	305.85
		B	0.000	0.000	20.190	0.000	171.75
		C	0.000	0.000	13.950	0.000	115.65
L5	55.00-31.50	A	0.000	0.000	0.000	0.000	479.17
		B	0.000	0.000	31.631	0.000	269.07
		C	0.000	0.000	21.855	0.000	181.19
L6	31.50-15.00	A	0.000	0.000	0.000	0.000	336.44
		B	0.000	0.000	22.209	0.000	188.93
		C	0.000	0.000	15.345	0.000	127.22
L7	15.00-0.00	A	0.000	0.000	0.000	0.000	203.90
		B	0.000	0.000	13.460	0.000	114.50
		C	0.000	0.000	9.300	0.000	77.10

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 lb
L1	150.00-110.00	A	2.292	0.000	0.000	0.000	0.000	787.60
		B		0.000	0.000	58.839	0.000	1298.84
		C		0.000	0.000	0.000	0.000	0.00
L2	110.00-85.00	A	2.228	0.000	0.000	0.000	0.000	509.75
		B		0.000	0.000	66.135	0.000	1436.14
		C		0.000	0.000	37.827	0.000	795.51
L3	85.00-70.00	A	2.178	0.000	0.000	0.000	0.000	305.85
		B		0.000	0.000	39.347	0.000	843.57
		C		0.000	0.000	25.605	0.000	532.35
L4	70.00-55.00	A	2.132	0.000	0.000	0.000	0.000	305.85
		B		0.000	0.000	39.033	0.000	826.79
		C		0.000	0.000	25.431	0.000	523.83
L5	55.00-31.50	A	2.054	0.000	0.000	0.000	0.000	479.17
		B		0.000	0.000	60.332	0.000	1251.86
		C		0.000	0.000	39.386	0.000	794.70
L6	31.50-15.00	A	1.931	0.000	0.000	0.000	0.000	336.44
		B		0.000	0.000	41.444	0.000	831.43
		C		0.000	0.000	27.145	0.000	529.46
L7	15.00-0.00	A	1.720	0.000	0.000	0.000	0.000	203.90
		B		0.000	0.000	24.169	0.000	456.45
		C		0.000	0.000	15.924	0.000	292.25

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	150.00-110.00	0.8074	-0.3666	0.9445	-0.3140
L2	110.00-85.00	0.9588	0.2351	0.9842	0.3255
L3	85.00-70.00	1.0593	0.3564	1.1706	0.4874
L4	70.00-55.00	1.0828	0.3655	1.2153	0.5059
L5	55.00-31.50	1.1098	0.3760	1.2667	0.5264
L6	31.50-15.00	1.1348	0.3858	1.3130	0.5428
L7	15.00-0.00	0.8645	0.2949	1.0979	0.4487

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	8	1 5/8" Coax	110.00 - 132.00	1.0000	1.0000
L1	9	1.58" (40.1mm) Hybrid	110.00 - 132.00	1.0000	1.0000
L2	8	1 5/8" Coax	85.00 - 110.00	1.0000	1.0000
L2	9	1.58" (40.1mm) Hybrid	85.00 - 110.00	1.0000	1.0000
L2	11	1 1/4" Coax	85.00 - 107.00	1.0000	1.0000
L3	8	1 5/8" Coax	70.00 - 85.00	1.0000	1.0000
L3	9	1.58" (40.1mm) Hybrid	70.00 - 85.00	1.0000	1.0000
L3	11	1 1/4" Coax	70.00 - 85.00	1.0000	1.0000
L4	8	1 5/8" Coax	55.00 - 70.00	1.0000	1.0000
L4	9	1.58" (40.1mm) Hybrid	55.00 - 70.00	1.0000	1.0000
L4	11	1 1/4" Coax	55.00 - 70.00	1.0000	1.0000
L5	8	1 5/8" Coax	31.50 - 55.00	1.0000	1.0000
L5	9	1.58" (40.1mm) Hybrid	31.50 - 55.00	1.0000	1.0000
L5	11	1 1/4" Coax	31.50 - 55.00	1.0000	1.0000
L6	8	1 5/8" Coax	15.00 - 31.50	1.0000	1.0000
L6	9	1.58" (40.1mm) Hybrid	15.00 - 31.50	1.0000	1.0000
L6	11	1 1/4" Coax	15.00 - 31.50	1.0000	1.0000
L7	8	1 5/8" Coax	5.00 - 15.00	1.0000	1.0000
L7	9	1.58" (40.1mm) Hybrid	5.00 - 15.00	1.0000	1.0000
L7	11	1 1/4" Coax	5.00 - 15.00	1.0000	1.0000

Discrete Tower Loads

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 lb
Andrew ABT-DFDM-ADB	C	From Leg	1.00	0.0000	150.00	No Ice	0.05	0.05	1.10
			0.00			1/2" Ice	0.11	0.11	1.80
			4.00			1" Ice	0.17	0.17	2.50
(2) TT19-08BP111-001	A	From Leg	3.00	0.0000	150.00	No Ice	0.55	0.45	16.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	0.65	0.53	21.80
			4.00			1" Ice	0.75	0.63	29.22
(2) TT19-08BP111-001	B	From Leg	3.00	0.0000	150.00	No Ice	0.55	0.45	16.00
			0.00			1/2" Ice	0.65	0.53	21.80
			4.00			1" Ice	0.75	0.63	29.22
(2) TT19-08BP111-001	C	From Leg	3.00	0.0000	150.00	No Ice	0.55	0.45	16.00
			0.00			1/2" Ice	0.65	0.53	21.80
			4.00			1" Ice	0.75	0.63	29.22
RRUS 11 (Band 12) (55 lb)	A	From Leg	3.00	0.0000	150.00	No Ice	2.52	1.07	55.00
			0.00			1/2" Ice	2.72	1.21	74.32
			4.00			1" Ice	2.92	1.36	96.56
RRUS 11 (Band 12) (55 lb)	B	From Leg	3.00	0.0000	150.00	No Ice	2.52	1.07	55.00
			0.00			1/2" Ice	2.72	1.21	74.32
			4.00			1" Ice	2.92	1.36	96.56
RRUS 11 (Band 12) (55 lb)	C	From Leg	3.00	0.0000	150.00	No Ice	2.52	1.07	55.00
			0.00			1/2" Ice	2.72	1.21	74.32
			4.00			1" Ice	2.92	1.36	96.56
RRUS-12 B2	A	From Leg	3.00	0.0000	150.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			4.00			1" Ice	3.59	1.60	107.64
RRUS-12 B2	B	From Leg	3.00	0.0000	150.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			4.00			1" Ice	3.59	1.60	107.64
RRUS-12 B2	C	From Leg	3.00	0.0000	150.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			4.00			1" Ice	3.59	1.60	107.64
(2) 7770.00	A	From Leg	4.00	0.0000	150.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			4.00			1" Ice	6.23	3.63	105.06
(2) 7770.00	B	From Leg	4.00	0.0000	150.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			4.00			1" Ice	6.23	3.63	105.06
(2) 7770.00	C	From Leg	4.00	0.0000	150.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			4.00			1" Ice	6.23	3.63	105.06
AM-X-CD-16-65-00T-RET	A	From Leg	4.00	0.0000	150.00	No Ice	8.02	4.64	48.50
			0.00			1/2" Ice	8.48	5.09	95.00
			4.00			1" Ice	8.94	5.54	147.50
AM-X-CD-16-65-00T-RET	B	From Leg	4.00	0.0000	150.00	No Ice	8.02	4.64	48.50
			0.00			1/2" Ice	8.48	5.09	95.00
			4.00			1" Ice	8.94	5.54	147.50
AM-X-CD-16-65-00T-RET	C	From Leg	4.00	0.0000	150.00	No Ice	8.02	4.64	48.50
			0.00			1/2" Ice	8.48	5.09	95.00
			4.00			1" Ice	8.94	5.54	147.50
Round Low Profile Platform	C	None		0.0000	150.00	No Ice	21.70	21.70	1500.00
						1/2" Ice	27.20	27.20	1700.00
						1" Ice	32.70	32.70	1900.00
***									
800 MHz 2X50W RRH w/ Filter	A	From Leg	3.00	0.0000	143.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30
800 MHz 2X50W RRH w/ Filter	B	From Leg	3.00	0.0000	143.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30
800 MHz 2X50W RRH w/ Filter	C	From Leg	3.00	0.0000	143.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
1900 MHz 4X45 RRH	A	From Leg	3.00	0.0000	143.00	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.13
			0.00			1" Ice	2.74	2.65	109.50
1900 MHz 4X45 RRH	B	From Leg	3.00	0.0000	143.00	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.13
			0.00			1" Ice	2.74	2.65	109.50
1900 MHz 4X45 RRH	C	From Leg	3.00	0.0000	143.00	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.13
			0.00			1" Ice	2.74	2.65	109.50
TD-RRH8x20-25 w/ Solar Shield	A	From Leg	3.00	0.0000	143.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
TD-RRH8x20-25 w/ Solar Shield	B	From Leg	3.00	0.0000	143.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
TD-RRH8x20-25 w/ Solar Shield	C	From Leg	3.00	0.0000	143.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
APXV9TM14-ALU-I20	A	From Leg	4.00	0.0000	143.00	No Ice	6.34	3.61	55.10
			0.00			1/2" Ice	6.72	3.97	94.63
			0.00			1" Ice	7.10	4.33	139.22
APXV9TM14-ALU-I20	B	From Leg	4.00	0.0000	143.00	No Ice	6.34	3.61	55.10
			0.00			1/2" Ice	6.72	3.97	94.63
			0.00			1" Ice	7.10	4.33	139.22
APXV9TM14-ALU-I20	C	From Leg	4.00	0.0000	143.00	No Ice	6.34	3.61	55.10
			0.00			1/2" Ice	6.72	3.97	94.63
			0.00			1" Ice	7.10	4.33	139.22
APXVSPP18-C-A20	A	From Leg	4.00	0.0000	143.00	No Ice	8.02	5.28	57.00
			0.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXVSPP18-C-A20	B	From Leg	4.00	0.0000	143.00	No Ice	8.02	5.28	57.00
			0.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXVSPP18-C-A20	C	From Leg	4.00	0.0000	143.00	No Ice	8.02	5.28	57.00
			0.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
Round Platform w/ Handrails	C	None		0.0000	143.00	No Ice	27.20	27.20	2000.00
						1/2" Ice	34.20	34.20	2400.00
						1" Ice	41.20	41.20	2800.00
***									
(2) FD9R6004/2C-3L	A	From Leg	3.00	0.0000	132.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			0.00			1" Ice	0.47	0.17	8.79
(2) FD9R6004/2C-3L	B	From Leg	3.00	0.0000	132.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			0.00			1" Ice	0.47	0.17	8.79
(2) FD9R6004/2C-3L	C	From Leg	3.00	0.0000	132.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			0.00			1" Ice	0.47	0.17	8.79
BXA-171085-8BF-EDIN-X	A	From Leg	4.00	0.0000	132.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28
			0.00			1" Ice	3.57	2.77	52.05
BXA-171085-8BF-EDIN-X	B	From Leg	4.00	0.0000	132.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28
			0.00			1" Ice	3.57	2.77	52.05
BXA-171063-8BF-EDIN-X	C	From Leg	4.00	0.0000	132.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	3.57	2.77	52.05
B66A RRH 4x45	A	From Leg	3.00	0.0000	132.00	No Ice	2.58	1.63	67.00
			0.00			1/2" Ice	2.79	1.81	87.47
			0.00			1" Ice	3.01	2.00	111.06
B66A RRH 4x45	B	From Leg	3.00	0.0000	132.00	No Ice	2.58	1.63	67.00
			0.00			1/2" Ice	2.79	1.81	87.47
			0.00			1" Ice	3.01	2.00	111.06
B66A RRH 4x45	C	From Leg	3.00	0.0000	132.00	No Ice	2.58	1.63	67.00
			0.00			1/2" Ice	2.79	1.81	87.47
			0.00			1" Ice	3.01	2.00	111.06
DB-T1-6Z-8AB-0Z	C	From Leg	3.00	0.0000	132.00	No Ice	4.80	2.00	44.00
			0.00			1/2" Ice	5.07	2.19	80.13
			0.00			1" Ice	5.35	2.39	120.22
SBNHH-1D65B	A	From Leg	4.00	0.0000	132.00	No Ice	8.17	5.41	50.70
			0.00			1/2" Ice	8.63	5.86	101.21
			0.00			1" Ice	9.10	6.33	157.85
SBNHH-1D65B	B	From Leg	4.00	0.0000	132.00	No Ice	8.17	5.41	50.70
			0.00			1/2" Ice	8.63	5.86	101.21
			0.00			1" Ice	9.10	6.33	157.85
SBNHH-1D65B	C	From Leg	4.00	0.0000	132.00	No Ice	8.17	5.41	50.70
			0.00			1/2" Ice	8.63	5.86	101.21
			0.00			1" Ice	9.10	6.33	157.85
(2) LPA-80080/6CF ___	A	From Leg	4.00	0.0000	132.00	No Ice	8.63	5.42	21.00
			0.00			1/2" Ice	9.93	5.75	57.00
			0.00			1" Ice	11.23	6.09	93.00
(2) LPA-80080/6CF ___	B	From Leg	4.00	0.0000	132.00	No Ice	8.63	5.42	21.00
			0.00			1/2" Ice	9.93	5.75	57.00
			0.00			1" Ice	11.23	6.09	93.00
(2) LPA-80063/6CF	C	From Leg	4.00	0.0000	132.00	No Ice	9.59	5.42	27.00
			0.00			1/2" Ice	11.18	5.75	60.00
			0.00			1" Ice	12.77	6.09	93.00
Round Low Profile Platform	C	None		0.0000	132.00	No Ice	21.70	21.70	1500.00
						1/2" Ice	27.20	27.20	1700.00
						1" Ice	32.70	32.70	1900.00
***									
(4) 48" x 8" Panel	A	From Leg	4.00	0.0000	107.00	No Ice	3.61	2.87	20.00
			0.00			1/2" Ice	4.29	3.18	45.30
			0.00			1" Ice	4.97	3.49	70.60
(4) 48" x 8" Panel	B	From Leg	4.00	0.0000	107.00	No Ice	3.61	2.87	20.00
			0.00			1/2" Ice	4.29	3.18	45.30
			0.00			1" Ice	4.97	3.49	70.60
(4) 48" x 18" Panel-Grid	C	From Leg	4.00	0.0000	107.00	No Ice	6.25	2.87	25.00
			0.00			1/2" Ice	9.05	3.18	74.70
			0.00			1" Ice	11.85	3.49	124.40
Round T-Arm	A	From Leg	2.00	0.0000	107.00	No Ice	9.70	3.30	250.00
			0.00			1/2" Ice	12.10	5.20	314.00
			0.00			1" Ice	14.50	7.10	378.00
Round T-Arm	B	From Leg	2.00	0.0000	107.00	No Ice	9.70	3.30	250.00
			0.00			1/2" Ice	12.10	5.20	314.00
			0.00			1" Ice	14.50	7.10	378.00
Round T-Arm	C	From Leg	2.00	0.0000	107.00	No Ice	9.70	3.30	250.00
			0.00			1/2" Ice	12.10	5.20	314.00
			0.00			1" Ice	14.50	7.10	378.00
***									
GPS-TMG-HR-26N	C	From Leg	0.50	0.0000	75.00	No Ice	0.08	0.08	0.60
			0.00			1/2" Ice	0.12	0.12	1.99
			0.00			1" Ice	0.18	0.18	4.11

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 lb
***								

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	20345.07					
Bracing Weight	535.71					
Total Member Self-Weight	20880.77			614.68	-1654.36	
Total Weight	34350.79			614.68	-1654.36	
Wind 0 deg - No Ice		109.34	-13960.24	-1360765.11	-14090.06	-78.58
Wind 30 deg - No Ice		8470.83	-14409.93	-1340295.43	-794039.20	1381.84
Wind 60 deg - No Ice		12200.53	-7018.98	-684283.19	-1194601.58	227.31
Wind 90 deg - No Ice		15329.53	-109.34	-11821.01	-1465824.78	376.45
Wind 120 deg - No Ice		13221.10	7481.95	710899.99	-1263445.29	225.39
Wind 150 deg - No Ice		7570.08	13068.45	1243300.62	-722969.94	13.93
Wind 180 deg - No Ice		-109.34	13960.24	1361994.47	10781.33	78.58
Wind 210 deg - No Ice		-8470.83	14409.93	1341524.79	790730.47	-1381.84
Wind 240 deg - No Ice		-12200.53	7018.98	685512.56	1191292.85	-227.31
Wind 270 deg - No Ice		-15329.53	109.34	13050.38	1462516.05	-376.45
Wind 300 deg - No Ice		-13221.10	-7481.95	-709670.62	1260136.56	-225.39
Wind 330 deg - No Ice		-7570.08	-13068.45	-1242071.25	719661.22	-13.93
Member Ice	13601.79					
Total Weight Ice	71412.42			4006.95	-6327.72	
Wind 0 deg - Ice		83.18	-4377.84	-438580.24	-15487.77	-25.32
Wind 30 deg - Ice		2576.05	-4286.71	-416895.48	-260694.43	375.36
Wind 60 deg - Ice		3920.85	-2258.63	-224990.79	-404316.97	70.45
Wind 90 deg - Ice		4720.98	-83.18	-5153.10	-472243.46	118.25
Wind 120 deg - Ice		4046.90	2235.36	222961.96	-405242.56	81.39
Wind 150 deg - Ice		2288.46	3954.93	392408.21	-231352.75	22.72
Wind 180 deg - Ice		-83.18	4377.84	446594.14	2832.34	25.32
Wind 210 deg - Ice		-2576.05	4286.71	424909.39	248039.00	-375.36
Wind 240 deg - Ice		-3920.85	2258.63	233004.70	391661.54	-70.45
Wind 270 deg - Ice		-4720.98	83.18	13167.01	459588.03	-118.25
Wind 300 deg - Ice		-4046.90	-2235.36	-214948.06	392587.12	-81.39
Wind 330 deg - Ice		-2288.46	-3954.93	-384394.31	218697.31	-22.72
Total Weight	34350.79			614.68	-1654.36	
Wind 0 deg - Service		43.48	-5551.44	-541205.97	-4665.58	-31.25
Wind 30 deg - Service		3368.52	-5730.26	-533065.98	-314820.79	34.15
Wind 60 deg - Service		4851.67	-2791.17	-272195.62	-474108.76	90.39
Wind 90 deg - Service		6095.95	-43.48	-4783.76	-581963.60	122.42
Wind 120 deg - Service		5257.51	2975.28	282614.07	-501485.20	121.64
Wind 150 deg - Service		3010.32	5196.81	494328.94	-286559.33	88.27
Wind 180 deg - Service		-43.48	5551.44	541528.84	5224.80	31.25
Wind 210 deg - Service		-3368.52	5730.26	533388.85	315380.01	-34.15
Wind 240 deg - Service		-4851.67	2791.17	272518.48	474667.98	-90.39
Wind 270 deg - Service		-6095.95	43.48	5106.62	582522.82	-122.42
Wind 300 deg - Service		-5257.51	-2975.28	-282291.20	502044.42	-121.64
Wind 330 deg - Service		-3010.32	-5196.81	-494006.07	287118.55	-88.27

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 lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	150 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27761.88	-396.58	-240.70
			Max. Mx	8	-10813.83	-342123.78	1253.44
			Max. My	14	-10865.19	1232.31	-336232.82
			Max. Vy	20	-11543.08	342094.48	-1286.23
			Max. Vx	14	11371.14	1232.31	-336232.82
			Max. Torque	22			518.46
L2	110 - 85	Pole	Max Tension	34	60968.53	20845.07	-35044.94
			Max. Compression	26	-35459.73	680.12	-1702.52
			Max. Mx	8	-13864.43	-538056.33	3362.47
			Max. My	14	-13946.56	3356.47	-525241.68
			Max. Vy	8	14779.84	-538056.33	3362.47
			Max. Vx	14	14059.36	3356.47	-525241.68
			Max. Torque	5			-687.12
	85 - 95.69	Reinforcing	Max Tension	4	152179.89	186.53	-94.54
			Max. Compression	16	-156599.62	-240.08	136.44
			Max. Mx	22	-131288.44	265.32	-9.15
			Max. My	4	-77995.05	-1.86	276.96
			Max. Vy	16	-12.72	248.23	141.02
			Max. Vx	20	-13.53	3.30	274.43
L3	85 - 70	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45298.95	-1244.67	-2444.93
			Max. Mx	8	-19244.93	-957326.84	7911.60
			Max. My	14	-19337.47	7621.18	-917168.32
			Max. Vy	8	17785.19	-957326.84	7911.60
			Max. Vx	14	16500.25	7621.18	-917168.32
			Max. Torque	5			-1105.76
L4	70 - 55	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51455.18	-2559.45	-2951.98
			Max. Mx	8	-22903.22	-1236414.86	10532.96
			Max. My	14	-22985.81	10038.15	-1174913.46
			Max. Vy	8	19411.17	-1236414.86	10532.96
			Max. Vx	16	17972.77	650946.92	-1100239.42
			Max. Torque	5			-1538.63
L5	55 - 31.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62436.20	-4603.40	-3692.09
			Max. Mx	8	-29988.89	-1720911.07	14601.48
			Max. My	14	-30045.59	13762.48	-1618025.20
			Max. Vy	20	-21806.36	1718343.65	-15693.26
			Max. Vx	16	20633.82	918015.44	-1553681.07
			Max. Torque	5			-2193.84
L6	31.5 - 15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70617.52	-6047.71	-4206.27
			Max. Mx	8	-35546.51	-2093087.30	17416.25
			Max. My	14	-35573.73	16319.62	-1955561.34
			Max. Vy	20	-23284.44	2089784.98	-18764.00
			Max. Vx	16	21931.49	1124362.25	-1904818.52
			Max. Torque	5			-2193.78
L7	15 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78282.58	-6908.90	-4503.92

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	8	-41215.74	-2451457.19	19973.29
			Max. My	14	-41216.52	18708.11	-2280774.17
			Max. Vy	20	-24533.97	2447684.31	-21486.95
			Max. Vx	16	23063.47	1322346.81	-2241921.47
			Max. Torque	5			-2193.12

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	78282.58	0.37	0.67
	Max. H_x	20	41220.86	24525.56	-174.93
	Max. H_z	5	30915.71	-13553.29	23055.81
	Max. M_x	2	2279234.52	-174.91	22332.80
	Max. M_z	8	2451457.18	-24523.52	174.91
	Max. Torsion	17	2179.76	13553.29	-23055.81
	Min. Vert	21	30915.59	24524.80	-174.92
	Min. H_x	9	30915.59	-24524.81	174.92
	Min. H_z	17	30915.71	13553.29	-23055.81
	Min. M_x	14	-2280774.17	174.91	-22332.80
	Min. M_z	20	-2447684.31	24525.56	-174.93
	Min. Torsion	5	-2192.98	-13553.29	23055.81

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	34350.79	0.00	0.00	614.69	-1654.38	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	41220.77	174.91	-22332.80	-2279234.52	-22754.87	-154.17
0.9 Dead+1.6 Wind 0 deg - No Ice	30915.60	174.92	-22334.04	-2251917.30	-22007.22	-147.44
1.2 Dead+1.6 Wind 30 deg - No Ice	41220.94	13553.26	-23055.76	-2240323.88	-1326467.29	2188.29
0.9 Dead+1.6 Wind 30 deg - No Ice	30915.71	13553.29	-23055.81	-2214570.15	-1310590.90	2192.98
1.2 Dead+1.6 Wind 60 deg - No Ice	41220.94	19520.73	-11230.30	-1146422.80	-2000356.71	367.09
0.9 Dead+1.6 Wind 60 deg - No Ice	30915.71	19520.78	-11230.33	-1132720.00	-1975571.64	367.41
1.2 Dead+1.6 Wind 90 deg - No Ice	41220.75	24523.52	-174.91	-19973.33	-2451457.18	611.01
0.9 Dead+1.6 Wind 90 deg - No Ice	30915.59	24524.81	-174.92	-19945.24	-2422035.22	607.58
1.2 Dead+1.6 Wind 120 deg - No Ice	41220.94	21153.63	11971.05	1189284.51	-2113426.02	370.72
0.9 Dead+1.6 Wind 120 deg - No Ice	30915.71	21153.68	11971.08	1174987.15	-2087841.03	364.45

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.6 Wind 150 deg - No Ice	41220.94	12112.06	20909.40	2080049.87	-1209123.47	34.05
0.9 Dead+1.6 Wind 150 deg - No Ice	30915.71	12112.09	20909.45	2055207.88	-1194255.72	26.75
1.2 Dead+1.6 Wind 180 deg - No Ice	41220.77	-174.91	22332.80	2280774.17	18708.10	141.79
0.9 Dead+1.6 Wind 180 deg - No Ice	30915.60	-174.92	22334.04	2253059.55	19009.06	135.46
1.2 Dead+1.6 Wind 210 deg - No Ice	41220.94	-13553.26	23055.76	2241921.40	1322346.92	-2175.03
0.9 Dead+1.6 Wind 210 deg - No Ice	30915.71	-13553.29	23055.81	2215767.15	1307519.14	-2179.76
1.2 Dead+1.6 Wind 240 deg - No Ice	41220.94	-19520.73	11230.30	1147893.90	1996235.85	-343.45
0.9 Dead+1.6 Wind 240 deg - No Ice	30915.71	-19520.78	11230.33	1133801.79	1972502.11	-344.13
1.2 Dead+1.6 Wind 270 deg - No Ice	41220.86	-24525.56	174.93	21486.92	2447684.31	-598.23
0.9 Dead+1.6 Wind 270 deg - No Ice	30915.59	-24524.80	174.92	21067.16	2419058.18	-595.25
1.2 Dead+1.6 Wind 300 deg - No Ice	41220.94	-21153.63	-11971.05	-1187703.96	2109287.52	-381.80
0.9 Dead+1.6 Wind 300 deg - No Ice	30915.71	-21153.68	-11971.08	-1173803.57	2084758.81	-375.63
1.2 Dead+1.6 Wind 330 deg - No Ice	41220.94	-12112.06	-20909.40	-2078579.52	1204979.49	-59.18
0.9 Dead+1.6 Wind 330 deg - No Ice	30915.71	-12112.09	-20909.45	-2054126.98	1191169.24	-51.41
1.2 Dead+1.0 Ice+1.0 Temp	78282.58	-0.37	-0.67	4503.92	-6908.90	-0.02
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	78282.57	83.16	-4377.15	-493392.52	-17197.38	-33.83
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	78282.57	2575.86	-4286.39	-467792.97	-292476.36	370.21
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	78282.57	3920.54	-2258.45	-252875.72	-454833.30	70.53
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	78282.57	4720.62	-83.18	-5396.84	-530504.95	122.97
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	78282.57	4046.59	2235.19	250909.18	-455333.27	89.16
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	78282.57	2288.28	3954.63	441245.92	-260055.70	31.42
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	78282.57	-83.17	4377.49	502870.26	3002.59	32.93
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	78282.57	-2575.86	4286.38	477201.85	278283.22	-370.19
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	78282.57	-3920.54	2258.45	262284.79	440639.03	-69.54
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	78282.57	-4720.63	83.17	14804.52	516310.85	-121.86
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	78282.57	-4046.60	-2235.19	-241501.26	441137.70	-88.94
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	78282.57	-2288.29	-3954.64	-431837.33	245859.48	-32.21
Dead+Wind 0 deg - Service	34350.78	43.47	-5550.72	-562176.66	-6821.47	-36.68
Dead+Wind 30 deg - Service	34350.78	3368.12	-5729.59	-552739.85	-328721.45	31.54
Dead+Wind 60 deg - Service	34350.78	4851.04	-2790.81	-282494.49	-494897.06	91.08
Dead+Wind 90 deg - Service	34350.78	6095.20	-43.47	-4483.40	-606488.09	125.57
Dead+Wind 120 deg - Service	34350.78	5256.86	2974.91	294025.22	-522903.47	126.15
Dead+Wind 150 deg - Service	34350.78	3009.95	5196.17	513921.18	-299662.23	93.30
Dead+Wind 180 deg - Service	34350.78	-43.47	5550.72	563451.03	3418.70	36.01
Dead+Wind 210 deg - Service	34350.78	-3368.12	5729.59	554014.48	325318.95	-30.39

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 240 deg - Service	34350.78	-4851.04	2790.81	283768.16	491494.89	-89.37
Dead+Wind 270 deg - Service	34350.78	-6095.20	43.47	5756.70	603086.07	-124.85
Dead+Wind 300 deg - Service	34350.78	-5256.86	-2974.91	-292751.71	519500.45	-127.16
Dead+Wind 330 deg - Service	34350.78	-3009.95	-5196.17	-512647.58	296258.85	-95.02

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-34350.79	0.00	-0.00	34350.79	-0.00	0.000%
2	174.94	-41220.95	-22336.39	-174.91	41220.77	22332.80	0.008%
3	174.94	-30915.71	-22336.39	-174.92	30915.60	22334.04	0.006%
4	13553.33	-41220.95	-23055.89	-13553.26	41220.94	23055.76	0.000%
5	13553.33	-30915.71	-23055.89	-13553.29	30915.71	23055.81	0.000%
6	19520.85	-41220.95	-11230.37	-19520.73	41220.94	11230.30	0.000%
7	19520.85	-30915.71	-11230.37	-19520.78	30915.71	11230.33	0.000%
8	24527.25	-41220.95	-174.94	-24523.52	41220.75	174.91	0.008%
9	24527.25	-30915.71	-174.94	-24524.81	30915.59	174.92	0.006%
10	21153.75	-41220.95	11971.12	-21153.63	41220.94	-11971.05	0.000%
11	21153.75	-30915.71	11971.12	-21153.68	30915.71	-11971.08	0.000%
12	12112.13	-41220.95	20909.53	-12112.06	41220.94	-20909.40	0.000%
13	12112.13	-30915.71	20909.53	-12112.09	30915.71	-20909.45	0.000%
14	-174.94	-41220.95	22336.39	174.91	41220.77	-22332.80	0.008%
15	-174.94	-30915.71	22336.39	174.92	30915.60	-22334.04	0.006%
16	-13553.33	-41220.95	23055.89	13553.26	41220.94	-23055.76	0.000%
17	-13553.33	-30915.71	23055.89	13553.29	30915.71	-23055.81	0.000%
18	-19520.85	-41220.95	11230.37	19520.73	41220.94	-11230.30	0.000%
19	-19520.85	-30915.71	11230.37	19520.78	30915.71	-11230.33	0.000%
20	-24527.25	-41220.95	174.94	24525.56	41220.86	-174.93	0.004%
21	-24527.25	-30915.71	174.94	24524.80	30915.59	-174.92	0.006%
22	-21153.75	-41220.95	-11971.12	21153.63	41220.94	11971.05	0.000%
23	-21153.75	-30915.71	-11971.12	21153.68	30915.71	11971.08	0.000%
24	-12112.13	-41220.95	-20909.53	12112.06	41220.94	20909.40	0.000%
25	-12112.13	-30915.71	-20909.53	12112.09	30915.71	20909.45	0.000%
26	0.00	-78282.58	0.00	0.37	78282.58	0.67	0.001%
27	83.18	-78282.58	-4377.84	-83.16	78282.57	4377.15	0.001%
28	2576.05	-78282.58	-4286.71	-2575.86	78282.57	4286.39	0.000%
29	3920.85	-78282.58	-2258.63	-3920.54	78282.57	2258.45	0.000%
30	4720.98	-78282.58	-83.18	-4720.62	78282.57	83.18	0.000%
31	4046.90	-78282.58	2235.36	-4046.59	78282.57	-2235.19	0.000%
32	2288.46	-78282.58	3954.93	-2288.28	78282.57	-3954.63	0.000%
33	-83.18	-78282.58	4377.84	83.17	78282.57	-4377.49	0.000%
34	-2576.05	-78282.58	4286.71	2575.86	78282.57	-4286.38	0.000%
35	-3920.85	-78282.58	2258.63	3920.54	78282.57	-2258.45	0.000%
36	-4720.98	-78282.58	83.18	4720.63	78282.57	-83.17	0.000%
37	-4046.90	-78282.58	-2235.36	4046.60	78282.57	2235.19	0.000%
38	-2288.46	-78282.58	-3954.93	2288.29	78282.57	3954.64	0.000%
39	43.48	-34350.79	-5551.44	-43.47	34350.78	5550.72	0.002%
40	3368.52	-34350.79	-5730.26	-3368.12	34350.78	5729.59	0.002%
41	4851.67	-34350.79	-2791.17	-4851.04	34350.78	2790.81	0.002%
42	6095.95	-34350.79	-43.48	-6095.20	34350.78	43.47	0.002%
43	5257.51	-34350.79	2975.28	-5256.86	34350.78	-2974.91	0.002%
44	3010.32	-34350.79	5196.81	-3009.95	34350.78	-5196.17	0.002%
45	-43.48	-34350.79	5551.44	43.47	34350.78	-5550.72	0.002%
46	-3368.52	-34350.79	5730.26	3368.12	34350.78	-5729.59	0.002%
47	-4851.67	-34350.79	2791.17	4851.04	34350.78	-2790.81	0.002%
48	-6095.95	-34350.79	43.48	6095.20	34350.78	-43.47	0.002%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
49	-5257.51	-34350.79	-2975.28	5256.86	34350.78	2974.91	0.002%
50	-3010.32	-34350.79	-5196.81	3009.95	34350.78	5196.17	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	15	0.00010260	0.00012845
3	Yes	15	0.00006658	0.00009981
4	Yes	19	0.00000001	0.00012809
5	Yes	19	0.00000001	0.00008664
6	Yes	19	0.00000001	0.00010089
7	Yes	19	0.00000001	0.00006891
8	Yes	15	0.00010138	0.00012911
9	Yes	15	0.00006577	0.00009990
10	Yes	19	0.00000001	0.00010939
11	Yes	19	0.00000001	0.00007443
12	Yes	19	0.00000001	0.00010753
13	Yes	19	0.00000001	0.00007321
14	Yes	15	0.00010260	0.00013694
15	Yes	15	0.00006658	0.00010641
16	Yes	19	0.00000001	0.00011950
17	Yes	19	0.00000001	0.00008057
18	Yes	19	0.00000001	0.00010279
19	Yes	19	0.00000001	0.00007029
20	Yes	16	0.00004653	0.00008223
21	Yes	15	0.00006590	0.00013231
22	Yes	19	0.00000001	0.00010646
23	Yes	19	0.00000001	0.00007245
24	Yes	19	0.00000001	0.00010757
25	Yes	19	0.00000001	0.00007331
26	Yes	10	0.00000001	0.00003685
27	Yes	17	0.00014334	0.00014932
28	Yes	18	0.00000001	0.00009377
29	Yes	18	0.00000001	0.00008866
30	Yes	18	0.00000001	0.00008255
31	Yes	18	0.00000001	0.00008793
32	Yes	18	0.00000001	0.00008712
33	Yes	18	0.00000001	0.00008047
34	Yes	18	0.00000001	0.00009419
35	Yes	18	0.00000001	0.00008900
36	Yes	18	0.00000001	0.00008168
37	Yes	18	0.00000001	0.00008561
38	Yes	18	0.00000001	0.00008471
39	Yes	15	0.00000001	0.00004101
40	Yes	15	0.00000001	0.00005933
41	Yes	15	0.00000001	0.00004867
42	Yes	15	0.00000001	0.00004296
43	Yes	15	0.00000001	0.00005516
44	Yes	15	0.00000001	0.00005079
45	Yes	15	0.00000001	0.00004114
46	Yes	15	0.00000001	0.00005799
47	Yes	15	0.00000001	0.00005143
48	Yes	15	0.00000001	0.00004303
49	Yes	15	0.00000001	0.00005031

50	Yes	15	0.00000001	0.00005335

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 110	25.782	40	1.9720	0.0050
L2	110 - 85	11.450	40	1.2216	0.0012
L3	85 - 70	6.500	40	0.7675	0.0004
L4	70 - 55	4.313	40	0.6221	0.0003
L5	55 - 31.5	2.594	40	0.4710	0.0002
L6	31.5 - 15	0.793	40	0.2578	0.0001
L7	15 - 0	0.160	40	0.1080	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Andrew ABT-DFDM-ADB	40	25.782	1.9720	0.0052	13417
143.00	800 MHz 2X50W RRH w/ Filter	40	22.950	1.8457	0.0044	9584
132.00	(2) FD9R6004/2C-3L	40	18.648	1.6449	0.0031	3726
107.00	(4) 48" x 8" Panel	40	10.693	1.1605	0.0010	1866
75.00	GPS-TMG-HR-26N	40	4.996	0.6661	0.0003	6130

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 110	104.560	4	8.0330	0.0195
L2	110 - 85	46.441	4	4.9682	0.0069
L3	85 - 70	26.354	4	3.1159	0.0044
L4	70 - 55	17.485	4	2.5242	0.0036
L5	55 - 31.5	10.511	4	1.9103	0.0027
L6	31.5 - 15	3.214	4	1.0446	0.0014
L7	15 - 0	0.648	4	0.4374	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Andrew ABT-DFDM-ADB	4	104.560	8.0330	0.0225	3402
143.00	800 MHz 2X50W RRH w/ Filter	4	93.077	7.5169	0.0190	2429
132.00	(2) FD9R6004/2C-3L	4	75.631	6.6968	0.0138	942

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
107.00	(4) 48" x 8" Panel	4	43.368	4.7191	0.0065	465
75.00	GPS-TMG-HR-26N	4	20.254	2.7033	0.0039	1514

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 110 (1)	TP21.25x15x0.1875	40.00	0.00	0.0	12.7165	-10760.30	852766.00	0.013
L2	110 - 85 (2)	TP27.61x21.25x0.25	25.00	0.00	0.0	19.8356	-13810.00	1402030.00	0.010
L3	85 - 70 (3)	TP35.691x33.325x0.3722	15.00	0.00	0.0	42.3301	-19169.40	3032900.00	0.006
L4	70 - 55 (4)	TP38.058x35.691x0.3918	15.00	0.00	0.0	47.5231	-22824.30	3389480.00	0.007
L5	55 - 31.5 (5)	TP41.576x38.058x0.472	23.50	0.00	0.0	62.4767	-29928.20	4605160.00	0.006
L6	31.5 - 15 (6)	TP44.046x41.576x0.4977	16.50	0.00	0.0	69.7902	-35519.10	5136070.00	0.007
L7	15 - 0 (7)	TP52.064x44.046x0.5362	15.00	0.00	0.0	75.1266	-35535.30	5537580.00	0.006

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 110 (1)	TP21.25x15x0.1875	346480.00	365565.83	0.948	0.00	365565.83	0.000
L2	110 - 85 (2)	TP27.61x21.25x0.25	547180.83	702260.00	0.779	0.00	702260.00	0.000
L3	85 - 70 (3)	TP35.691x33.325x0.3722	981383.33	2176641.67	0.451	0.00	2176641.67	0.000
L4	70 - 55 (4)	TP38.058x35.691x0.3918	1278591.67	2594566.67	0.493	0.00	2594566.67	0.000
L5	55 - 31.5 (5)	TP41.576x38.058x0.472	1805066.67	3842766.67	0.470	0.00	3842766.67	0.000
L6	31.5 - 15 (6)	TP44.046x41.576x0.4977	2212516.67	4540900.00	0.487	0.00	4540900.00	0.000
L7	15 - 0 (7)	TP52.064x44.046x0.5362	2212516.67	4887225.00	0.453	0.00	4887225.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 110 (1)	TP21.25x15x0.1875	11833.20	426383.00	0.028	109.19	741254.17	0.000
L2	110 - 85 (2)	TP27.61x21.25x0.25	15170.30	701016.00	0.022	404.64	1423966.67	0.000
L3	85 - 70 (3)	TP35.691x33.325x0.3722	18771.20	1516450.00	0.012	1101.21	4413550.00	0.000
L4	70 - 55 (4)	TP38.058x35.691x0.3918	20880.20	1694740.00	0.012	1534.02	5260975.00	0.000
L5	55 - 31.5 (5)	TP41.576x38.058x0.472	23950.90	2302580.00	0.010	2189.17	7791933.33	0.000
L6	31.5 - 15 (6)	TP44.046x41.576x0.4977	25447.70	2568040.00	0.010	2188.45	9207500.00	0.000
L7	15 - 0 (7)	TP52.064x44.046x0.5362	25524.80	2802810.00	0.009	2188.42	9909750.00	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 110 (1)	0.013	0.948	0.000	0.028	0.000	0.961 ✔	1.000	4.8.2 ✔
L2	110 - 85 (2)	0.010	0.779	0.000	0.022	0.000	0.790 ✔	1.000	4.8.2 ✔
L3	85 - 70 (3)	0.006	0.451	0.000	0.012	0.000	0.457 ✔	1.000	4.8.2 ✔
L4	70 - 55 (4)	0.007	0.493	0.000	0.012	0.000	0.500 ✔	1.000	4.8.2 ✔
L5	55 - 31.5 (5)	0.006	0.470	0.000	0.010	0.000	0.476 ✔	1.000	4.8.2 ✔
L6	31.5 - 15 (6)	0.007	0.487	0.000	0.010	0.000	0.494 ✔	1.000	4.8.2 ✔
L7	15 - 0 (7)	0.006	0.453	0.000	0.009	0.000	0.459 ✔	1.000	4.8.2 ✔

Reinforcing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L2	95.69 - 85	2 1/2	10.69	2.50	38.4 K=0.80	4.9087	-156600.00	281863.00	0.556 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	95.69 - 85	2 1/2	276.14	14648.42	0.019	0.00	14648.42	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L2	95.69 - 85	2 1/2	0.556	0.019	0.000	0.556 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Tension Checks

Reinforcing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L2	95.69 - 85	2 1/2	10.69	2.50	48.0	4.9087	152180.00	331340.00	0.459 [1]

[1] P_u / ϕP_n controls

Reinforcing Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	95.69 - 85	2 1/2	209.12	14648.42	0.014	0.00	14648.42	0.000

Reinforcing Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L2	95.69 - 85	2 1/2	0.459	0.014	0.000	0.459 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	150 - 110	Pole	TP21.25x15x0.1875	1	-10760.30	852766.00	96.1	Pass
L2	110 - 85	Pole	TP27.61x21.25x0.25	2	-13810.00	1402030.00	79.0	Pass
	95.69 - 85	Reinforcing	2 1/2	10	-156600.00	281863.00	55.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L3	85 - 70	Pole	TP35.691x33.325x0.3722	3	-19169.40	3032900.00	45.7	Pass
L4	70 - 55	Pole	TP38.058x35.691x0.3918	4	-22824.30	3389480.00	50.0	Pass
L5	55 - 31.5	Pole	TP41.576x38.058x0.472	5	-29928.20	4605160.00	47.6	Pass
L6	31.5 - 15	Pole	TP44.046x41.576x0.4977	6	-35519.10	5136070.00	49.4	Pass
L7	15 - 0	Pole	TP52.064x44.046x0.5362	7	-35535.30	5537580.00	45.9	Pass
							Summary	
						Pole (L1)	96.1	Pass
						Reinforcing (L2)	55.6	Pass
						RATING =	**96.1**	**Pass**

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	52.064	in
	Pole Thickness	0.375	in
	Plate Diameter	63.084	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	508.43	k-in
	Applied	241.14	k-in
Stiffeners	#	***0***	

Bolts	#	***16***	
	Bolt Circle	58	in
	(R)adial / (S)quare	R	
●	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	134.90	k
	Applied	126.55	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***8***	
	Bolt Circle	44	in
	(R)adial / (S)quare	S	
	Bolt Gap	6	in
	Offset Angle	45	°
	Diameter	2.25	in
	Type	A615	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	184.43	k

Code Rev. ***G***

Moment 2603.6 k-ft

Axial 41.2 k

Date	1/25/2017
Engineer	JDB
Site #	302523
Carrier	AT&T Mobility

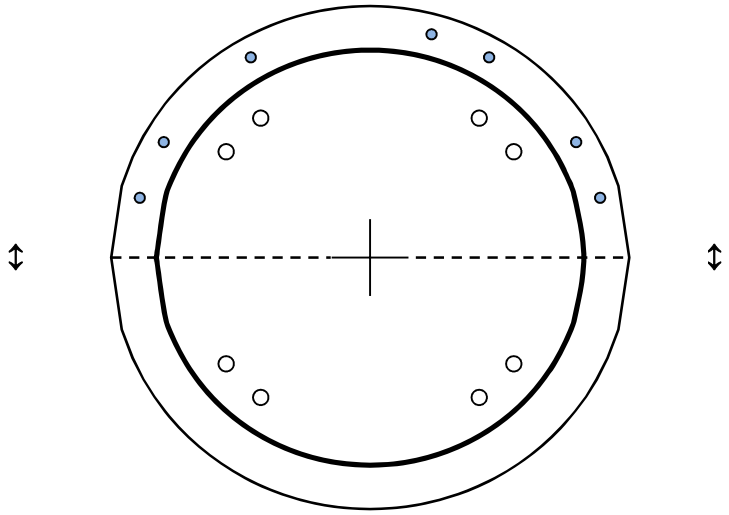


Plate Stress Ratio:

0.47 (Pass)

Bolt Stress Ratio:

0.94 (Pass)

Extra Bolt Stress Ratio:

0.71 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 15.0 ft***
	Pole Diameter	41.726	in
	Pole Thickness	0.3125	in
	Plate Diameter	54.652	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	589.89	k-in
	Applied	340.75	k-in
Stiffeners	#	***0***	

Bolts	#	***12***	
	Bolt Circle	49.652	in
	(R)adial / (S)quare	R	
	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	117.48	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev.	***G***
Moment	2212.5 k-ft
Act. Moment	1495.5 k-ft
Axial	35.5 k

Date	1/25/2017
Engineer	JDB
Site #	302523
Carrier	AT&T Mobility

Required Flange Thickness:

1.52 in OK

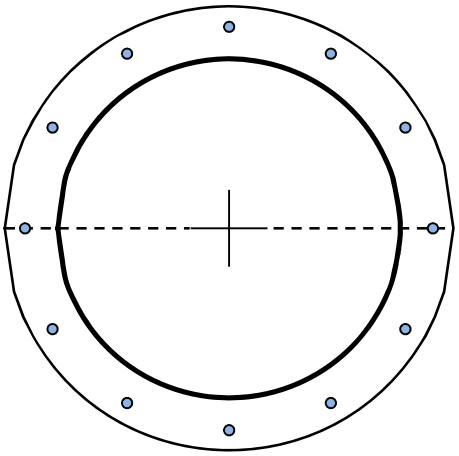


Plate Stress Ratio:

0.58 (Pass)

Bolt Stress Ratio:

0.93 (Pass)

Code Rev.	G	Date	1/25/2017
		Engineer	JDB
Moment	1278.6 k-ft	Site #	302523
Act. Moment	864.3 k-ft	Carrier	AT&T Mobility
Axial	22.8 k		

Base/Flange Plate

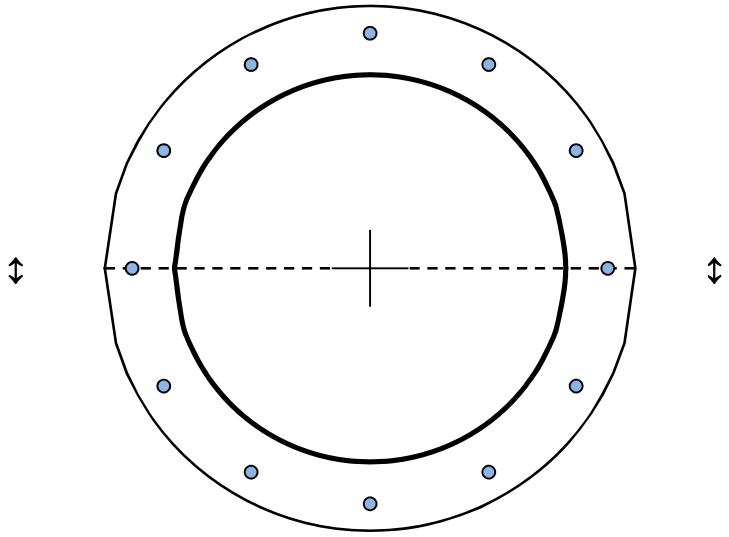
Plate Type	***Flange*** ***@ 55.0 ft***	
Pole Diameter	35.742	in
Pole Thickness	0.25	in
Plate Diameter	48.456	in
Plate Thickness	2	in
Plate Fy	60	ksi
Weld Length	0.25	in
ϕ_s Resistance	505.29	k-in
Applied	216.89	k-in

Stiffeners

#	***0***

Required Flange Thickness:

1.31 in OK



Bolts

#	***12***	
Bolt Circle	43.456	in
(R)adial / (S)quare	R	
Diameter	1.5	in
Hole Diameter	1.625	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
ϕ_s Resistance	126.47	k
Applied	77.61	k

Reinforcement ●

#	***0***

Extra Bolts O

#	***0***

Plate Stress Ratio:

0.43 (Pass)

Bolt Stress Ratio:

0.61 (Pass)

Base/Flange Plate			
	Plate Type	***Flange***	***@ 110.0 ft***
	Pole Diameter	21.25	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	201.01	k-in
	Applied	76.04	k-in

Stiffeners			
	#	***6***	***Show***
	Thickness	0.5	in
	Length	3.5	in
	Height	6	in
	Chamfer	0.5	in
	Offset Angle	0	°
	Fy	50	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	52.89	k

Reinforcement ●		
#	***0***	

Extra Bolts O		
#	***0***	

Code Rev.	***G***	**Date**	1/25/2017
		Engineer	JDB
		Site #	302523
Moment	346.5 k-ft	**Carrier**	AT&T Mobility
Axial	10.8 k		

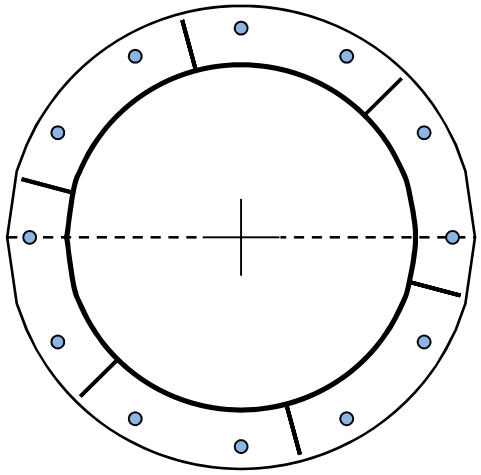
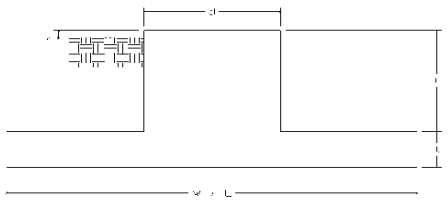


Plate Stress Ratio:
0.38 (Pass)

Bolt Stress Ratio:
0.97 (Pass)

Site Name:	New Milford CT 2, CT
Site Number:	302523
Engineering Number:	OAA692635
Engineer:	JDB
Date:	01/24/17
Tower Type:	MP

Program Last Updated: *5/13/2014*



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

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	41.2	k	Concrete Strength (f'_c):	3000	psi
Uplift/Leg:		k	Pad Tension Steel Depth:	32.00	in
Total Shear:	26.7	k	ϕ_{Shear}:	0.75	
Moment:	2603.6	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	34.4	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	8.00	ft	β:	0.85	
Diameter of Pier (d):	12.00	ft	Bottom Pad Rebar Size #:	10	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	36	
Width of Pad (W):	18.00	ft	Pad Bottom Steel Area:	45.72	in^2
Length of Pad (L):	18.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.00	ft	Top Pad Rebar Size #:	5	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	11.16	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	99.00	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	14	
Unit Weight of Soil Above Water Table:	115.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	136.0	in
Unit Weight of Soil Below Water Table:	52.6	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	30.0	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.50		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	37700.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	900.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

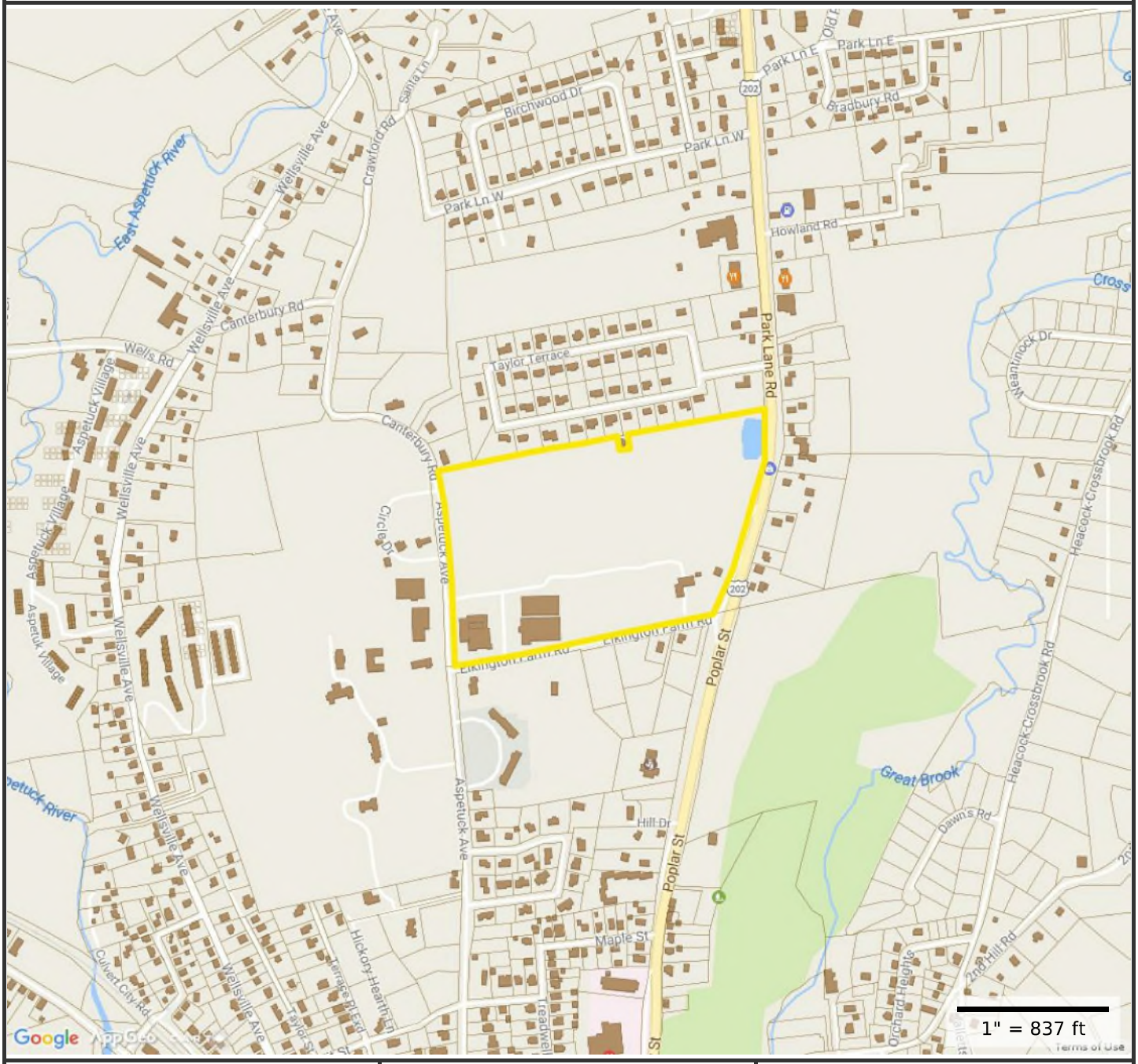
Design OTM:	2830.9	k-ft
OTM Resistance:	3508.9	k-ft
Design OTM / OTM Resistance:	0.81	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	5232	psf
Factored Nominal Bearing Pressure:	28275	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.19	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety

Total Factored Sliding Resistance:	178.7	k
Sliding Design / Sliding Resistance:	0.15	Result: OK



Property Information

Property ID	35.4/37
Location	CANTERBURY RD
Owner	CANTERBURY SCHOOL INC

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of New Milford, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 10/1/2014
Properties updated 01/27/2017

CANTERBURY RD

Location	CANTERBURY RD	**Mblu**	35/4 / 37/ /
Acct#	010997	**Owner**	CANTERBURY SCHOOL INC
Assessment	$9,900,940	**Appraisal**	$14,144,200
PID	6769	**Building Count**	4

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$12,174,300	$1,969,900	$14,144,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$8,522,010	$1,378,930	$9,900,940

Owner of Record

Owner	CANTERBURY SCHOOL INC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	101 ASPETUCK AVE NEW MILFORD, CT 06776	**Book & Page**	/
		Sale Date	

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
CANTERBURY SCHOOL INC	$0		/	

Building Information

Building 1 : Section 1

Year Built:	1925
Living Area:	34,613
Replacement Cost:	$3,981,874
Building Percent Good:	60
Replacement Cost Less Depreciation:	$2,389,100

Building Attributes	
Field	**Description**
STYLE	Gymnasium
MODEL	Comm/Ind

Building Photo

Grade	B
Stories:	2.5
Occupancy	1
Exterior Wall 1	Stone/Masonry
Exterior Wall 2	Brick/Masonry
Roof Structure	Gable
Roof Cover	Slate
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Plastered
Interior Floor 1	Hardwood
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	None
Bldg Use	Pvt School Com
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	904I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	22
% Comn Wall	0

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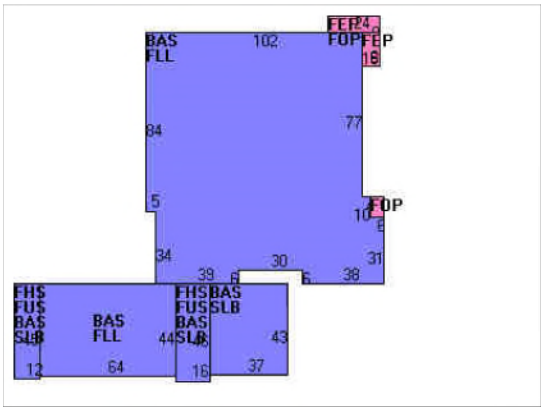
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	17,719	17,719
FLL	Finished Lower Level	14,852	14,852
FUS	Finished Upper Story	1,276	1,276
FHS	Finished Half Story	1,276	766
FEP	Enclosed Porch	320	0
FOP	Open Porch	252	0
SLB	Slab	2,867	0
		38,562	34,613

Building 2 : Section 1

Year Built: 1977
Living Area: 70,894
Replacement Cost: $9,095,796
Building Percent Good: 78
Replacement Cost Less Depreciation: $7,094,700

Building Photo

Building Attributes : Bldg 2 of 4	
Field	**Description**
STYLE	Gymnasium

MODEL	Comm/Ind
Grade	B+
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	Stone Veneer
Roof Structure	Gable
Roof Cover	Enamel Metal
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Bldg Use	Pvt School Com
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	904I
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20
% Comn Wall	0

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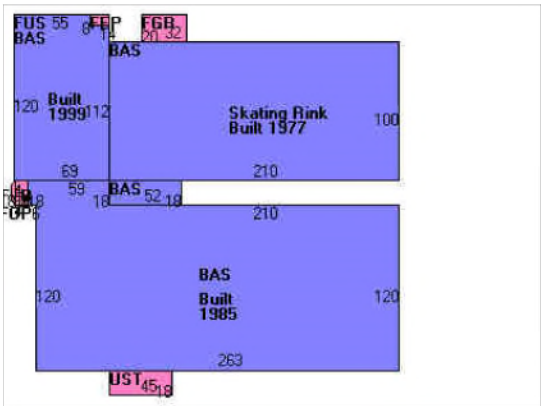
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	62,726	62,726
FUS	Finished Upper Story	8,168	8,168
FEP	Enclosed Porch	274	0
FGR	Garage	640	0
FOP	Open Porch	45	0
UST	Unfinished Utility Storage	810	0
		72,663	70,894

Building 3 : Section 1

Year Built: 2008
Living Area: 17,020
Replacement Cost: $2,174,816
Building Percent Good: 93
Replacement Cost Less Depreciation: $2,022,600

Building Photo

Building Attributes : Bldg 3 of 4	
Field	**Description**
STYLE	Auditorium
MODEL	Comm/Ind

Grade	B+
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Slate
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	Concr Abv Grad
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Bldg Use	Pvt School Com
Total Rooms	1
Total Bedrms	
Total Baths	11
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	

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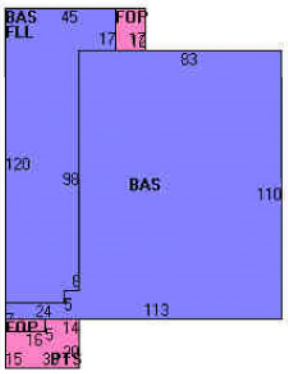
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	13,195	13,195
FLL	Finished Lower Level	3,825	3,825
FOP	Open Porch	284	0
PTS	Patio - Stone	520	0
		17,824	17,020

Building 4 : Section 1

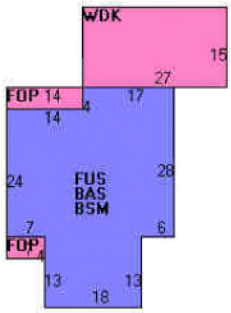
Year Built: 1900
Living Area: 2,092
Replacement Cost: $250,990
Building Percent Good: 69
Replacement Cost Less Depreciation: $173,200

Building Attributes : Bldg 4 of 4	
Field	**Description**
Style	Colonial
Model	Residential
Grade	C
Stories	2

Building Photo

Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shngl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Pine/Soft Wood
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type	None
Total Bedrooms	3 Bedrooms
Full Bathrooms	2
Half Bathrooms	1
Total Xtra Fixtrs	
Total Rooms	6
Bath Style	Average
Kitchen Style	Average
Whirlpool Tub	
Fireplaces	
Fin Bsmt Area	
Bsmt Garages	
Insp. Letter	
Multi-House	

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,046	1,046
FUS	Finished Upper Story	1,046	1,046
BSM	Basement	1,046	0
FOP	Open Porch	84	0
WDK	Wood Deck	405	0
		3,627	2,092

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
SPR	Sprinklers	1875 S.F.	$1,900	1
A/C	Air Conditioning	7650 S.F.	$28,500	3
SPR	Sprinklers	7650 S.F.	$12,100	3
ELV	Elevator	2 Units	$46,500	3
A/C	Air Conditioning	49762 S.F.	$155,300	2
ELV	Elevator	2 Units	$39,000	2

Land

Land Use

Use Code 947
Description Pvt School Com
Zone R40/B1
Neighborhood C110

Land Line Valuation

Size (Acres) 41.87
Frontage 0
Depth 0
Assessed Value $1,378,930

Alt Land Appr Category No

Appraised Value $1,969,900

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
LT1	Light (1)			7 Units	$6,600	3
SHD1	Shed	FR	Frame	288 S.F.	$1,700	4
TEN	Tennis Court			6 Units	$126,000	2
PAV1	Paving Asph.			10800 S.F.	$16,200	3
PAV1	Paving Asph.			8576 S.F.	$10,300	1
LT1	Light (1)			8 Units	$7,500	2
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
GAR1	Garage	FR	Frame	624 S.F.	$11,500	2
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
SHD1	Shed	BR	Brick/Frame	140 S.F.	$1,500	1
PAT1	Patio	BR	Brick	2842 S.F.	$25,600	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$12,342,100	$1,903,600	$14,245,700
2009	$9,337,700	$1,439,400	$10,777,100
2009	$9,337,700	$1,439,400	$10,777,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$8,639,470	$1,332,520	$9,971,990
2009	$6,536,390	$1,007,580	$7,543,970
2009	$6,536,390	$1,007,580	$7,543,970