smartlink

May 9, 2014

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

Re:	**Notice of Exempt Modification – Three (3) New Radio Heads Only**
Property Address:	**82 Tyrone Road, Pomfret, CT 06258 (the "Property")**
Applicant:	**New Cingular Wireless PCS, LLC ("AT&T")**

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 154-foot monopole (tower) location on the Property. AT&T's facility consists of nine (9) wireless telecommunication antennas at a height of 152-feet. The tower is owned by Crown Castle, LLC. The Council approved AT&T's use of the tower in the following prior decisions; EM-CING-112-090205 and EM-CING-112-130110. In its 1/25/2013 decision (the "Decision"), the Council approved for AT&T to install 6 Remote Radio Heads (Ericsson RRUS-11) but AT&T only installed three (3). AT&T now intends to install the remaining RRUS-11's to complete the installation. This Exempt Mod Application is necessary because the 1/25/2013 decision is over one year old. Please refer to Tab 1 for further specifications of the new radio heads.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to the Pomfret Board of Selectmen. A copy of this letter is also being sent to Crown Castle, LLC the owner of the property where the tower is located.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's new RRUS-11's will be installed at the 152-foot level of the 154-foot monopole.

33 Boston Post Road West, Marlborough, Massachusetts 01752
p: 508.954.7702 • adam.braillard@smartlinkllc.com
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2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A RF emissions calculation for AT&T's modified facility was provided in the application which led to the 1/25/2013 Decision. See Tab 2 attached.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

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

Sincerely,

Adam F. Braillard

cc: Crown Castle, LLC 12725 Morris Road Extension Suite 400 Alpharetta GA 30004
Pomfret Board of Selectmen – 5 Haven Road, Pomfret Center, CT 06259

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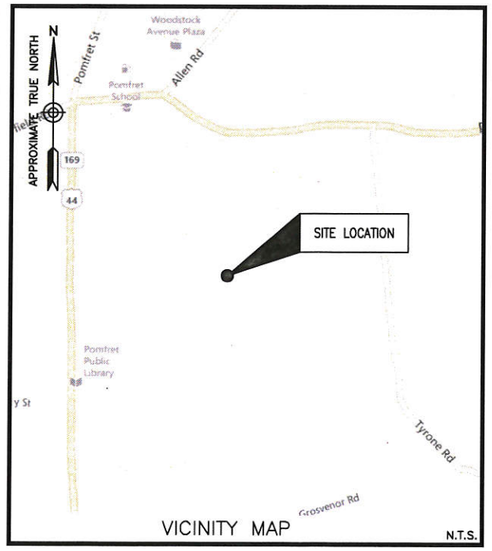
at&t Mobility

SITE NAME: POMFRET
SITE NUMBER: CT1050
82 TYRONE ROAD
POMFRET, CT 06258



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. TURN LEFT ONTO WEST ST. TAKE RAMP LEFT FOR I-91 N. AT EXIT 29, TAKE RAMP RIGHT FOR US-5 N/CT-15 N TOWARD BOSTON/E HARTFORD. KEEP STRAIGHT ONTO CT-15 N. KEEP STRAIGHT ONTO I-84 E/US-6 E. AT EXIT 69, TAKE RAMP RIGHT FOR CT-74 TOWARD WILLINGTON. TURN RIGHT ONTO CT-74/TOLLAND TPKE. KEEP LEFT TO STAY ON CT-74/TOLLAND TPKE. KEEP STRAIGHT ONTO CT-74/TOLLAND TPKE. BEAR LEFT ONTO US-44/POMPEY HOLLOW RD. KEEP LEFT ONTO CT-101/HARTFORD PROVIDENCE TPKE/MASHAMOQUET RD. TURN LEFT ONTO CT-169/POMFRET ST. THE SITE WILL BE ON THE RIGHT.

SITE COORDINATES:
LATITUDE: N 41° 53' 24.9"
LONGITUDE: W 71° 57' 21.2"
*TO BE VERIFIED WITH 1A SURVEY

ELEVATION DATA
GRADE ELEVATION AT TOWER = 763'± A.M.S.L
AS PER GOOGLE EARTH

ANTENNA ELEVATION (TO TOP OF ANTENNA)
ALPHA SECTOR: 156'-0"± A.G.L.
BETA SECTOR: 156'-0"± A.G.L.
GAMMA SECTOR: 156'-0"± A.G.L.

SITE INFORMATION

- ADD (1) NEW RRUS-11 PER SECTOR FOR A TOTAL OF (3) RRUS.

PROJECT DESCRIPTION

SITE NAME:
POMFRET

SITE NUMBER:
CT1050

LOCATION:
82 TYRONE ROAD, POMFRET
WINDHAM COUNTY, CT 06258

LANDLORD:
POMFRET SCHOOL, INC.
ROUTE 2, POMFRET, CT 06258

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

PROJECT INFORMATION

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 NUMBER	DESCRIPTION
T-1	TITLE SHEET
G-1	GENERAL NOTES
C-1	SITE PLAN & EQUIPMENT PLANS
C-2	ANTENNA LAYOUTS & ELEVATIONS
C-3	ANTENNA SCHEDULE & CONSTRUCTION DETAILS
E-1	GROUNDING DETAILS

SHEET INDEX

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

smartlink
1997 ANNAPOLIS EXCHANGE PARKWAY
SUITE 200
ANNAPOLIS, MD 21401

CT1050
POMFRET

CONSTRUCTION DRAWINGS

1	05/01/14	ISSUED FINAL
0	04/11/14	ISSUED FINAL
A	03/07/14	PRELIMINARY SUBMISSION

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

ROBERT J. FOLEY, P.E.
CT LICENSE No. PEN.0029056

DRAWN BY:	JC
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50063024
JOB NUMBER:	50063027

SITE ADDRESS:

82 TYRONE ROAD
POMFRET, CT 06258
WINDHAM 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 – SMARTLINK
   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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ROBERT J. FOLEY, P.E.
CT LICENSE No. PEN.0029056

DRAWN BY:	JC
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50063024
JOB NUMBER:	50063027
SITE ADDRESS:	

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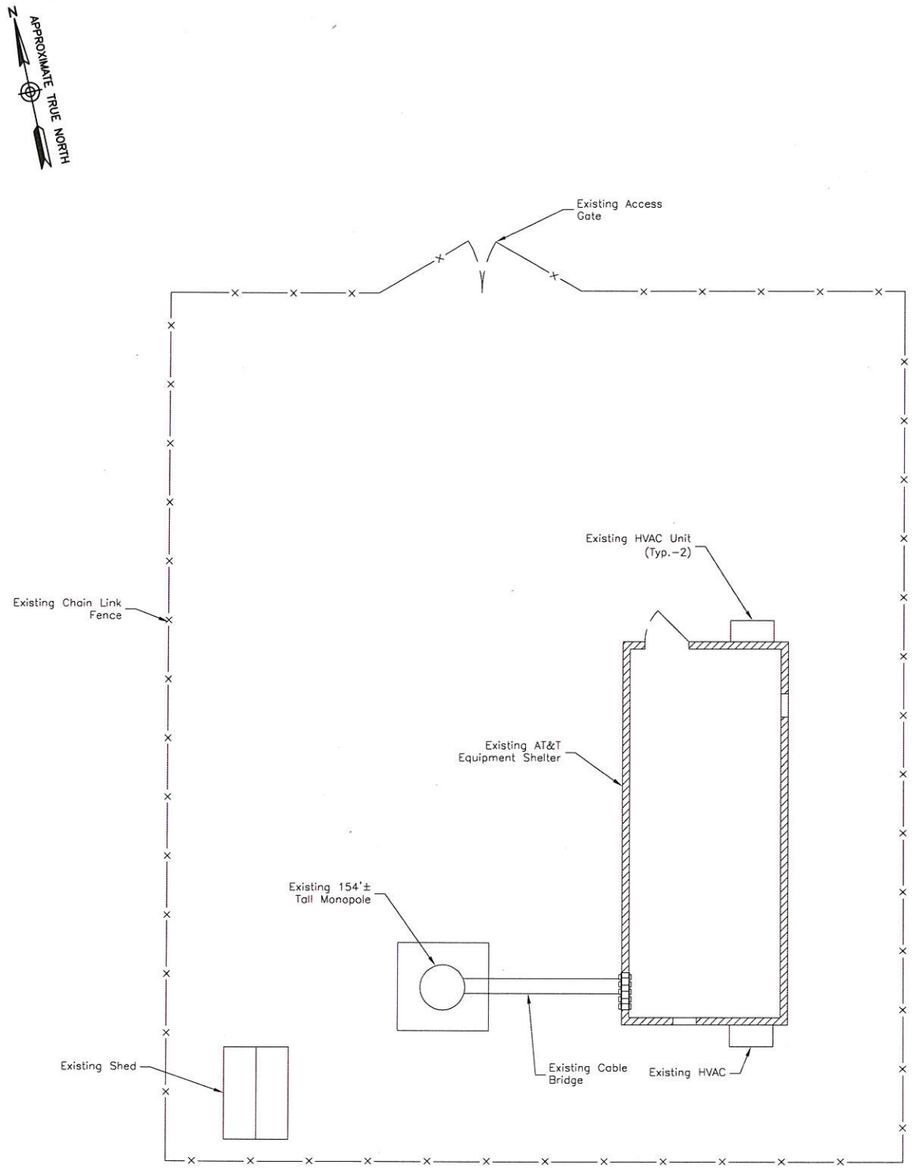
POMFRET, CT 06258
WINDHAM COUNTY

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

G-1



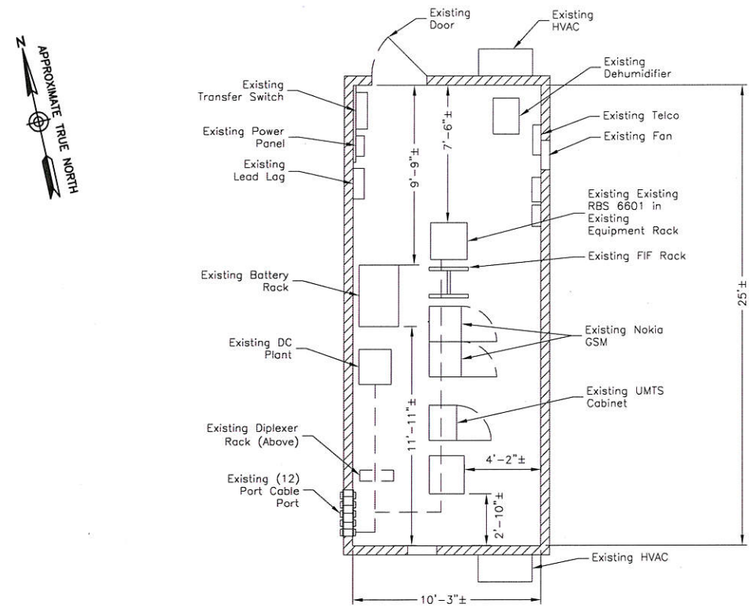
SITE PLAN 1

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

0' 5' 10'

NOTES:

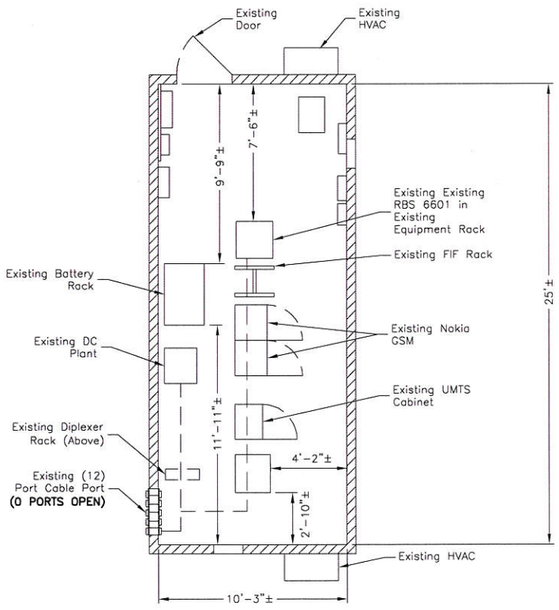
1. NORTH SHOWN AS APPROXIMATE.
2. MOUNT ALL ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS.
3. NOT ALL INFORMATION IS SHOWN FOR CLARITY.



EXISTING EQUIPMENT PLAN 2

SCALE: 1/8"=1' FOR 11"x17"
1/4"=1' FOR 22"x34"

0' 4' 8'



PROPOSED EQUIPMENT PLAN 3

SCALE: 1/8"=1' FOR 11"x17"
1/4"=1' FOR 22"x34"

0' 4' 8'

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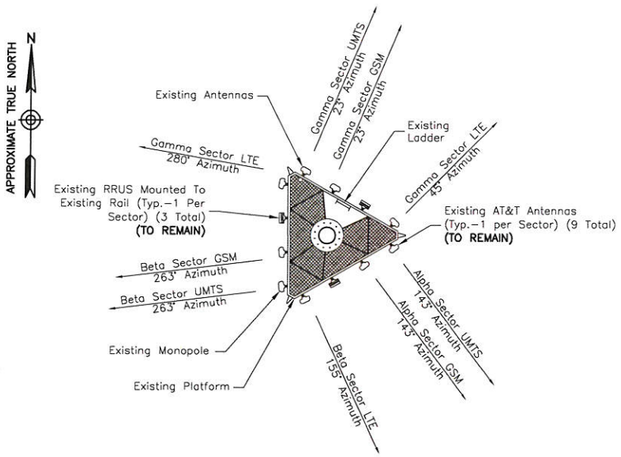
SHEET TITLE

SITE PLAN &
EQUIPMENT PLANS

SHEET NUMBER

C-1



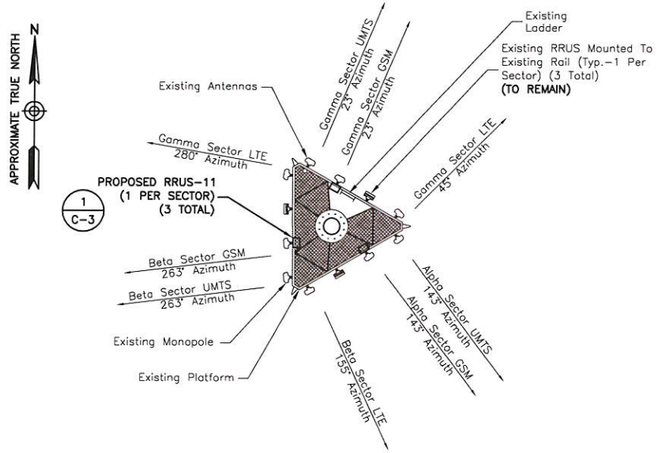
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.

1

NOTES:

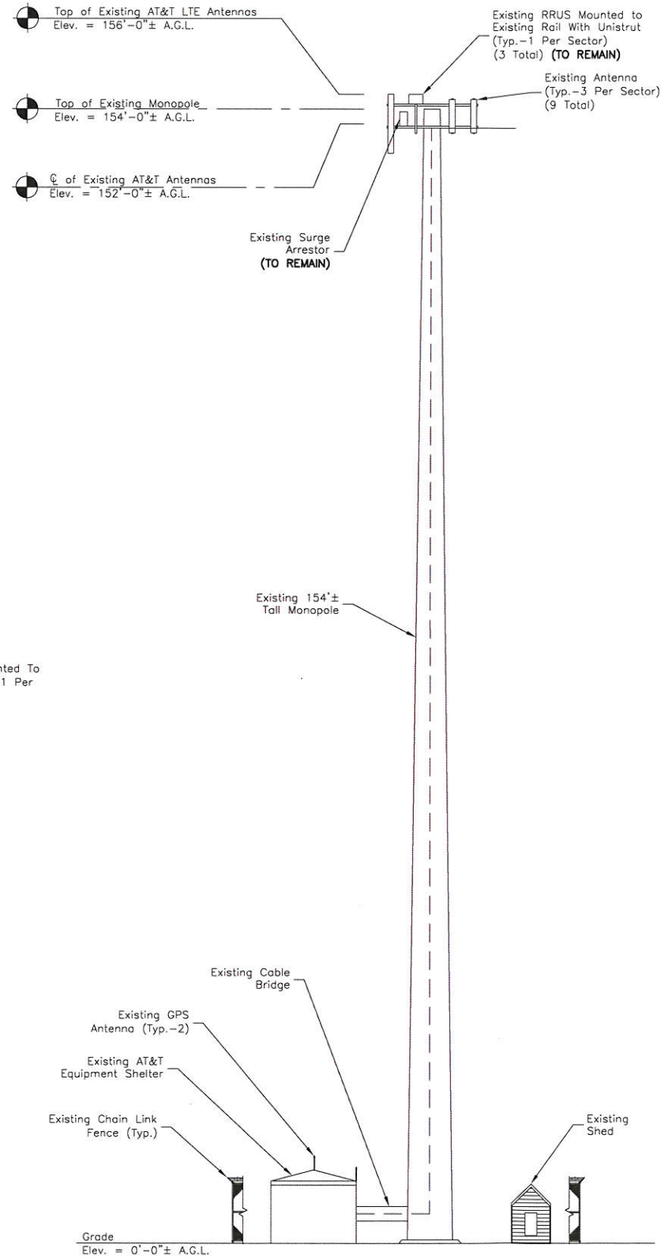
1. EXISTING TMA'S NOT SHOWN FOR CLARITY.
2. ALL EXISTING TMA'S ARE TO REMAIN.



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.

2

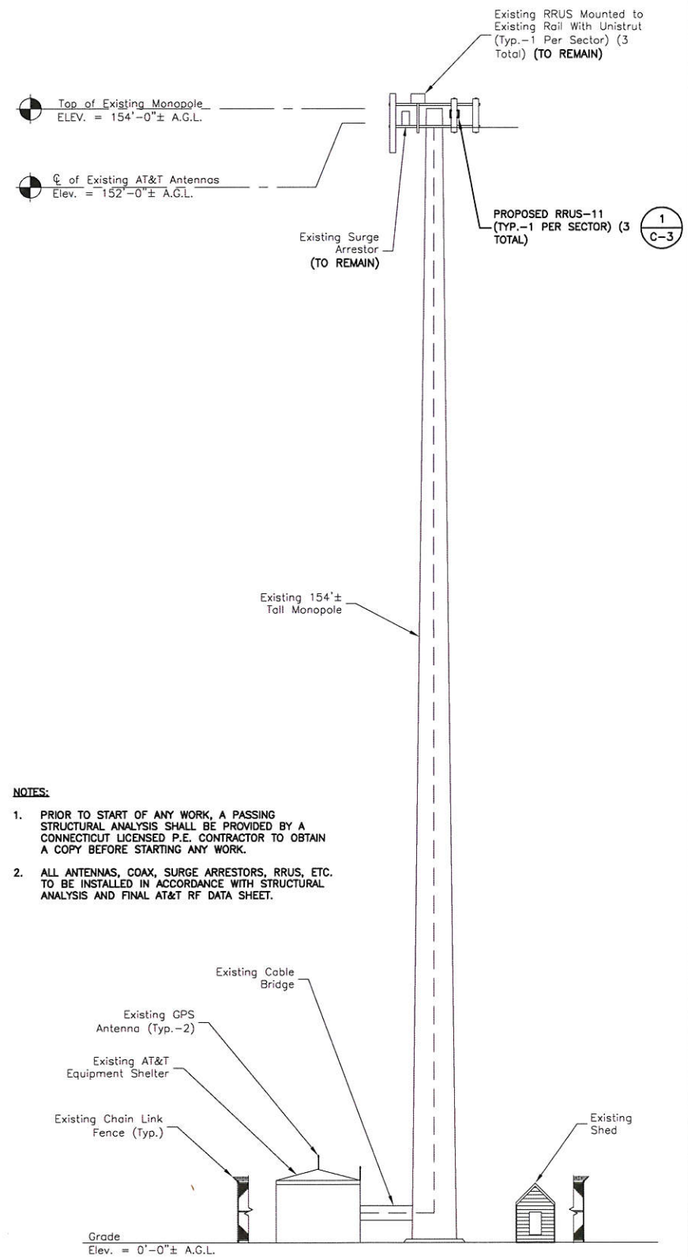


EXISTING NORTH ELEVATION

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

3

0' 10' 20'



NOTES:

1. PRIOR TO START OF ANY WORK, A PASSING STRUCTURAL ANALYSIS SHALL BE PROVIDED BY A CONNECTICUT LICENSED P.E. CONTRACTOR TO OBTAIN A COPY BEFORE STARTING ANY WORK.
2. ALL ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ETC. TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.

PROPOSED NORTH ELEVATION

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

4

0' 10' 20'

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WINDHAM COUNTY

SHEET TITLE

ANTENNA LAYOUTS & ELEVATIONS

SHEET NUMBER

C-2

EXISTING ANTENNA SCHEDULE

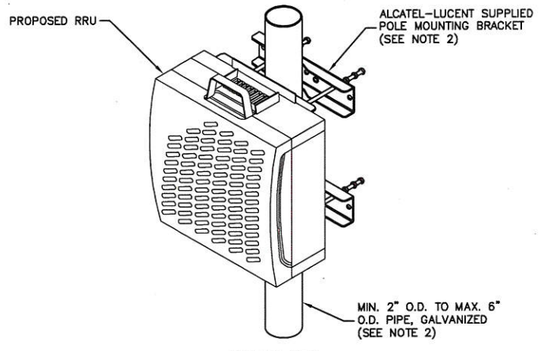
SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	ANDREWS	SBNH-1D6565C	96.4x11.9x7.1
BETA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	KMW	AM-X-CD-17-65-00T	66.3x6.7.x5.0
GAMMA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	KMW	AM-X-CD-17-65-00T	66.3x6.7x5.0

PROPOSED ANTENNA SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	ANDREWS	SBNH-1D6565C	96.4x11.9x7.1
BETA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	KMW	AM-X-CD-17-65-00T	66.3x6.7.x5.0
GAMMA:	POWERWAVE	7770	55x11x5
	POWERWAVE	7770	55x11x5
	KMW	AM-X-CD-17-65-00T	66.3x6.7x5.0

PROPOSED RRUS SCHEDULE

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



ISOMETRIC VIEW

NOTES:

1. ALCATEL-LUCENT (ALU) VIA AT&T SUPPLIES RRU, RRU POLE-MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ALU RRU POLE-MOUNTING BRACKET. ALU INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. FOR POLE DIAMETERS FROM 6 INCHES TO 15 INCHES, ALCATEL-LUCENT CAN SUPPLY A PAIR OF POLE MOUNTING METAL BANDS WITH BOLTING WELDMENT.

PROPOSED RRUS MOUNTING DETAIL 1

SCALE: N.T.S.

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SHEET TITLE

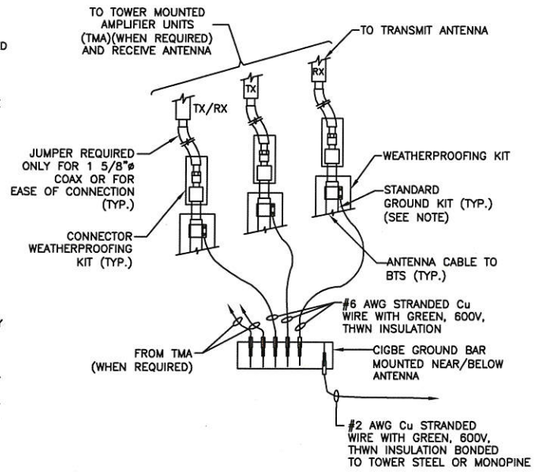
ANTENNA SCHEDULE & CONSTRUCTION DETAILS

SHEET NUMBER

C-3

GROUNDING NOTES:

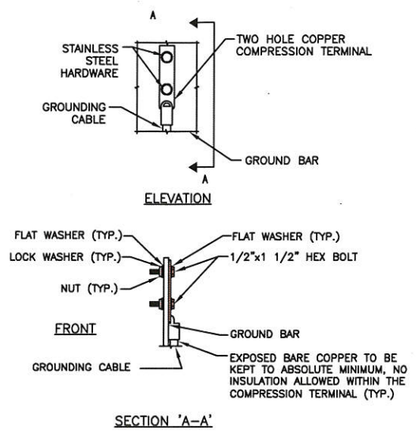
1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA 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 SMARTLINK 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

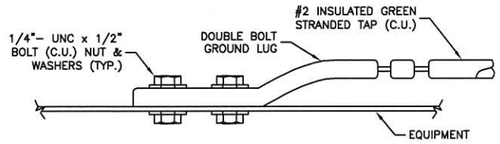


NOTES:

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

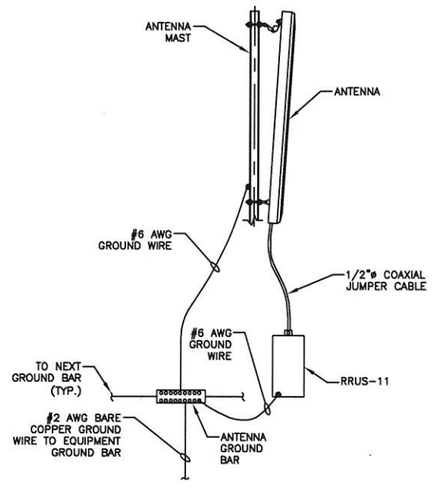
TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL — 2

SCALE: N.T.S.



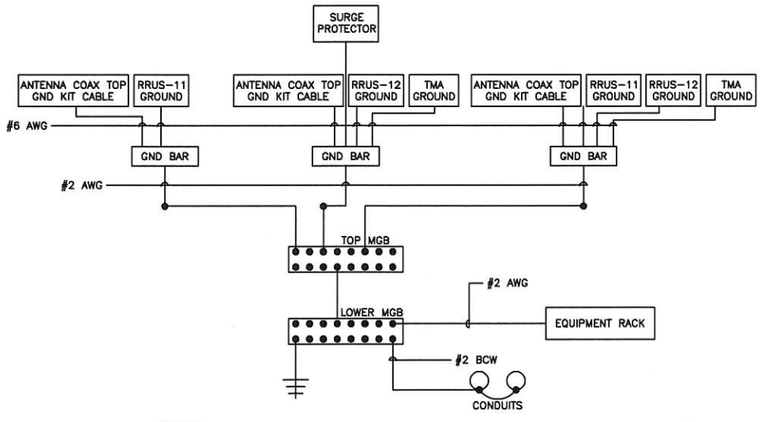
CONNECTION TO EQUIPMENT DETAIL — 3

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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ROBERT J. FOLEY, P.E.
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WINDHAM COUNTY

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

E-1

sitesafe
rf compliance experts

200 North Glebe Road, Suite 1000
Arlington, VA 22203-3728

Todd Oliver
Smartlink, LLC
Market Manager, NE
33 Boston Post Road, Suite 210
Marlborough, MA 01752

Reference: Smartlink LLC Site, 82 Tyrone Road, Pomfret, CT

Date: 6 May 2014

1. This letter will address the additional RF impact that adding AT&T LTE antennas to the referenced site. Attached are two documents which cover the modeled RF emissions from the site.

2. The first report, "RF Emissions Compliance Report," for the site complied by Sitesafe, uses the antenna patterns for the antennas at the site to calculate the General Public Maximum Permissible Exposure (MPE) on the ground. The total MPE of all the carriers is 0.585% (based on the General Public MPE) based on this modeling, with AT&T antennas emitting a maximum of 0.585% of the General Public MPE on the ground.

3. The second attachment has the calculations, used by the Connecticut Siting Council, which assumes the maximum antenna gain transmits in a spherical pattern where the worst case results would be at the base of the tower. That calculation, based on the existing antennas, gives a result of 15.23% of the General Public MPE, with the AT&T antennas emitting 15.23% of the General Public MPE on the ground, using the modeling predictions used by Connecticut Siting Council.

4. In either case, the site is compliant with FCC guidelines. If you have any questions regarding this site, the compliance report, please contact me at 719-434-0700 or dcotton@sitesafe.com.

David C. Cotton, Jr.
Licensed Professional Engineer (Electrical)
State of Connecticut, PEN.0027481
Date: 2014-May-07

Director, RF Compliance

Attachment 1

RF EMISSIONS COMPLIANCE REPORT

Smartlink LLC on behalf of AT&T Mobility, LLC

AT&T Mobility, LLC Site FA: 10035021
AT&T Mobility, LLC Site ID: CT1050
AT&T Mobility, LLC USID: 140501
AT&T Mobility, LLC Site Name: Pomfret
82 Tyrone Road
Pomfret, CT
5/6/2014

Report Status:

AT&T Mobility, LLC Is Compliant

Prepared By:

Sitesafe, Inc.

200 North Glebe Road, Suite 1000 Arlington, VA 22203

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

Engineering Statement in Re:
Electromagnetic Energy Analysis
AT&T Mobility, LLC
Pomfret, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

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

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

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

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

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

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

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

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

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

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of AT&T Mobility, LLC's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 0.585% of the maximum in any accessible area on the ground and

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

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 0.585% of the maximum in any accessible area up to two meters above the ground per OET-65; and

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

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

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

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

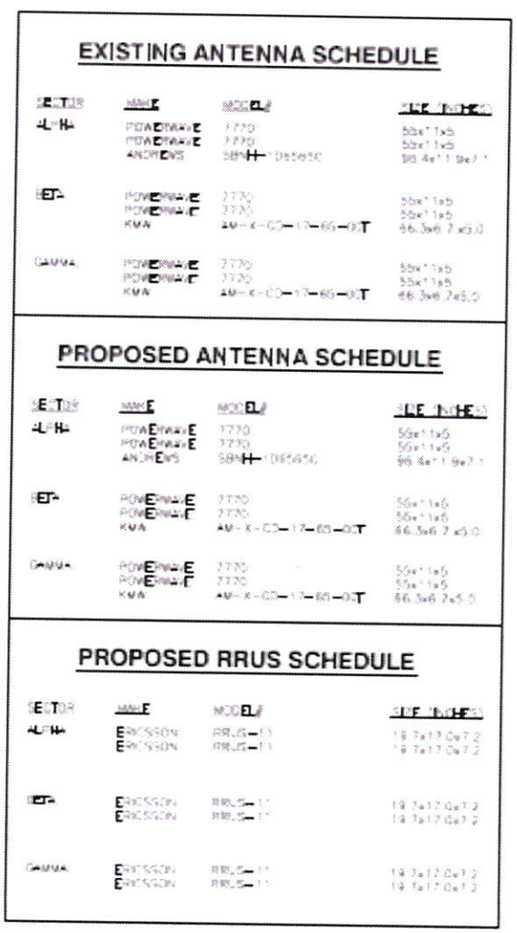
Note: Sitesafe has used data obtained from the "Connecticut Siting Council" to create this report. The manufacturer antenna patterns for AT&T Mobility, LLC were used to determine the RF emissions from the AT&T Mobility, LLC antennas. Sitesafe has also referenced the AT&T Mobility, LLC construction diagram for this site. The AT&T Mobility, LLC construction diagram references that RRU (Remote Radio Units) will be installed at the site with the existing antennas.

The following documents below were the primary sources of data used to create this report. The primary document was the "Connecticut Siting Council" document. The AT&T Mobility, LLC construction diagram was referenced when appropriate.

Connecticut Siting Council: AlphaExMPowDens 4-16-14

AT&T Mobility, LLC Construction Diagram: 10035021.AE201.140501 (CT1050) Dewberry Rev 1

[1] This Power Density information was taken from the Connecticut Siting Council database dated April 16, 2014.
[2] This Power Density information is based on worse case assumptions from AT&T's radio frequency engineers.



EXISTING ANTENNA SCHEDULE

PROPOSED ANTENNA SCHEDULE

PROPOSED RRUS SCHEDULE

AT&T Mobility, LLC
Pomfret
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.194 %
AT&T Mobility, LLC	0.21 %
AT&T Mobility, LLC	0.18 %
Composite Site MPE:	0.585 %

Attachment 2

Pomfret - 82 Tyrone Road

Power Density Calculations

Control Number	Site	Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/c	MHz	S	%MPE	Site Total
EM-CING-112-130110	Pomfret - 82 Tyrone Road	AT&T UMTS	2	565	152	0.0176	880	0.5867	3.00%	
EM-CING-112-130110	Pomfret - 82 Tyrone Road	AT&T UMTS	2	875	152	0.0272	1900	1.0000	2.72%	
EM-CING-112-130110	Pomfret - 82 Tyrone Road	AT&T GSM	1	283	152	0.0044	880	0.5867	0.75%	
EM-CING-112-130110	Pomfret - 82 Tyrone Road	AT&T GSM	4	525	152	0.0327	1900	1.0000	3.27%	
EM-CING-112-130110	Pomfret - 82 Tyrone Road	AT&T LTE	1	1771	154	0.0269	734	0.4893	5.49%	15.23%

Pinnacle Wireless

Pinnacle Wireless
Suite A Building 2
800 Marshall Phelps Road
Windsor, CT 06095

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

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Atlanta, GA 30328
(678) 467-7228
kclements@gpdgroup.com

GPD# 2012832.07
January 4, 2013

STRUCTURAL ANALYSIS REPORT WITH MODIFICATION DESIGN

AT&T DESIGNATION:	**Site USID:**	**71304**
	Site FA:	**10035021**
	Site Name:	**POMFRET-TYRONE RD**
	AT&T Project:	**MOD LTE 082712**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC** **85-mph with 0" ice** **28-mph with 1" ice**
SITE DATA:		**82 Tyrone Rd, Pomfret, CT 06258, Windham County** **Latitude 41° 53' 24.871" N, Longitude 71° 57' 20.199" W** **Market: New England** **150' Monopole**

Lauren Groppi,

GPD is pleased to submit this Structural Analysis Report with Modification Design to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

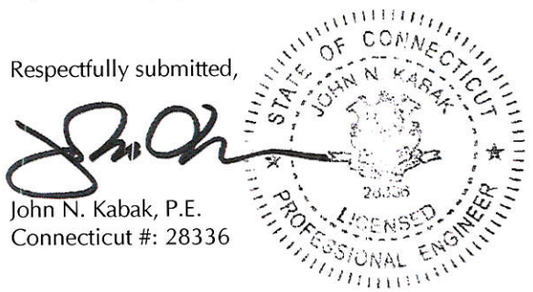
Analysis Results

Tower Stress Level with Proposed Equipment:	95.4%	Pass
Foundation Ratio with Proposed Equipment:	76.8%	Pass

Note: In order for this analysis results to be valid for the proposed, existing, and reserved loading in Appendix A the modifications referenced in the design drawings by GPD (Project #: 2012832.07, dated 1/4/2012) must be installed.

We at GPD appreciate the opportunity of providing our continuing professional services to you and Pinnacle Wireless. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



John N. Kabak, P.E.
Connecticut #: 28336

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to Pinnacle Wireless. This report was commissioned by Ms. Lauren Groppi of Pinnacle Wireless.

All proposed coax shall be internal to the monopole in order for the analysis results to be valid.

The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	95.4%	Pass
Anchor Rods	89.6%	Pass
Base Plate	74.6%	Pass
Flange Bolts	30.7%	Pass
Flange Plates	68.4%	Pass
Foundation	76.8%	Pass

ANALYSIS METHOD

TNX Tower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Equipment Modification Form	AT&T Internal Loading Document, uploaded 8/27/12	Siterra
Construction Drawings	Not Provided	N/A
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Modification Drawings	GPD Project #: 2012832.07, dated 1/4/12	GPD
Geotechnical Report	Dr. Clarence Welti, dated 5/15/09	Siterra
Previous Structural Analysis	GPD Project #: 2009013.07, dated 6/2/09	Siterra
Tower Mapping	GPD and Northeast Towers Inc, dated 12/3/08	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous analysis by GPD Job #: 2009013.07, dated 6/2/09, site photos, the provided equipment modification form and is assumed to be accurate.
12. The existing AT&T loading elevation found in the previous analysis by GPD Job #: 2009013.07, dated 6/2/09 was found to vary from the EMF and site photos. The existing AT&T loading elevation was based on the site photos.
13. The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

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

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	POMFRET-TYRONE RD
Site Number	71304
FA Number	10035021
Date of Analysis	1/4/2013
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	150'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	Dr. Clarence Welti	5/15/2009
Tower Mapping	GPD and Northeast Towers Inc	12/3/2008
Previous Structural Analysis	GPD Job #: 2009013.07	6/2/2009
Foundation Mapping	n/a	

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC
Location of Tower (County, State)	Windham, CT
Basic Wind Speed (mph)	85 - fastest
Ice Thickness (in)	1
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	95.4%
Anchor Rods (%)	89.6%
Foundation (%)	76.8%
Foundation Adequate?	Yes

The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

Steel Yield Strength (ksi)

Pole	65
Flange Plate	60
Flange Bolts	A325
Base Plate	60
Anchor Rods	75

Note: Steel grades assumded based on the previous analsysis

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	152	152	6	Panel	Powerwave	7770.00	30,150,270	1	Unknown	10'-8" Platform w/ Rails	12	Unknown	1-1/4"	Internal
AT&T Mobility	152	152	6	TMA	Powerwave	LGP21401				on the same mount				
AT&T Mobility	152	152	6	Diplexer	Powerwave	LGP21903				on the same mount				
Unknown	100	100	1	Dipole	Unknown	Dipole (2 element)				Flush mounted	1	Unknown	1/2"	Internal

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	152	154	1	Panel	Andrew	SBNH-1D6565C	30			on the existing mount	1	Conduit	2"	Internal
AT&T Mobility	152	154	2	Panel	KMW	AM-X-CD-17-65-00T	150,270			on the existing mount	1	Fiber Line	1/2"	Within Conduit
AT&T Mobility	152	152	6	RRU	Ericsson	RBS 6601				on the existing mount	2	DC Line	3/4"	Internal
AT&T Mobility	152	152	1	Surge Suppresser	Raycap	DC6-48-60-18-8F				on the existing mount				

Note: The proposed loading shall be in addition to the existing loading at the same elevation.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External

APPENDIX B

tnxTower Output File

tnxTower	Job	Page
GPD 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: 330.572.2100 FAX: 330.572.2101	71304 POMFRET-TYRONE RD	1 of 4
	Project 2012832.07	Date 18:20:26 01/04/13
	Client Pinnacle Wireless	Designed by jfields

Tower Input Data

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

Tower is located in Windham County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 28 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement*	*Total Number*		C_AA_A	*Weight*
				ft			ft^2/ft	*plf*
5/8" Step Bolts	A	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.04	1.00
						1/2" Ice	0.14	1.56
						1" Ice	0.24	2.73
						2" Ice	0.44	6.91
						4" Ice	0.84	22.58
Safety Line 3/8	A	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
LDF6-50A (1-1/4 FOAM)	A	No	Inside Pole	150.00 - 8.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
2" Flex Conduit	A	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.32
						1/2" Ice	0.00	0.32
						1" Ice	0.00	0.32
						2" Ice	0.00	0.32
						4" Ice	0.00	0.32
1/2" Fiber Cable	A	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
3/4" DC Power Line	A	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
LDF4P-50A (1/2 FOAM)	B	No	Inside Pole	100.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	2	No Ice	0.00	0.00
						1/2" Ice	0.00	1.30
						1" Ice	0.00	2.60
						2" Ice	0.00	3.90
						4" Ice	0.00	5.20
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	1.30
						1" Ice	0.43	2.60
						2" Ice	0.65	3.90
						4" Ice	1.10	5.20
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	1.30
						1" Ice	0.43	2.60
						2" Ice	0.65	3.90
						4" Ice	1.10	5.20

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
10'-8" Central Platform w/ 42" tower extension	C	None			0.0000	152.00	No Ice	43.32	43.32	2500.00
							1/2" Ice	46.28	46.28	3250.00
							1" Ice	49.24	49.24	4000.00
							2" Ice	55.16	55.16	5500.00
							4" Ice	67.00	67.00	8500.00
(2) 7770.00 w/Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
							1/2" Ice	6.31	4.73	107.08
							1" Ice	6.75	5.37	160.39
							2" Ice	7.66	6.70	289.46
							4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
							1/2" Ice	6.31	4.73	107.08
							1" Ice	6.75	5.37	160.39
							2" Ice	7.66	6.70	289.46
							4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
							1/2" Ice	6.31	4.73	107.08
							1" Ice	6.75	5.37	160.39
							2" Ice	7.66	6.70	289.46
							4" Ice	9.58	9.87	654.29
SBNH-1D6565C w/ Mount Pipe	A	From Centroid-Leg	4.00	2.00	0.0000	152.00	No Ice	11.45	9.12	82.70
							1/2" Ice	12.06	10.21	162.03
							1" Ice	12.69	11.18	254.15
							2" Ice	14.03	13.17	469.01
							4" Ice	17.05	17.35	1051.99
AM-X-CD-17-65-00T w/ Mount Pipe	B	From Centroid-Leg	4.00	2.00	0.0000	152.00	No Ice	11.31	9.10	105.82
							1/2" Ice	11.93	10.52	189.52
							1" Ice	12.55	11.60	285.59
							2" Ice	13.88	13.80	512.39
							4" Ice	16.88	18.41	1127.38
AM-X-CD-17-65-00T w/ Mount Pipe	C	From Centroid-Leg	4.00	2.00	0.0000	152.00	No Ice	11.31	9.10	105.82
							1/2" Ice	11.93	10.52	189.52
							1" Ice	12.55	11.60	285.59
							2" Ice	13.88	13.80	512.39

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
(2) LGP21401	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	16.88	18.41	1127.38
						No Ice	0.00	0.23	10.00
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
(2) LGP21401	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	1.12	135.29
						No Ice	0.00	0.23	10.00
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
(2) LGP21401	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	1.12	135.29
						No Ice	0.00	0.23	10.00
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
(2) LGP21903 Diplexer	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	1.12	135.29
						No Ice	0.00	0.18	10.00
						1/2" Ice	0.00	0.25	13.44
						1" Ice	0.00	0.32	16.93
						2" Ice	0.00	0.49	27.95
(2) LGP21903 Diplexer	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	0.94	71.54
						No Ice	0.00	0.18	10.00
						1/2" Ice	0.00	0.25	13.44
						1" Ice	0.00	0.32	16.93
						2" Ice	0.00	0.49	27.95
(2) LGP21903 Diplexer	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	0.94	71.54
						No Ice	0.00	0.18	10.00
						1/2" Ice	0.00	0.25	13.44
						1" Ice	0.00	0.32	16.93
						2" Ice	0.00	0.49	27.95
(2) RBS 6601	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	0.00	0.94	71.54
						No Ice	0.55	0.40	22.00
						1/2" Ice	0.70	0.52	34.88
						1" Ice	0.86	0.64	50.27
						2" Ice	1.19	0.91	89.38
(2) RBS 6601	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	1.97	1.55	206.33
						No Ice	0.55	0.40	22.00
						1/2" Ice	0.70	0.52	34.88
						1" Ice	0.86	0.64	50.27
						2" Ice	1.19	0.91	89.38
(2) RBS 6601	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	1.97	1.55	206.33
						No Ice	0.55	0.40	22.00
						1/2" Ice	0.70	0.52	34.88
						1" Ice	0.86	0.64	50.27
						2" Ice	1.19	0.91	89.38
DC6-48-60-18-8F Surge Suppression Unit	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	4" Ice	1.97	1.55	206.33
						No Ice	1.47	1.47	32.80
						1/2" Ice	1.67	1.67	50.52
						1" Ice	1.88	1.88	70.72
						2" Ice	2.33	2.33	119.24
4' Dipole	B	From Leg	3.00 0.00 0.00	0.0000	107.00	4" Ice	3.38	3.38	252.92
						No Ice	0.79	0.79	10.00
						1/2" Ice	1.03	1.03	16.34
						1" Ice	1.28	1.28	25.48
						2" Ice	1.81	1.81	52.76
						4" Ice	3.11	3.11	147.65
4' Dipole	B	From Leg	3.00	0.0000	97.00	No Ice	0.79	0.79	10.00

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 0.00			1/2" Ice 1" Ice 2" Ice 4" Ice	1.03 1.28 1.81 3.11	1.03 1.28 1.81 3.11	16.34 25.48 52.76 147.65

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.00	10'-8" Central Platform w/ 42" tower extension	33	44.523	2.9349	0.0032	7674
107.00	4' Dipole	33	22.218	2.0292	0.0002	3297
97.00	4' Dipole	33	18.203	1.8379	0.0002	3183

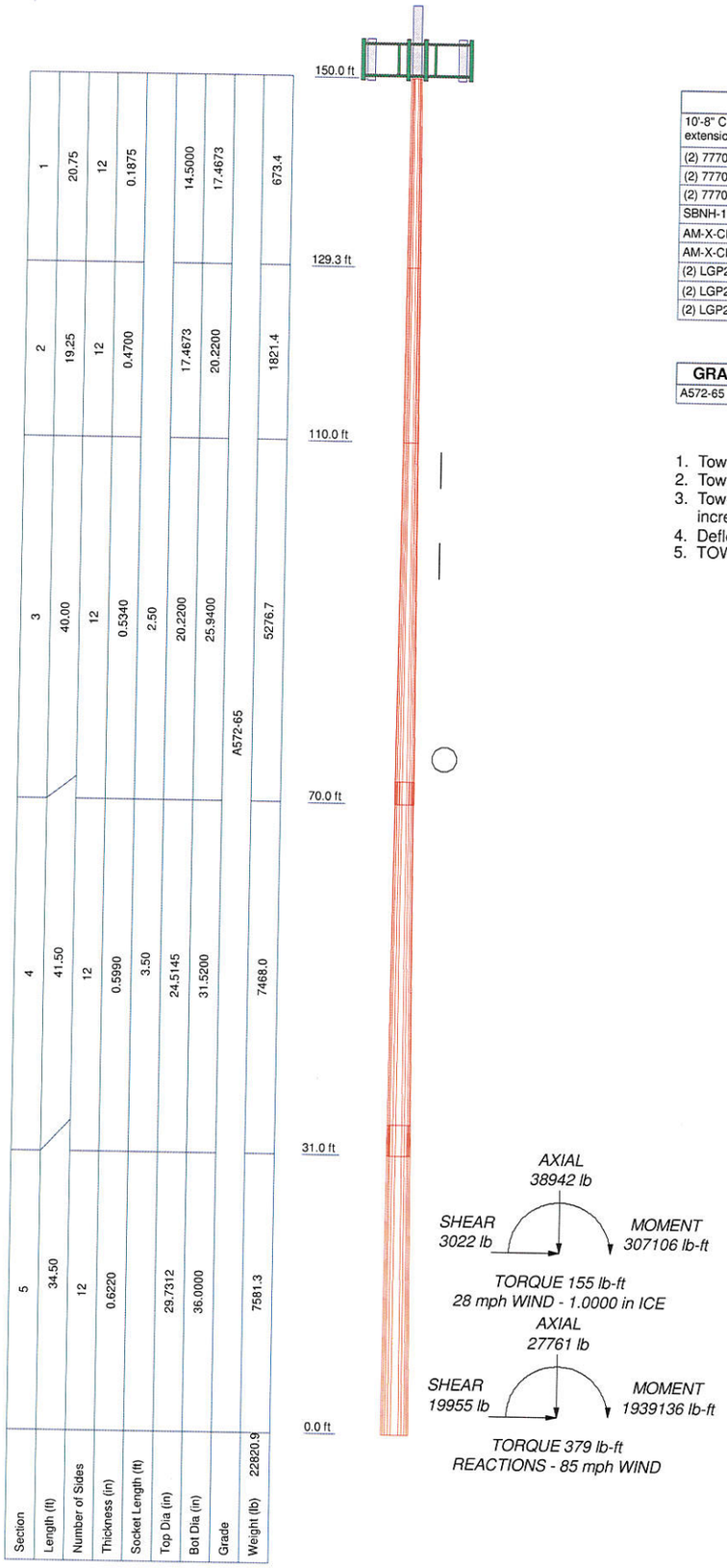
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 129.25	Pole	TP17.4673x14.5x0.1875	1	-3473.10	542361.69	78.5	Pass
L2	129.25 - 110	Pole	TP20.22x17.4673x0.47	2	-5418.02	*	84.6*	Pass
L3	110 - 70	Pole	TP25.94x20.22x0.534	3	-10791.30	*	89.5*	Pass
L4	70 - 31	Pole	TP31.52x24.5145x0.599	4	-18678.40	*	87.7*	Pass
L5	31 - 0	Pole	TP36x29.7312x0.622	5	-26914.60	*	95.4*	Pass
							Summary	
						Pole (L5)	95.4*	Pass
						RATING =	**95.4***	**Pass**

*See Appendix E for the modification calculations.

APPENDIX C

Tower Elevation Drawings



Section	1	2	3	4	5
Length (ft)	20.75	19.25	40.00	41.50	34.50
Number of Sides	12	12	12	12	12
Thickness (in)	0.1875	0.4700	0.5340	0.5990	0.6220
Socket Length (ft)			2.50	3.50	
Top Dia (in)	14.5000	17.4673	20.2200	24.5145	29.7312
Bot Dia (in)	17.4673	20.2200	25.9400	31.5200	36.0000
Grade			A572-65		
Weight (lb)	673.4	1821.4	5276.7	7468.0	7581.3

Total Weight (lb): 22820.9

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10'-8" Central Platform w/ 42" tower extension	152	(2) LGP21903 Diplexer	152
(2) 7770.00 w/Mount Pipe	152	(2) LGP21903 Diplexer	152
(2) 7770.00 w/Mount Pipe	152	(2) LGP21903 Diplexer	152
(2) 7770.00 w/Mount Pipe	152	(2) RBS 6601	152
SBNH-1D6565C w/ Mount Pipe	152	(2) RBS 6601	152
AM-X-CD-17-65-00T w/ Mount Pipe	152	(2) RBS 6601	152
AM-X-CD-17-65-00T w/ Mount Pipe	152	DC6-48-60-18-8F Surge Suppression Unit	152
(2) LGP21401	152	4' Dipole	107
(2) LGP21401	152	4' Dipole	97
(2) LGP21401	152		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

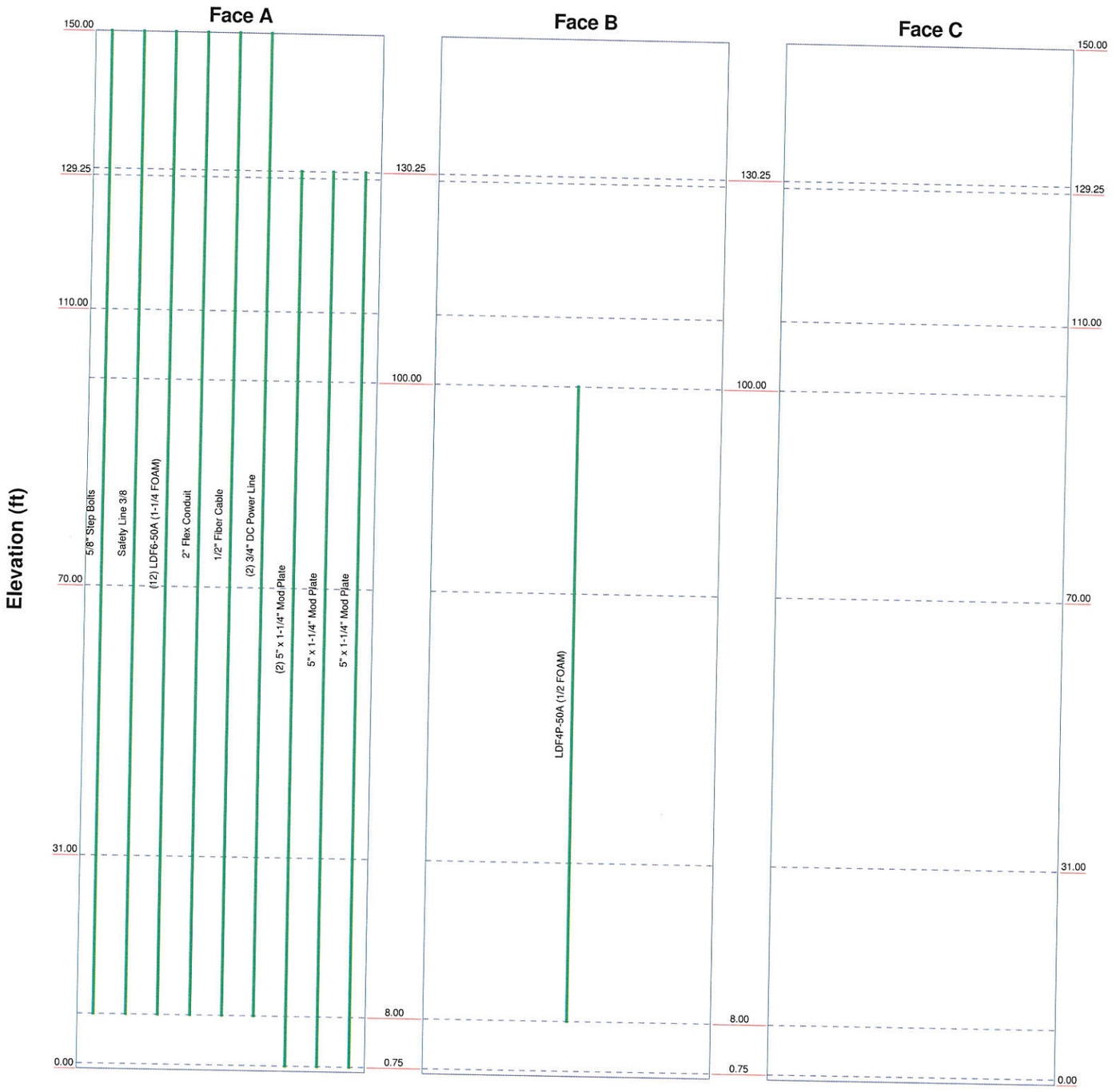
1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 78.5%

GPD
520 South Main Street, Suite 2531
Akron, OH 44311
Phone: 330.572.2100
FAX: 330.572.2101
Consulting Engineers

Job: 71304 POMFRET-TYRONE RD			
Project: 2012832.07			
Client: Pinnacle Wireless	Drawn by: jfields	App'd:	
Code: TIA/EIA-222-F	Date: 01/04/13	Scale: NTS	
Path: C:\Users\jfields\Desktop\Drop\TNX\2012832.07\71304.eri		Dwg No. E-1	

Feedline Distribution Chart
0' - 150'

Round | Flat | App In Face | App Out Face | Truss Leg



GPD
Consulting Engineers
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Phone: 330.572.2100
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Job: 71304 POMFRET-TYRONE RD			
Project: 2012832.07			
Client: Pinnacle Wireless	Drawn by: jfields	App'd:	
Code: TIA/EIA-222-F	Date: 01/04/13	Scale: NTS	
Path: C:\Users\jfields\Desktop\Drop\TNX\2012832.07\71304.er		Dwg No. E-7	

APPENDIX D

Base Plate & Anchor Rod Calculations

GPD GROUP

Anchor Rod and Base Plate Stresses
71304 POMFRET-TYRONE RD
2012832.07

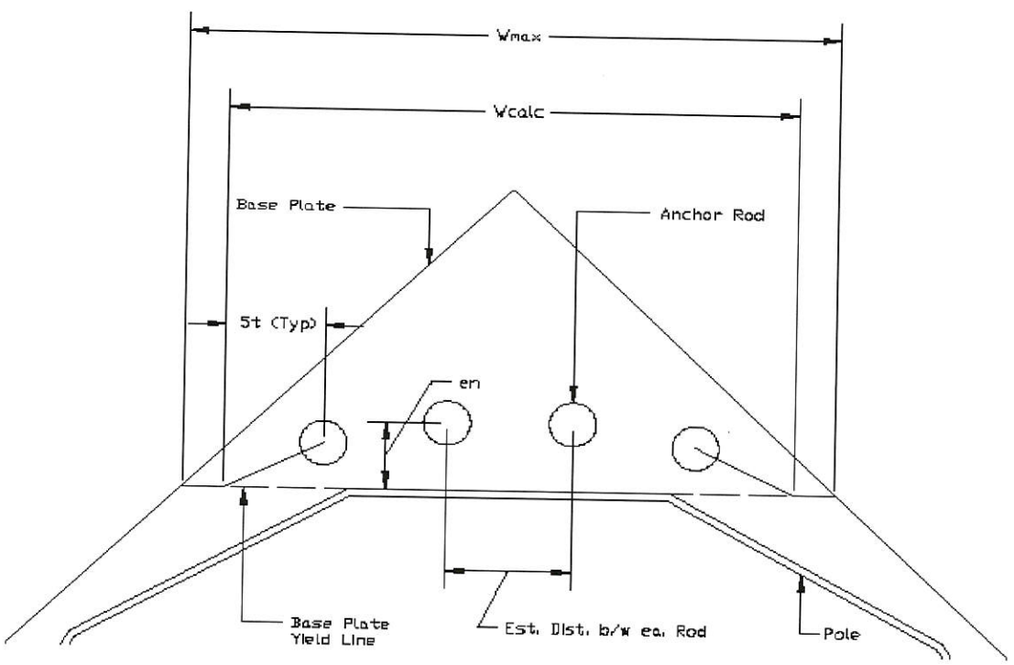
*Overturning Moment =	1176.39	k*ft
Axial Force =	19.22	k
Shear Force =	19.96	k

Acceptable Stress Ratio =	100.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces in the analysis.

Anchor Rods		
Pole Diameter =	36	in
Number of Rods =	8	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	44	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	157.81	kips
Max Compression on Rod =	162.61	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**80.9%**	**OK**

Base Plate		
Plate Strength (Fy) =	60	ksi
Plate Thickness =	2.5	in
Plate Width =	44	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	31.000	in
w_{max} =	26.225	in
w =	26.23	in
S =	27.32	in^3
fb =	44.76	ksi
Fb =	60	ksi
Base Plate Capacity =	**74.6%**	**OK**



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GPD GROUP
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Job #: 2012832.07
Sheet No 1 Of 1

Calculated By: JDF Date: 1/4/2013
Checked By: Date:

MODIFIED ANCHOR ROD CALCULATIONS

Moment from RISA (M) =	1939.14 kip-ft	Code	TIA/EIA-222-F		
Axial from RISA (P) =	27.76 kip	ASIF =	1.33		
Shear from RISA (V) =	19.96 kip	Allowable Stress Ratio =	105%		
Inner Bolt Diameter =	2.25 in				
Number Inner Bolts (N_{inner}) =	8	Inner Bolt Circle (BC_{inner}) =	44 in		
Inner Bolt Area (A_{inner}) =	3.98 in^2	Total Area ($A_{tot.in}$) =	31.81 in^2	Axial, Inner Bolts ($P*\eta_{in}$) =	19.22 kips
Inner Bolt MOI ($I_{o.inner}$) =	1.26 in^4	Percent Total Area (η_{in}) =	69.2%	Shear, Inner Bolts ($P*\eta_{in}$) =	19.96 kips
Outer Bolt Diameter =	1.5 in				
Number Outer Bolts (N_{outer}) =	8	Outer Bolt Circle (BC_{outer}) =	53.17 in		
Outer Bolt Area (A_{outer}) =	1.77 in^2	Total Area ($A_{tot.out}$) =	14.14 in^2	Axial, Outer Bolts ($P*\eta_{out}$) =	8.54 kips
Outer Bolt MOI ($I_{o.outer}$) =	0.25 in^4	Percent Total Area (η_{out}) =	30.8%		

I_{inner} =	7707.75 $in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	4997.80 $in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + c$
I_{tot} =	12705.55 $in.^4$	$(I_{inner} + I_{outer})$
F_{inner} =	162.61 kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} + P*\eta_{in}/N_{inner})$
F_{outer} =	87.11 kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} + P*\eta_{out}/N_{outer})$

Rnt.outer / Ω= 72.89 kips

Modified Anchor Rod Rating
% = 89.6% OK

APPENDIX E

Modification Calculations

Reinforced Monopole Analysis
71304 POMFRET-TYRONE RD
2012832.07

Code =	TIA/EIA-222-F
AISF=	1.333
Max Stress Ratio=	1.05
# of Sides =	12

Geometry									Reactions				Output	Capacities		
Shape	Quantity	Section	Elevation (ft)	Pole Flat-Flat (in)	Wall t (in)	Fy (ksi)	K	Conn.Spacing (in)	Moment (k-ft)	Axial (k)	Shear (k)	Torsion (k-ft)	Equivalent t (in)	Pole	Reinforcment	Pass/Fail
Plate 3x1.25	4	L2	110	20.22	0.1875	65	0.8	18	305.86	5.42	9.2	0.26	0.470	50.0%	84.6%	Pass
Plate 4x1.25	4	L3	70	25.94	0.25	65	0.8	18	726.65	10.79	13.25	0.03	0.534	63.0%	89.5%	Pass
Plate 5x1.25	4	L4	31	31.52	0.3125	65	0.8	18	1301.94	18.68	16.97	0.03	0.599	68.0%	87.7%	Pass
Plate 5x1.25	4	L5	0	36	0.375	65	0.8	18	1939.14	26.91	17.98	0.38	0.622	74.4%	95.4%	Pass

APPENDIX F

Flange Plate & Flange Bolt Calculations

GPD GROUP

Existing Flange Connection @ 110'
71304 POMFRET-TYRONE RD
2012832.07

*O.T. Moment =	82.3267	K*ft
Axial =	2.09	kips
Shear =	9.20	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio	
=	105.0%

Flange Bolts

# Bolts =	12	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	23	in
Bolt Diameter =	1	in

Tension & Shear (ASD, Section J3.5)

F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.98	ksi
Applied Shear =	0.77	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.95	ksi
Allowable Bolt Stress =	58.60325	ksi
B =	46.03	kips

Prying Action Check

N/A, top flange thickness > tc

Max Comp. on Bolt =	14.48	kips
Max Tension on Bolt =	14.13	kips
Shear Capacity =	3.5%	
Tensile Capacity =	30.7%	
Bolt Capacity =	**30.7% OK**	

Pole Information

Shaft Diam. (Upper) =	20.22	in
Thickness (Upper)=	0.1875	in
# of Sides (Upper) =	12	
F_y (Upper) =	65	ksi
Shaft Diam. (Lower) =	20.22	in
Thickness (Lower)=	0.25	in
# of Sides (Lower) =	12	
F_y (Lower) =	65	ksi

Upper Flange Plate

Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	26	in
wcalc =	10.96	in
wmax =	15.95	in
w =	10.96	in
S =	1.83	in^3
f_b =	15.29	ksi
F_b =	60	ksi
UP Capacity =	**25.5% OK**	

Lower Flange Plate

Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	26	in
wcalc =	10.96	in
wmax =	15.95	in
w =	10.96	in
S =	1.83	in^3
f_b =	15.29	ksi
F_b =	60	ksi
LP Capacity =	**25.5% OK**	

UpperStiffeners	
Configuration =	None

Lower Stiffeners	
Configuration =	None

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Job #: 2012832.07
Sheet No 1 Of 1

Calculated By: JDF Date: 1/4/2013
Checked By: AW Date: 1/4/2013

BOLT AND BRIDGE STIFFENER CALCULATIONS

@ 110'

Tower Type = Monopole
Acceptable Sress Ratio = 105.0%
Code = TIA/EIA-222-F
ASIF = 1.33

Moment from RISA (M) = 305.86 kip-ft
Axial from RISA (P) = 5.42 kip

Inner Bolt Diameter = 1 in
Inner Bolt Area (A_{inner}) = 0.79 in^2
Inner Bolt MOI ($I_{o.inner}$) = 0.05 in^4
Number Inner Bolts (N_{inner}) = 12

Inner Bolt Circle (BC_{inner}) = 23 in
Total Area ($A_{tot.in}$) = 9.42 in^2
Percent Total Area (η_{in}) = 38.6%

Axial, Inner Bolts ($P*\eta_{in}$) = 2.09 kips

Bridge Stiffener Width = 3.00 in
Bridge Stiffener Thickness = 1.25 in
Bridge Stiffener Unbraced Length = 12.00 in
Bridge Stiffener Area (A_{pl}) = 3.75 in^2
Bridge Stiffener Average MOI (I_o) = 1.65 in^4
Number Bridge Stiffeners (N_{pl}) 4

Bridge Stiffener Circle (BC_{pl}) = 30 in
Total Area ($A_{tot.pl}$) = 15.00 in^2
Percent Total Area (η_{pl}) = 61.4%

Axial, Bridge Stiffeners ($P*\eta_{pl}$) = 3.33 kips

I_{inner} =	623.80 $in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	0.00 $in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + N_{outer}*I_{o.outer})$
I_{pl} =	1694.10 $in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	2317.90 $in.^4$	$(I_{inner} + I_{outer} + I_{pl})$

$P_{u.t.inner}$ =	14.13 kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.pl}$ =	88.24 kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	89.90 kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
ASIF*Pnt.bolt / Ω =	46.03 kips	
Bolt Rating =	30.7% OK	

Number Bridge Stiffeners (N_{pl})	4	
f_y =	65 ksi	
f_u =	80 ksi	
Plate Width =	3.00 in	
Plate Thickness =	1.25 in	
Plate Unbraced Length =	12.00 in	
Plate Area (A_{pl}) =	3.75 in^2	
Upper Pole Diameter =	20.22 in	
Flange Plate Diameter =	26.00 in	
Flange Plate to Bridge Stiffener Gap =	2.11 in	
Bridge Stiffener Circle (BC_{pl}) =	30.00 in	
Bridge Stiffener MOI (I_o) =	2.81 in^4	
I_{pl} =	1694.10 $in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
Axial Capacity Required =	89.90 kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
Load Eccentricity, e =	6.50 in (from weld to center of stiffener area)	
Moment Capacity Required =	0.00 kip-in	
E =	29000 ksi	
K =	1.00	
r_{min} =	0.36	
KL/r_{min} =	33.255	
F_e =	258.81 ksi	
F_{cr} =	58.51 ksi	
Pnc / Ω =	131.39 kips	
Pnt / Ω =	145.96 kips	
S =	1.88 in^3	
Z =	2.81 in^3	
$L_b d/t^2$ =	23.04	
M_{nLTB} =	n/a	
M_p =	182.81 kip-in	
Mn/ Ω =	109.47 kip-in	
Stiffener Rating =	68.4% OK	

Bridge Stiffener Welds	Analysis
Bridge Stiffener Height =	27.00 in
a value (from AISC Table 8-4) =	0.241
C value (from AISC Table 8-4) =	3.31
Fillet Size =	0.1875 in
Weld Rating =	67.1% OK

APPENDIX G

Foundation Calculations

GPD GROUP

Mat Foundation Analysis
71304 POMFRET-TYRONE RD
2012832.07

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1

Tower Reactions		
Moment, M	1939.14	k-ft
Axial, P	27.76	k
Shear, V	19.96	k

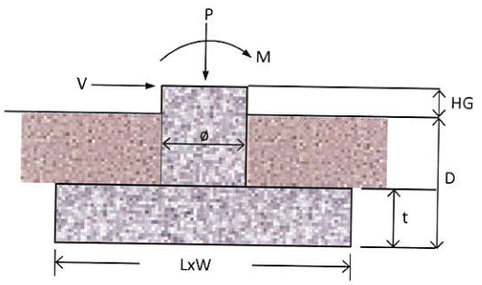
Pad & Pier Geometry		
Pier Width, ø	5	ft
Pad Length, L	22	ft
Pad Width, W	22	ft
Pad Thickness, t	3	ft
Depth, D	8	ft
Height Above Grade, HG	0.5	ft

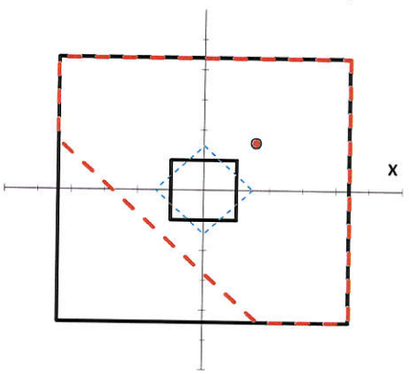
Pad & Pier Reinforcing		
Rebar Fy		ksi
Concrete Fc'		ksi
Clear Cover		in
Reinforced Top & Bottom?		
Pad Reinforcing Size		
Pad Quantity Per Layer		
Pier Rebar Size		
Pier Quantity of Rebar		

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	28	°
Bearing Type	Gross	
Ultimate Bearing	12	ksf
Water Table Depth	1	ft
Frost Depth	4	ft

Bearing Summary			Load Case
Qxmax	1.86	ksf	1D+1W
Qymax	1.86	ksf	1D+1W
Qmax @ 45°	2.44	ksf	1D+1W
$Q_{(all)\ Gross}$	6.00	ksf	
Controlling Capacity	**40.7%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	1.95	≥1.5	1D+1W
FS(ot)y	1.95	≥1.5	1D+1W
Controlling Capacity	**76.8%**	**Pass**	





APPENDIX H

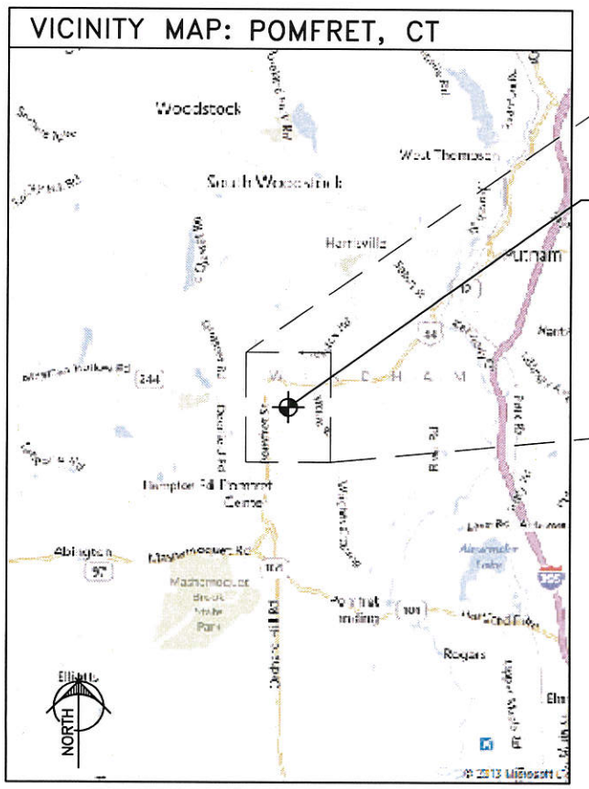
Modification Drawings

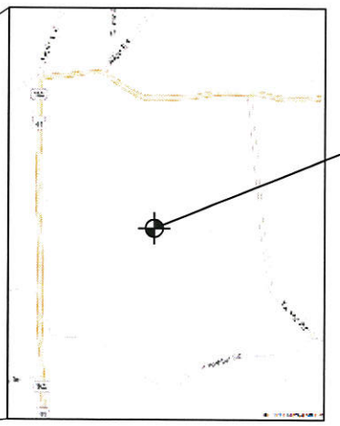
POMFRET-T

USID #:

150' MON

VICINITY MAP: POMFRET, CT





AERIAL VIEW

GENERAL NOTES

1. THE FOLLOWING DRAWINGS REPRESENT MODIFICATIONS TO THE EXISTING TOWER. THE MODIFICATIONS ARE BASED ON GPD GROUP STRUCTURAL REPORT (PROJECT #: 2012801.71, DATED NOVEMBER 7, 2012). ALL MODIFICATIONS MUST BE INSTALLED TO BRING THE TOWER INTO CONFORMANCE WITH TIA/EIA-222-F, 2003 IBC, ASCE 7-05, AND 2005 CTBC.

2. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222-F, 2003 IBC, ASCE 7-05, 2005 CTBC, AWS, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.

3. ALL ORIGINAL TOWER INFORMATION WAS OBTAINED IN THE FORM OF A TOWER MAPPING BY GPD AND NORTHEAST TOWER INC. (DATED DECEMBER 3, 2008). CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED TOWER DOCUMENTS.

4. THIS DESIGN ASSUMES THE TOWER AND FOUNDATIONS HAVE BEEN WELL MAINTAINED, IN GOOD CONDITION, AND ARE WITHOUT DEFECT. BENT MEMBERS, CORRODED MEMBERS, LOOSE BOLTS, CRACKED WELDS AND OTHER MEMBER DEFECTS HAVE NOT BEEN CONSIDERED. THE TOWER IS ASSUMED TO BE PLUMB AND THE SITE IS ASSUMED TO BE LEVEL. THIS DESIGN IS BEING PROVIDED WITHOUT THE BENEFIT OF A CONDITION ASSESSMENT BY GPD GROUP. **CONTRACTOR SHALL COMMISSION A COMPLETE CONDITION ASSESSMENT PRIOR TO ORDERING ANY REINFORCING MATERIALS. CONTRACTOR SHALL SUPPLY CONDITION ASSESSMENT TO ENGINEER FOR REVIEW.** SEE CONTRACTOR NOTES.

5. MANUFACTURER TOLERANCES, FIELD ADJUSTMENTS, INCORRECT STACKING, AND TEMPERATURE CAN CAUSE DIMENSION DISCREPANCIES. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS. ALL FIELD MEASUREMENTS MUST BE REPORTED TO ENGINEER.

6. ALL NEW STEEL SHALL BE HOT DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.

7. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).

8. CAULKING SHALL BE PROVIDED AROUND PERIMETER OF ANY AND ALL MODIFICATION MEMBERS TO ENSURE COMPLETE SEAL BETWEEN EXISTING STRUCTURE AND REINFORCING MEMBERS. SEALANT IS TO BE EXTERIOR GRADE, PAINTABLE SILICONE CAULKING AS MANUFACTURED BY DOW AND ACCEPTABLE TO GPD.

9. LOADINGS:

WIND LOADS:
FASTEST MILE WIND SPEED (PER: TIA/EIA-222-F, 2003 IBC, ASCE 7-05, & 2005 CTBC) 85 MPH
(WINDHAM COUNTY, CONNECTICUT)

ICE LOADS:
1" RADIAL BASE ICE
FASTEST MILE WIND SPEED (CONCURRENT W/ ICE) 28 MPH

10. STRUCTURAL STEEL:

SPECIFICATIONS
LATEST EDITION OF AISC

MATERIAL

PLATES	ASTM A572 (GR 65)
BRIDGE STIFFENERS	ASTM A572 (GR 65)
ONE SIDE BOLTS	AJAX 20MM (PC8.8) W/ HIGH STRENGTH SLEEVE (Fu=120KSI)
NUTS	ASTM A194-2H
WASHERS	ASTM F436
PIPE	ASTM A53-B (GR 42)
ANCHOR RODS	ASTM F1554 (GR 105)
ANCHOR ROD BRACKETS	ASTM A572 (GR 65)
HOT DIPPED GALVANIZING	ASTM A123
WELDS	E70XX
PAINT	NEW STEEL TO BE PAINTED TO MATCH EXISTING TOWER
EPOXY	HILTI HIT-RE 500-SD (ICC#: ESR-2322)

11. ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.

12. ALL SUBSTITUTES PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.

13. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

14. UNLESS NOTED OTHERWISE, ALL NEW MEMBERS SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.

15. THE ENGINEER (GPD GROUP) SHALL MAKE POST INSTALLATION OBSERVATION FOR TOWER AND FOUNDATION. CONTRACTOR SHALL COORDINATE THE ON-SITE INSTALLATION OBSERVATION W/ ENGINEER (GPD GROUP) AT LEAST 5 BUSINESS DAYS PRIOR TO THE CONCRETE POUR FOR EACH FOUNDATION MODIFICATION. CONTRACTOR SHALL COORDINATE W/ENGINEER (GPD GROUP) WITHIN 72 HOURS AFTER 100% COMPLETION OF THE TOWER MODIFICATION INSTALLATION. INSTALLATION OF PROPOSED LOADING WITHOUT ENGINEER APPROVAL IS PROHIBITED. INSTALLATION OF THE PROPOSED LOADING IS BY OTHERS, AND IS BEYOND THE SCOPE OF THESE DRAWINGS.

CONTRACTOR NOTES

1. ALL CONTRACTORS AND LOWER TIER CONTRACTORS MUST ACKNOWLEDGE IN WRITING TO TOWER OWNER AND GPD GROUP THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW TOWER OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR TOWER OWNER AND GPD GROUP ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM LOWER TIER SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO TOWER OWNER AND GPD GROUP.

2. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, GPD GROUP SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.

3. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE TOWER OWNER AND ENGINEER.

4. THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.

5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS AND PRECAUTIONS IN CONNECTION WITH THIS WORK.

6. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING; ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO ORDERING ANY MATERIAL AND MUST RESOLVE ALL ISSUES WITH THE OWNER PREVENTING A CONTINUOUS INSTALLATION. CONTRACTOR SHALL NOTE ALL ANTENNAS, MOUNTS, COAX, LIGHTING, CLIMBING SUPPORTS, STEP BOLTS, PORT HOLES, AND ANY OTHER TOWER APPURTENANCES IN THE REGION OF THE MODIFICATIONS. SEE GENERAL NOTES #4 AND #5 THIS SHEET.

CONTINUED CONTRA

7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING AND ANY OTHER TOWER APPURTENANCE THAT MAY INTERFERE APPURTENANCES MUST BE REPLACED AND/OR RESTORED DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN

8. SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CAR THE TOWER OWNER IN WRITING.

9. CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF TI THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND O STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF T

10. WORK SHALL ONLY BE PERFORMED DURING CALM CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL T SHORING, AND ALL SHORING OF SURROUNDING BUILDINGS, PAD ALL SHORING, TEMPORARY BRACING, AND TEMPORARY SUI CONTRACTOR.

11. CONTRACTOR SHALL VERIFY MONOPOLE IS SET PROPERL RESTING POSITION BEFORE FINAL CRITICAL FIELD MEASUREMI MATERIAL. ANY OBJECTS/STEP BOLTS THAT PREVENT TOWER FR TO THE ENGINEER IMMEDIATELY.

FOUNDATION

1. CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS CONSTRUCTION IN ORDER TO COORDINATE THE VISUAL INSPECTI

-STEPHANIE WENDEROTH (NEXLINK GLOBAL SERVICES) 67E
-KEVIN CLEMENTS (GPD GROUP) 678-467-7228
-BRIAN SMITH (GPD GROUP) 216-927-8648
-JEREL FIELDS (GPD GROUP) 317-295-3186

2. EXISTING FOUNDATION INFORMATION BASED UPON A ENGINEERING (DATED APRIL 1, 2000). CONTRACTOR SHALL REFERENCED FOUNDATION DOCUMENT. IF EXISTING FOUNDATION DOCUMENT, CONTACT ENGINEER AND TOWER OWNER IMMEDIATEL

3. CONCRETE WORK SHALL BE IN ACCORDANCE WITH LOCAL OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUIL CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVAT SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.

4. MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUI 1/3 CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. MAXI DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOL HONEYCOMBS OR VOIDS.

5. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBED

6. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENG

7. ALL FOUNDATIONS SHALL REST ON AND AGAINST FIRM UNI MATTER, AND FORM WORK. CONTRACTOR SHALL COMPACT SUB

8. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO T UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT S INDICATED.

9. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH MIN REINFORCING SHALL BE EQUALLY SPACED UNLESS NOTED OTHE

10. PROVIDE #7 2'-6" X 2'-6" CORNER BARS AT ALL PL CHANGES.

11. SOIL INFORMATION IS BASED ON A GEOTECHNICAL REPORT 2009). IF SOIL CONDITIONS ENCOUNTERED ARE DIFFERENT NOTIFY ENGINEER IMMEDIATELY.

A) ALLOWABLE BEARING = 6,000 PSF AT 7'
B) UNIT WEIGHT OF SOIL = 120 PCF
C) GROUND WATER = 1'-0"

12. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WIT CONTRACTOR SHALL IMPLEMENT ALL RECOMMENDATIONS CON REPORT.

13. BACKFILL SHALL BE CLEAN, FREE OF DEBRIS, AND O CLEAN FILL AS REQUIRED. (MIN. UNIT WEIGHT = 120 PCF).

14. ALL BACKFILL SHALL BE CONTROLLED-COMPACTED, PLA CONDITIONED TO WITHIN THREE PERCENT OF OPTIMUM MOISTI PROCTOR MAXIMUM DRY DENSITY PER ASTM D1557.

15. CARE SHALL BE TAKEN DURING INSTALLATION OF DOWELS ANCHOR BOLTS ARE NOT DAMAGED. CONTRACTOR SHALL U NON-DESTRUCTIVE MEANS TO LOCATE EXISTING REINFORCING S IMMEDIATELY IF EXISTING STEEL IS ENCOUNTERED.

16. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH AND RECOMMENDATIONS.

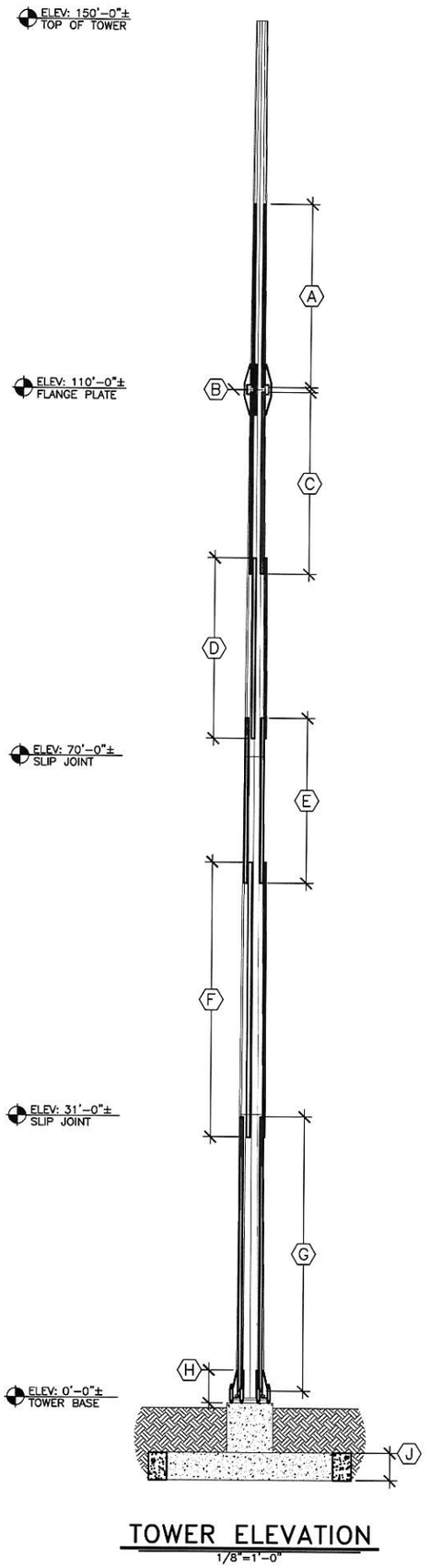
17. PRIOR TO APPLICATION OF BONDING AGENT, CLEAN FACE FREE FROM ALL DIRT, DEBRIS, AND FOREIGN MATTER.

18. CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CON FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GI REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE A

19. ALL GROUNDING SHALL ACHIEVE 5Ω OR LESS RESIS ENCOUNTERED SHALL BE RELOCATED 3'-0" BEYOND FOUNDAT AND COORDINATED WITH OWNER. GROUNDING DESIGN AND EN DESIGN DRAWINGS AND IS THE RESPONSIBILITY OF THE CONTRA

20. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING EXCAVATION. IF NECESSARY UTILITIES SHALL BE RELOCATED PR FROM THE TOWER OWNER AND EOR MUST BE OBTAINED TO EN

21. EQUIPMENT PAD, SHELTER, AND ICE BRIDGE SUPPORT IS COMMISSION. CONTRACTOR SHALL TAKE GREAT CARE AND ALL REQUIRED.



TOWER ELEVATION
1/8"=1'-0"

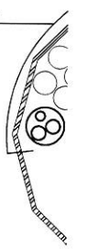
ANTENNA SCHEDULE

ELEVATION	STATUS	ANTENNA	MOUNT	COAX
152'-0"	EXISTING	(6) 7770.00	(1) 10'-8" PLATFORM W/ RAILS	(12) 1-1/
	EXISTING	(6) LGP21401		
	EXISTING	(6) LGP21903		
	PROPOSED	(1) SBNH-1D6565C		(1) 2" COND
	PROPOSED	(2) AM-X-CD-17-65-00T		(1) 1/2" FIE
	PROPOSED	(6) RBS 6601		(2) 3/4" D
	PROPOSED	(1) DC6-48-60-18-8F		
100'-0"	EXISTING	(1) DIPOLE (2 ELEMENTS)	(1) FLUSH MOUNT	(1) 1/2"

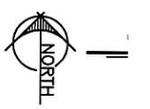
MODIFICATION S

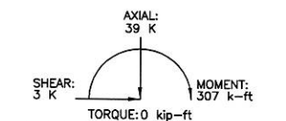
SYMBOL	ELEVATION	MEMBER TYPE	EXISTING MEMBER	NEW MEMBE
A	110'-3"± TO 130'-3"±	FLAT PLATES	12 SIDED MONOPOLE	3"x1-1/4" TH PLATE
B	110'-0"±	BRIDGE STIFFENERS	–	1-1/4" THICK
C	90'-0"± TO 109'-9"±	FLAT PLATES	12 SIDED MONOPOLE	4"x1-1/4" TH PLATE
D	72'-0"± TO 91'-9"±	FLAT PLATES	12 SIDED MONOPOLE	4"x1-1/4" TH PLATE
E	56'-3"± TO 74'-3"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" TH PLATE
F	28'-6"± TO 58'-6"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" TH PLATE
G	0'-9"± TO 30'-9"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" TH PLATE
H	0'-0"± TO 3'-0"±	ANCHOR RODS W/BRACKETS	(8) 2-1/4"ø RODS	(8) 1-1/2"ø R W/BRACKET
J	GRADE	FOUNDATION COLLAR	PAD & PIER	CONCERT COL

(EXISTING)
(12) 1-1/4" COAX TO 152 FT LEVEL
(PROPOSED)
(1) 2" CONDUIT TO 152 FT LEVEL
(1) 1/2" FIBER CABLE TO 152 FT LEVEL
(2) 3/4" DC CABLE TO 152 FT LEVEL

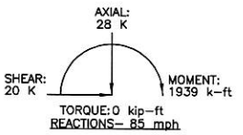


NOTE: FLAT NUMBERS DEPICTED IN THIS DRAWING MAY VARY FROM THE NUMBERING IN THE FIELD. CONTRACTOR MAY ADJUST FLAT NUMBERS TO MATCH EXISTING FIELD CONDITIONS. MODIFICATIONS SHALL BE INSTALLED IN THE APPROPRIATE ORIENTATION AND/OR LOCATION REGARDLESS OF THE NUMBERING SHOWN ON THE DRAWINGS.

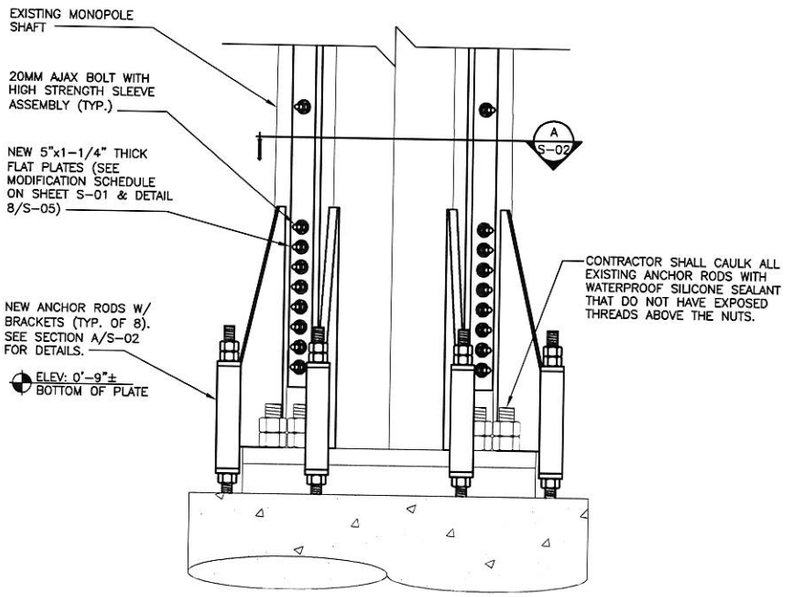




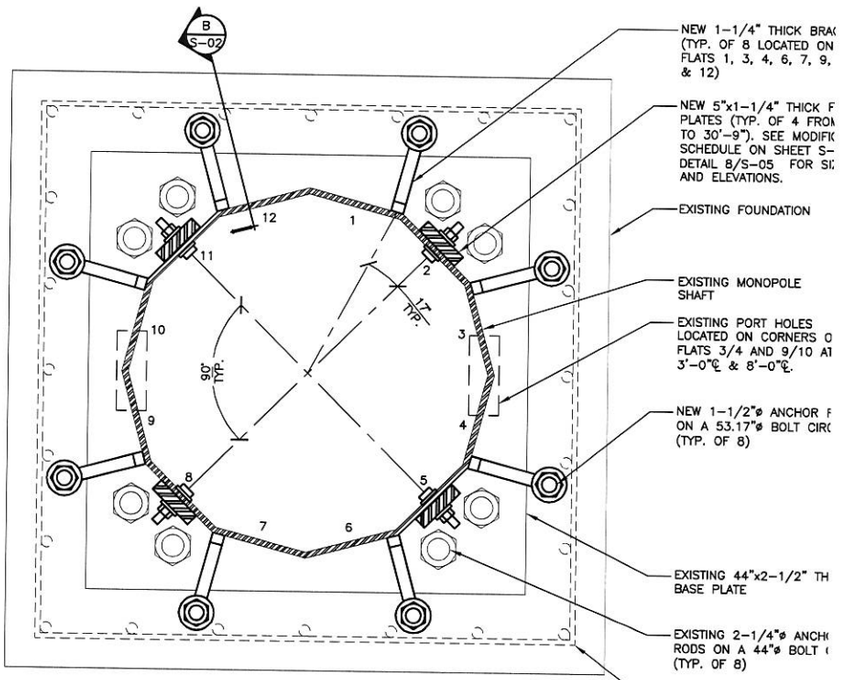
REACTIONS- 28 mph WIND- 1.0000 IN. ICE



REACTIONS- 85 mph



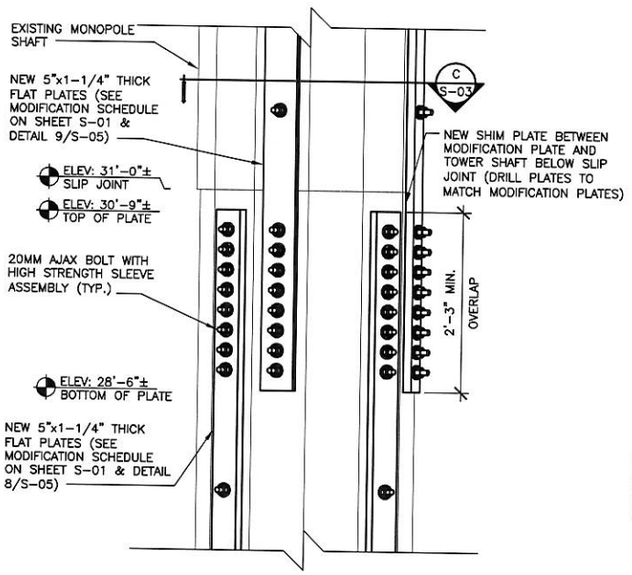
DETAIL 1 / S-02
1"=1'-0"



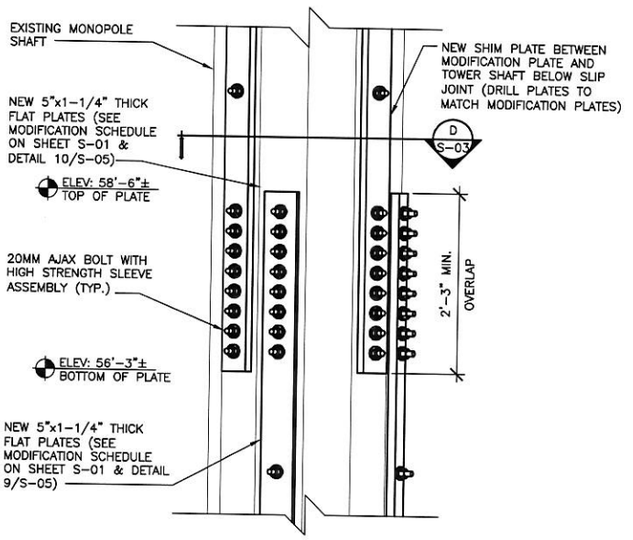
SECTION A / S-02
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

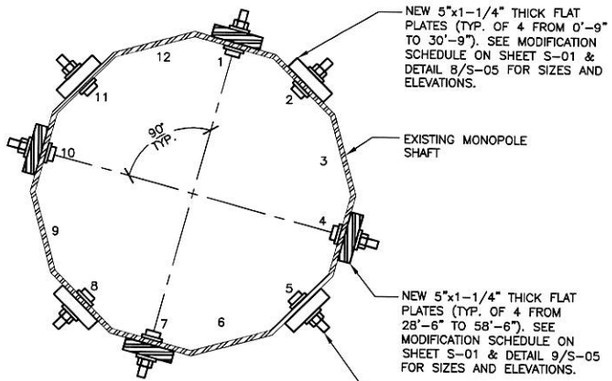
NOTE: FLAT NUMBERS DEPICTED IN THIS DRAWING MAY VARY FROM THE NUMBERING IN THE FIELD. CONTRACTOR MAY ADJUST FLAT NUMBERS TO MATCH EXISTING FIELD CONDITIONS. MODIFICATIONS SHALL BE INSTALLED IN THE APPROPRIATE ORIENTATION AND/OR LOCATION REGARDLESS OF THE NUMBERING SHOWN ON THE DRAWINGS.



DETAIL 2 S-03
1"=1'-0"

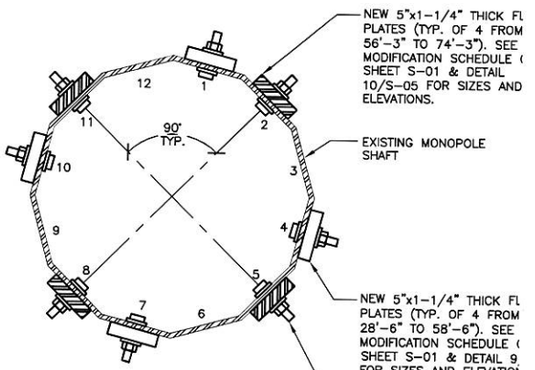


DETAIL 3 S-03
1"=1'-0"



SECTION C S-03
1-1/2"=1'-0"

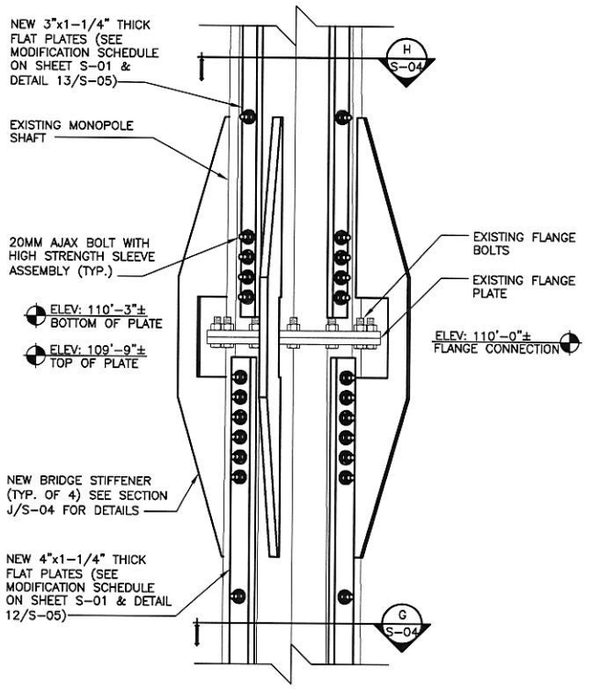
NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.



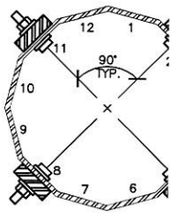
SECTION D S-03
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

NOTE: FLAT NUMBERS DRAWING MAY VARY F IN THE FIELD. CONTR FLAT NUMBERS TO M CONDITIONS. MODIFICA INSTALLED IN THE AP AND/OR LOCATION RI NUMBERING SHOWN C

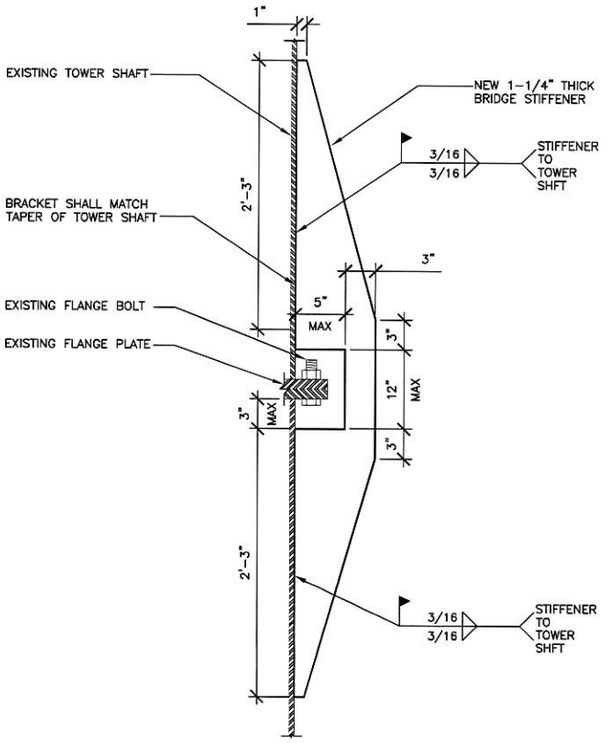


DETAIL 6 S-04
1"=1'-0"

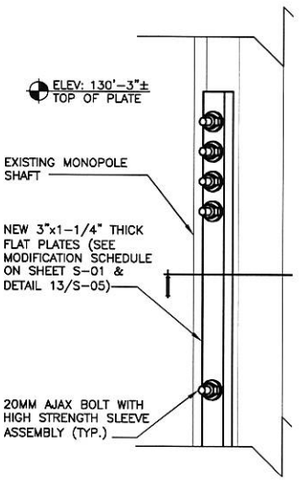


SECTION
1-1/2"=1'-0"

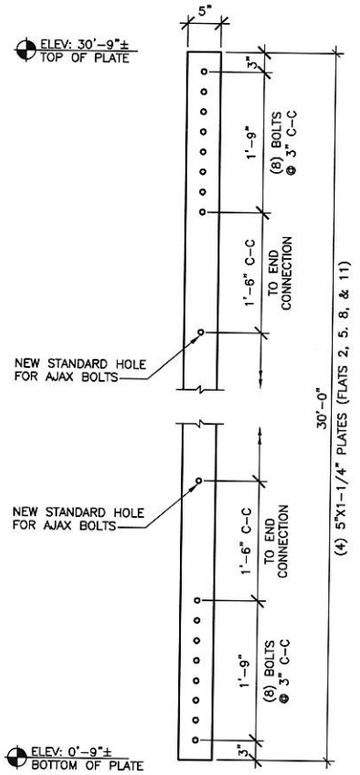
NOTE: STEP PEGS AND SAFETY
REMOVED AND REPLACED AS RE



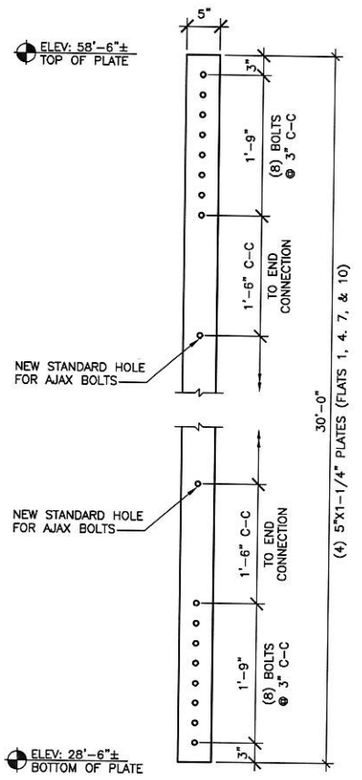
SECTION J S-04
1-1/2"=1'-0"



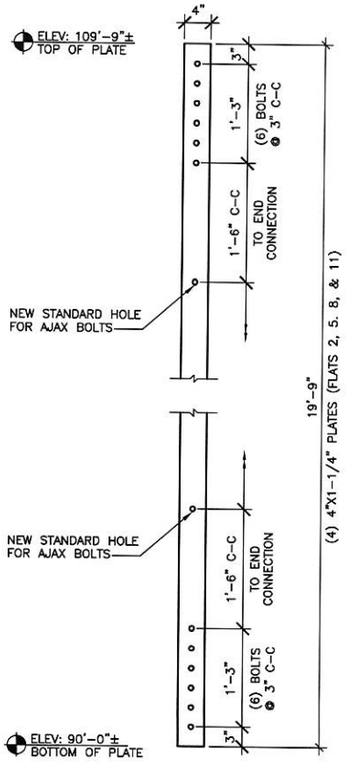
DETAIL
1"=1'-0"



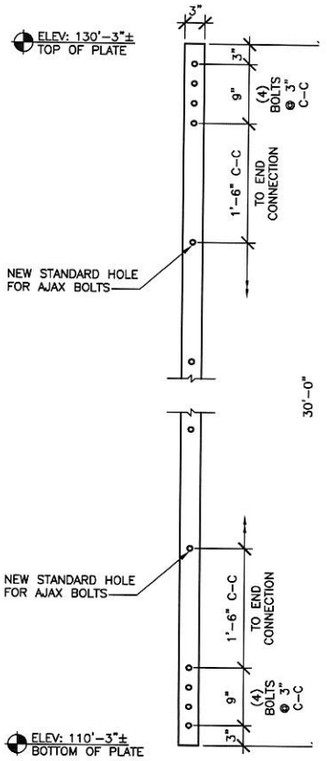
DETAIL 8 S-05
1"=1'-0"



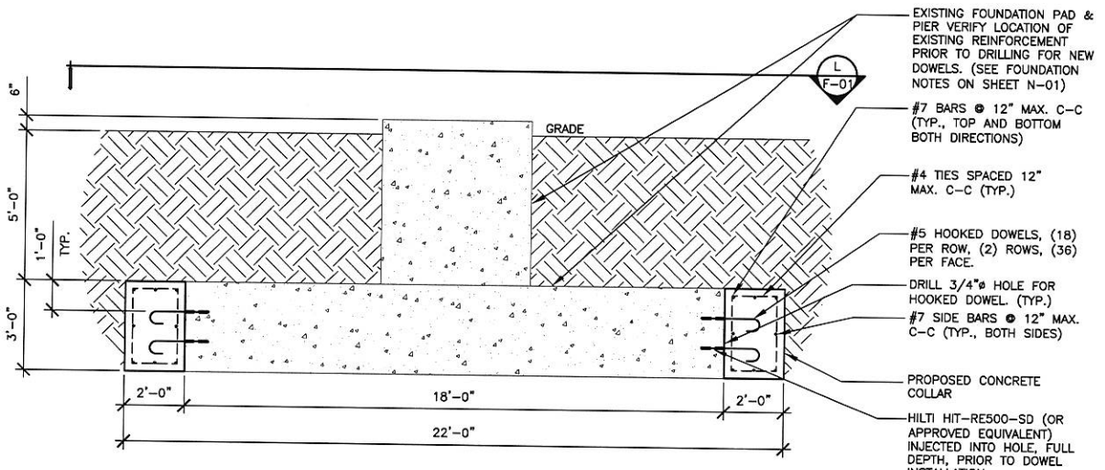
DETAIL 9 S-05
1"=1'-0"



DETAIL 12 S-05
1"=1'-0"

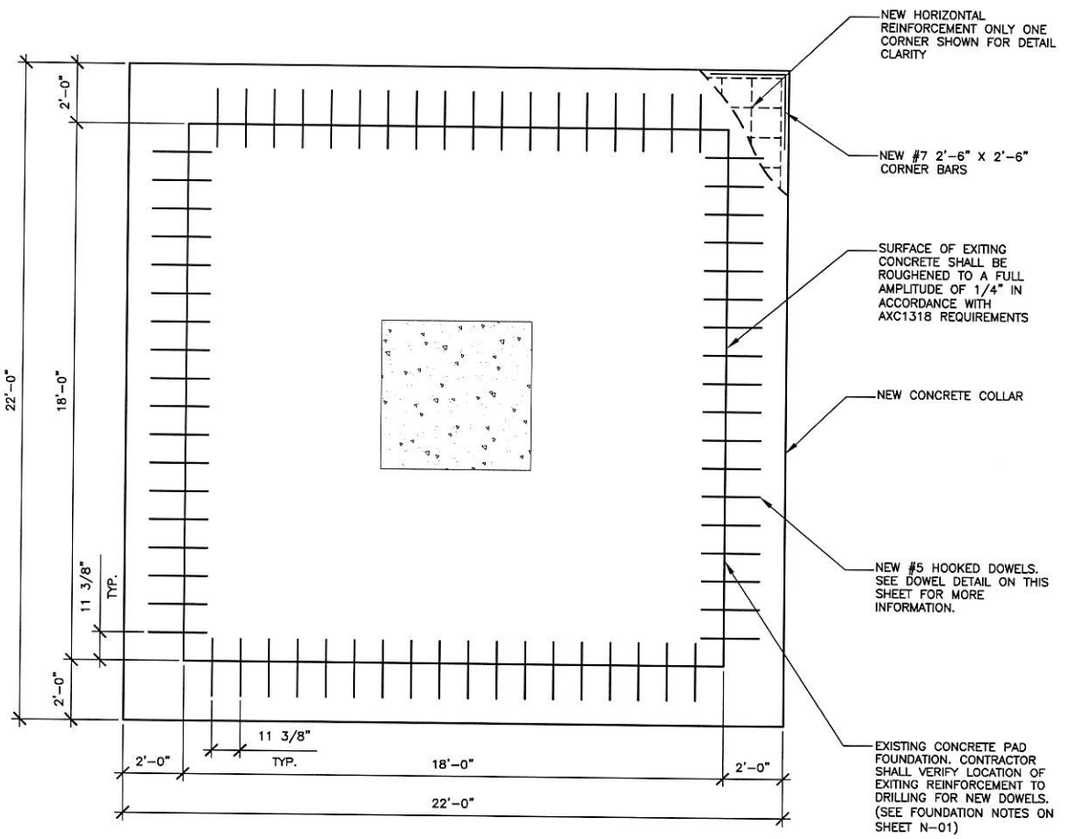


DETAIL 13 S-05
1"=1'-0"



DETAIL 14
3/8"=1'-0" F-01

EXISTING FOUNDATION IS BEING EXCAVATED. CONTRACTOR IS RESPONSIBLE FOR SUPPORTING TOWER DURING ALL PHASES OF CONSTRUCTION. SEE CONTRACTOR FOUNDATION NOTES ON SHEET N-01.



SECTION L
3/8"=1'-0" F-01

MODIFICATION INSPECTIC

BEFORE CONSTRUCTION		DURING CONSTRU	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM	CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	R
X	MODIFICATION INSPECTION CHECKLIST DRAWING	X	CONSTRUCTION INSPECTI
X	ENGINEER OF RECORD APPROVED SHOP DRAWINGS	X	FOUNDATION INSPECTION
X	FABRICATION INSPECTION	X	CONCRETE COMP. STREN
X	FABRICATOR CERTIFIED WELD INSPECTION	X	POST INSTALLED ANCHOF
X	MATERIAL TEST REPORT	X	BASE PLATE GROUT VERI
X	FABRICATOR NDE INSPECTION	X	CONTRACTOR'S CERTIFIED
X	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)	X	EARTHWORK: LIFT AND D
X	PACKING SLIPS	X	ON SITE COLD GALVANIZI
ADDITIONAL TESTING AND INSPECTIONS:		—	GUY WIRE TENSION REPO
		X	GC AS-BUILT DOCUMENT
		ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MODIFIC.
— DENOTES A DOCUMENT THAT IS NOT REQUIRED F(

MODIFICATION INSPECTION NOTES:

GENERAL

1. THE MODIFICATION INSPECTION IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD.

2. THE MODIFICATION INSPECTION IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MODIFICATION INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTENT RESIDES WITH THE ENGINEER OF RECORD AT ALL TIMES.

3. **TO ENSURE THAT THE REQUIREMENTS OF THE MODIFICATION INSPECTION ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MODIFICATION INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO OR PAYMENT IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. CONTACT LISTED ON THE TITLE SHEET SHALL BE CONTACTED IF SPECIFIC INSPECTOR CONTACT INFORMATION IS NOT KNOWN.**

MODIFICATION INSPECTOR

1. THE MODIFICATION INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSPECTION TO:

- –REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
- –WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON–SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- –DISCUSS ANY SITE SPECIFIC INSPECTIONS OR CONCERNS

2. THE MODIFICATION INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN–FIELD INSPECTIONS, AND SUBMITTING THE MODIFICATION INSPECTION REPORT.

GENERAL CONTRACTOR

1. THE GC IS REQUIRED TO CONTACT THE MODIFICATION INSPECTOR AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO:

- –REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
- –WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON–SITE MODIFICATION INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- –BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

2. THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

RECOMMENDATIONS

1. THE FOLLOWING RECOMMENDATIONS AND SUGGESTI(EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MODIFIC/

- –IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM PREFERABLY 10, TO THE MODIFICATION INSPECTOR , FOR THE MODIFICATION INSPECTION TO BE CONDUCT
- –THE GC AND MODIFICATION INSPECTOR COORDINATE PROJECT.
- –WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE G(SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING O
- –IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODI FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AI COMMENCE WITH ONE SITE VISIT.
- –WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE G(DURING THE MODIFICATION INSPECTION TO HAVE AN' INITIAL MODIFICATION INSPECTION. THEREFORE, THE MODIFICATION INSPECTION CAREFULLY TO ENSURE AI THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SI

CANCELLATION OR DELAYS IN SCHED MODIFICATION INSPECTION

1. IF THE GC AND MODIFICATION INSPECTOR AGREE TO INSPECTION WILL BE CONDUCTED, AND EITHER PARTY CA SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, PENALTIES RELATED TO THE CANCELLATION OR DELAY INC (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPM BE MADE IN THE EVENT THAT THE DELAY/CANCELLATIO CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE F

Pinnacle Wireless
Suite A Building 2
800 Marshall Phelps Road
Windsor, CT 06095

Kevin Clements
1117 Perimeter Ctr W, Suite W303
Atlanta, GA 30328
(678) 467-7228
kclements@gpdgroup.com

GPD# 2012832.07
January 4, 2013

STRUCTURAL ANALYSIS REPORT WITH MODIFICATION DESIGN

AT&T DESIGNATION:	**Site USID:**	**71304**
	Site FA:	**10035021**
	Site Name:	**POMFRET-TYRONE RD**
	AT&T Project:	**MOD LTE 082712**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC** **85-mph with 0" ice** **28-mph with 1" ice**
SITE DATA:		**82 Tyrone Rd, Pomfret, CT 06258, Windham County** **Latitude 41° 53' 24.871" N, Longitude 71° 57' 20.199" W** **Market: New England** **150' Monopole**

Lauren Groppi,

GPD is pleased to submit this Structural Analysis Report with Modification Design to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

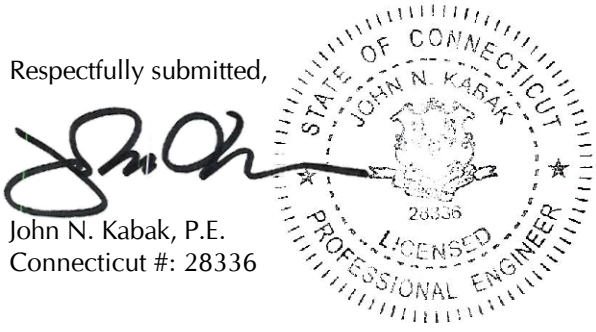
Analysis Results

Tower Stress Level with Proposed Equipment:	95.4%	Pass
Foundation Ratio with Proposed Equipment:	76.8%	Pass

Note: In order for this analysis results to be valid for the proposed, existing, and reserved loading in Appendix A the modifications referenced in the design drawings by GPD (Project #: 2012832.07, dated 1/4/2012) must be installed.

We at GPD appreciate the opportunity of providing our continuing professional services to you and Pinnacle Wireless. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



John N. Kabak, P.E.
Connecticut #: 28336

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to Pinnacle Wireless. This report was commissioned by Ms. Lauren Groppi of Pinnacle Wireless.

All proposed coax shall be internal to the monopole in order for the analysis results to be valid.

The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	95.4%	Pass
Anchor Rods	89.6%	Pass
Base Plate	74.6%	Pass
Flange Bolts	30.7%	Pass
Flange Plates	68.4%	Pass
Foundation	76.8%	Pass

ANALYSIS METHOD

TNX Tower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Equipment Modification Form	AT&T Internal Loading Document, uploaded 8/27/12	Siterra
Construction Drawings	Not Provided	N/A
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Modification Drawings	GPD Project #: 2012832.07, dated 1/4/12	GPD
Geotechnical Report	Dr. Clarence Welti, dated 5/15/09	Siterra
Previous Structural Analysis	GPD Project #: 2009013.07, dated 6/2/09	Siterra
Tower Mapping	GPD and Northeast Towers Inc, dated 12/3/08	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous analysis by GPD Job #: 2009013.07, dated 6/2/09, site photos, the provided equipment modification form and is assumed to be accurate.
12. The existing AT&T loading elevation found in the previous analysis by GPD Job #: 2009013.07, dated 6/2/09 was found to vary from the EMF and site photos. The existing AT&T loading elevation was based on the site photos.
13. The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

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

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	POMFRET-TYRONE RD
Site Number	71304
FA Number	10035021
Date of Analysis	1/4/2013
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	150'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	Dr. Clarence Welti	5/15/2009
Tower Mapping	GPD and Northeast Towers Inc	12/3/2008
Previous Structural Analysis	GPD Job #: 2009013.07	6/2/2009
Foundation Mapping	n/a	

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC
Location of Tower (County, State)	Windham, CT
Basic Wind Speed (mph)	85 - fastest
Ice Thickness (in)	1
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	95.4%
Anchor Rods (%)	89.6%
Foundation (%)	76.8%
Foundation Adequate?	Yes

The proposed modifications by GPD (Project #: 2012832.07, dated 1/4/2012), consist of adding flat plate reinforcement from 0' – 130.3', installing bridge stiffeners at 110', adding anchor rods to the base and extending the existing pad foundation, and have been considered in this analysis. See Appendix H for the modification drawings.

Steel Yield Strength (ksi)

Pole	65
Flange Plate	60
Flange Bolts	A325
Base Plate	60
Anchor Rods	75

Note: Steel grades assumded based on the previous analsysis

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	152	152	6	Panel	Powerwave	7770.00	30,150,270	1	Unknown	10'-8" Platform w/ Rails	12	Unknown	1-1/4"	Internal
AT&T Mobility	152	152	6	TMA	Powerwave	LGP21401				on the same mount				
AT&T Mobility	152	152	6	Diplexer	Powerwave	LGP21903				on the same mount				
Unknown	100	100	1	Dipole	Unknown	Dipole (2 element)				Flush mounted	1	Unknown	1/2"	Internal

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	152	154	1	Panel	Andrew	SBNH-1D6565C	30			on the existing mount	1	Conduit	2"	Internal
AT&T Mobility	152	154	2	Panel	KMW	AM-X-CD-17-65-00T	150,270			on the existing mount	1	Fiber Line	1/2"	Within Conduit
AT&T Mobility	152	152	6	RRU	Ericsson	RBS 6601				on the existing mount	2	DC Line	3/4"	Internal
AT&T Mobility	152	152	1	Surge Suppresser	Raycap	DC6-48-60-18-8F				on the existing mount				

Note: The proposed loading shall be in addition to the existing loading at the same elevation.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External

APPENDIX B

tnxTower Output File

Tower Input Data

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

Tower is located in Windham County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 28 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

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
5/8" Step Bolts	A	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.04	1.00
						1/2" Ice	0.14	1.56
						1" Ice	0.24	2.73
						2" Ice	0.44	6.91
						4" Ice	0.84	22.58
Safety Line 3/8	A	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
LDF6-50A (1-1/4 FOAM)	A	No	Inside Pole	150.00 - 8.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
2" Flex Conduit	A	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.32
						1/2" Ice	0.00	0.32
						1" Ice	0.00	0.32
						2" Ice	0.00	0.32
						4" Ice	0.00	0.32
1/2" Fiber Cable	A	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
3/4" DC Power Line	A	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
LDF4P-50A (1/2 FOAM)	B	No	Inside Pole	100.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	2	No Ice	0.00	0.00
						1/2" Ice	0.00	1.30
						1" Ice	0.00	2.60
						2" Ice	0.00	3.90
						4" Ice	0.00	5.20
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	1.30
						1" Ice	0.43	2.60
						2" Ice	0.65	3.90
						4" Ice	1.10	5.20
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.25 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	1.30
						1" Ice	0.43	2.60
						2" Ice	0.65	3.90
						4" Ice	1.10	5.20

Discrete Tower Loads

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
10'-8" Central Platform w/ 42" tower extension	C	None		0.0000	152.00	No Ice	43.32	43.32	2500.00
						1/2" Ice	46.28	46.28	3250.00
						1" Ice	49.24	49.24	4000.00
						2" Ice	55.16	55.16	5500.00
						4" Ice	67.00	67.00	8500.00
(2) 7770.00 w/Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
SBNH-1D6565C w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 2.00	0.0000	152.00	No Ice	11.45	9.12	82.70
						1/2" Ice	12.06	10.21	162.03
						1" Ice	12.69	11.18	254.15
						2" Ice	14.03	13.17	469.01
						4" Ice	17.05	17.35	1051.99
AM-X-CD-17-65-00T w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 2.00	0.0000	152.00	No Ice	11.31	9.10	105.82
						1/2" Ice	11.93	10.52	189.52
						1" Ice	12.55	11.60	285.59
						2" Ice	13.88	13.80	512.39
						4" Ice	16.88	18.41	1127.38
AM-X-CD-17-65-00T w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 2.00	0.0000	152.00	No Ice	11.31	9.10	105.82
						1/2" Ice	11.93	10.52	189.52
						1" Ice	12.55	11.60	285.59
						2" Ice	13.88	13.80	512.39

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
						4" Ice	16.88	18.41	1127.38
(2) LGP21401	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	10.00 21.26 30.32 54.89 135.29
(2) LGP21401	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	10.00 21.26 30.32 54.89 135.29
(2) LGP21401	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	10.00 21.26 30.32 54.89 135.29
(2) LGP21903 Diplexer	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	10.00 13.44 16.93 27.95 71.54
(2) LGP21903 Diplexer	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	10.00 13.44 16.93 27.95 71.54
(2) LGP21903 Diplexer	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	10.00 13.44 16.93 27.95 71.54
(2) RBS 6601	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
(2) RBS 6601	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
(2) RBS 6601	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
DC6-48-60-18-8F Surge Suppression Unit	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	32.80 50.52 70.72 119.24 252.92
4' Dipole	B	From Leg	3.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.79 1.03 1.28 1.81 3.11	0.79 1.03 1.28 1.81 3.11	10.00 16.34 25.48 52.76 147.65
4' Dipole	B	From Leg	3.00	0.0000	97.00	No Ice	0.79	0.79	10.00

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	1.03	1.03	16.34
			0.00			1" Ice	1.28	1.28	25.48
						2" Ice	1.81	1.81	52.76
						4" Ice	3.11	3.11	147.65

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.00	10'-8" Central Platform w/ 42" tower extension	33	44.523	2.9349	0.0032	7674
107.00	4' Dipole	33	22.218	2.0292	0.0002	3297
97.00	4' Dipole	33	18.203	1.8379	0.0002	3183

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 129.25	Pole	TP17.4673x14.5x0.1875	1	-3473.10	542361.69	78.5	Pass
L2	129.25 - 110	Pole	TP20.22x17.4673x0.47	2	-5418.02	*	84.6*	Pass
L3	110 - 70	Pole	TP25.94x20.22x0.534	3	-10791.30	*	89.5*	Pass
L4	70 - 31	Pole	TP31.52x24.5145x0.599	4	-18678.40	*	87.7*	Pass
L5	31 - 0	Pole	TP36x29.7312x0.622	5	-26914.60	*	95.4*	Pass
							Summary	
						Pole (L5)	95.4*	Pass
						RATING =	**95.4***	**Pass**

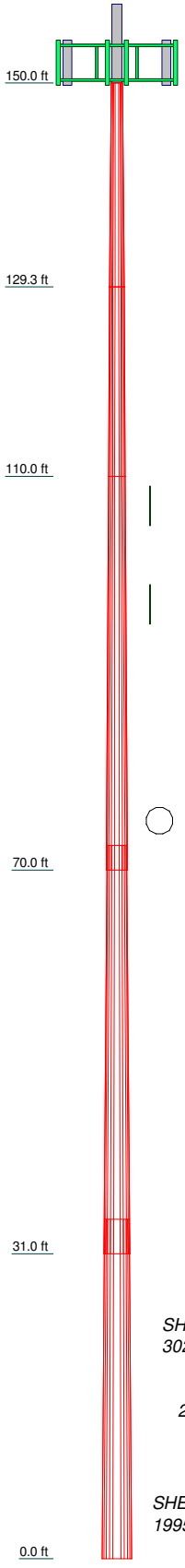
*See Appendix E for the modification calculations.

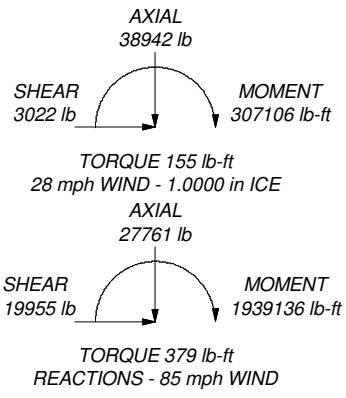
APPENDIX C

Tower Elevation Drawings

Section	1	2	3	4	5
Length (ft)	20.75	19.25	40.00	41.50	34.50
Number of Sides	12	12	12	12	12
Thickness (in)	0.1875	0.4700	0.5340	0.5990	0.6220
Socket Length (ft)			2.50	3.50	
Top Dia (in)	14.5000	17.4673	20.2200	24.5145	29.7312
Bot Dia (in)	17.4673	20.2200	25.9400	31.5200	36.0000
Grade			A572-65		
Weight (lb)	673.4	1821.4	5276.7	7468.0	7581.3

22820.9





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10'-8" Central Platform w/ 42" tower extension	152	(2) LGP21903 Diplexer	152
		(2) LGP21903 Diplexer	152
(2) 7770.00 w/Mount Pipe	152	(2) LGP21903 Diplexer	152
(2) 7770.00 w/Mount Pipe	152	(2) RBS 6601	152
(2) 7770.00 w/Mount Pipe	152	(2) RBS 6601	152
SBNH-1D6565C w/ Mount Pipe	152	(2) RBS 6601	152
AM-X-CD-17-65-00T w/ Mount Pipe	152	DC6-48-60-18-8F Surge Suppression Unit	152
AM-X-CD-17-65-00T w/ Mount Pipe	152		
(2) LGP21401	152	4' Dipole	107
(2) LGP21401	152	4' Dipole	97
(2) LGP21401	152		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

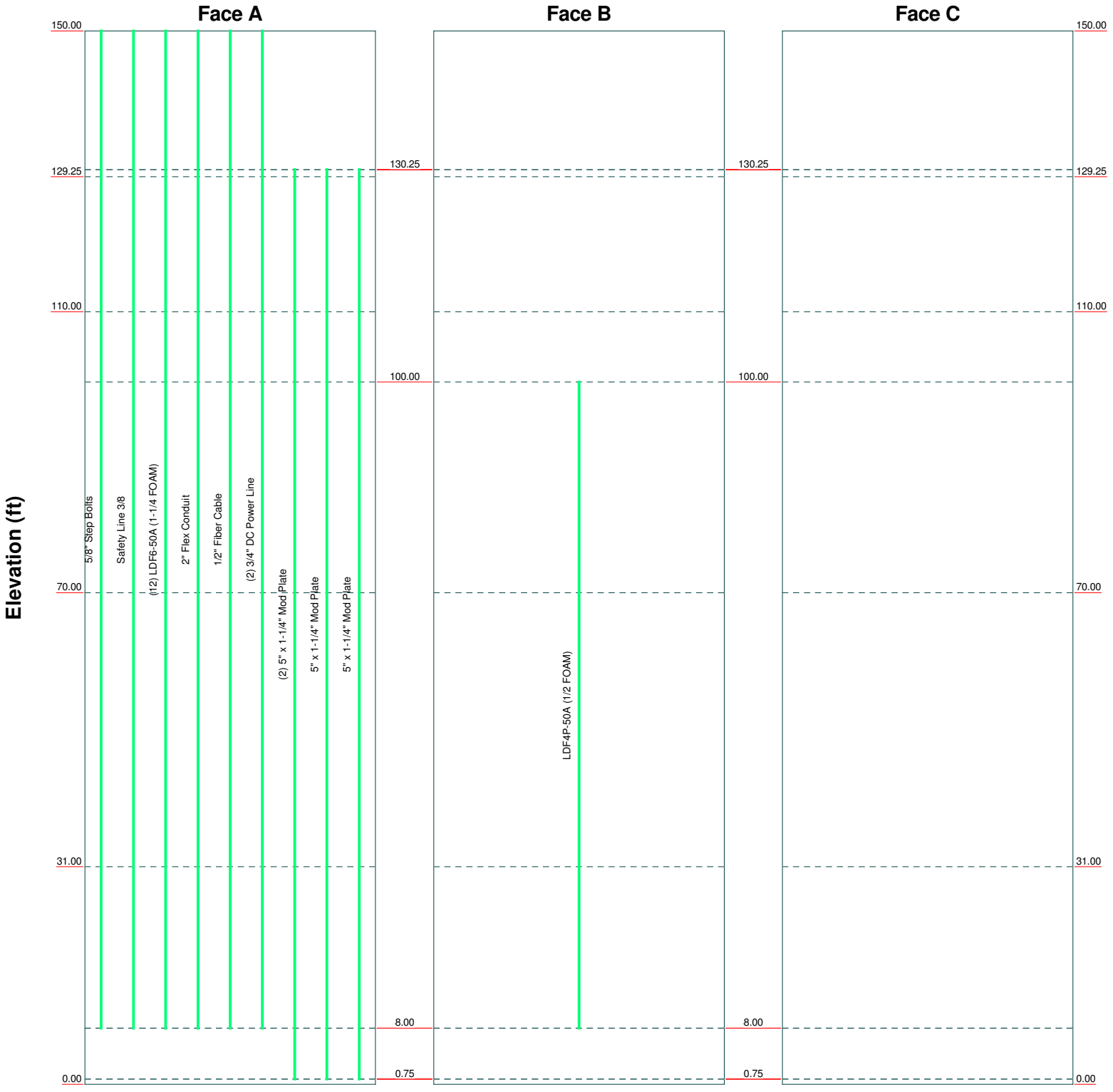
1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 78.5%

GPD
Consulting Engineers
520 South Main Street, Suite 2531
Akron, OH 44311
Phone: 330.572.2100
FAX: 330.572.2101

Job: 71304 POMFRET-TYRONE RD			
Project: 2012832.07			
Client: Pinnacle Wireless	Drawn by: jfields	App'd:	
Code: TIA/EIA-222-F	Date: 01/04/13	Scale: NTS	
Path: C:\Users\jfields\Desktop\Drop\TNX\2012832.07\71304.er		Dwg No. E-1	

Feedline Distribution Chart
0' - 150'

Round | Flat | App In Face | App Out Face | Truss Leg



GPD
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Consulting Engineers

Job: 71304 POMFRET-TYRONE RD			
Project: 2012832.07			
Client: Pinnacle Wireless	Drawn by: jfields	App'd:	
Code: TIA/EIA-222-F	Date: 01/04/13	Scale: NTS	
Path: C:\Users\jfields\Desktop\Drop\TNX\2012832.07\71304.en		Dwg No. E-7	

APPENDIX D

Base Plate & Anchor Rod Calculations

Anchor Rod and Base Plate Stresses
71304 POMFRET-TYRONE RD
2012832.07

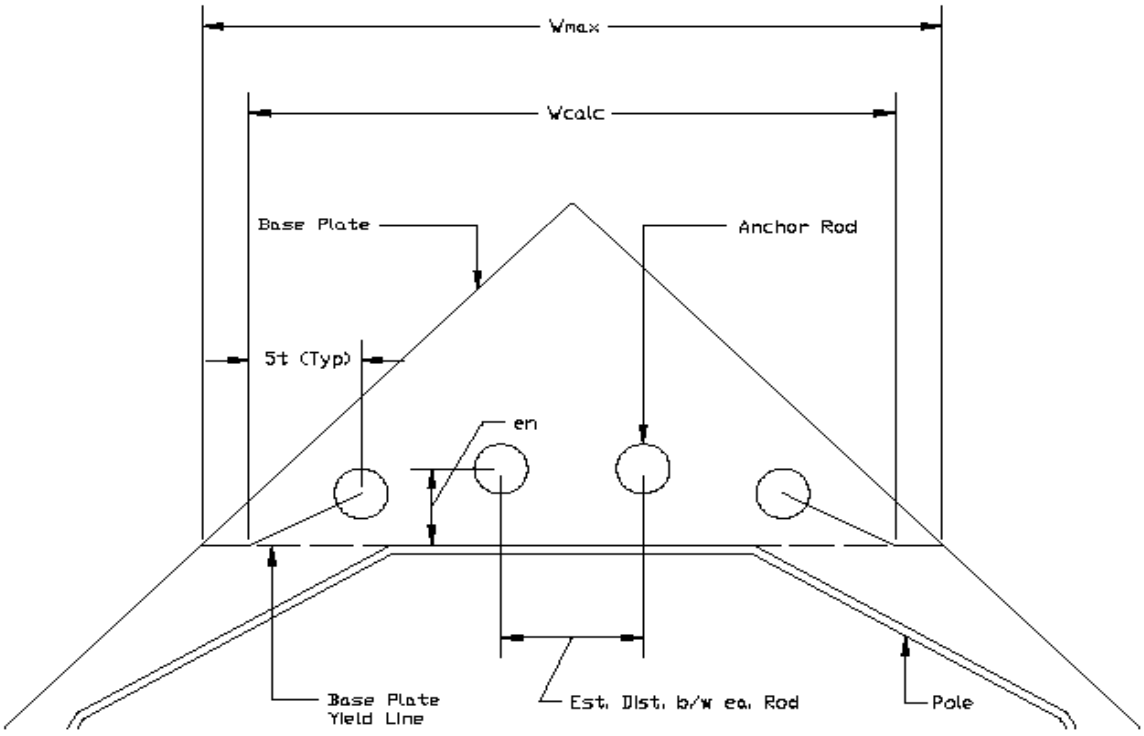
*Overturning Moment =	1176.39	k*ft
Axial Force =	19.22	k
Shear Force =	19.96	k

Acceptable Stress Ratio =	100.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces in the analysis.

Anchor Rods		
Pole Diameter =	36	in
Number of Rods =	8	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	44	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	157.81	kips
Max Compression on Rod =	162.61	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**80.9%**	**OK**

Base Plate		
Plate Strength (Fy) =	60	ksi
Plate Thickness =	2.5	in
Plate Width =	44	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	31.000	in
w_{max} =	26.225	in
w =	26.23	in
S =	27.32	in^3
fb =	44.76	ksi
Fb =	60	ksi
Base Plate Capacity =	**74.6%**	**OK**



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Job #: 2012832.07
Sheet No 1 Of 1

Calculated By: JDF Date: 1/4/2013
Checked By: Date:

MODIFIED ANCHOR ROD CALCULATIONS

Moment from RISA (M) =	1939.14 kip-ft	Code	TIA/EIA-222-F				
Axial from RISA (P) =	27.76 kip	ASIF =	1.33				
Shear from RISA (V) =	19.96 kip	Allowable Stress Ratio =	105%				
Inner Bolt Diameter =	2.25 in						
Number Inner Bolts (N_{inner}) =	8	Inner Bolt Circle (BC_{inner}) =	44 in				
Inner Bolt Area (A_{inner}) =	3.98 in^2	Total Area ($A_{tot.in}$) =	31.81 in^2	Axial, Inner Bolts ($P*\eta_{in}$) =	19.22 kips		
Inner Bolt MOI ($I_{o.inner}$) =	1.26 in^4	Percent Total Area (η_{in}) =	69.2%	Shear, Inner Bolts ($P*\eta_{in}$) =	19.96 kips		
Outer Bolt Diameter =	1.5 in						
Number Outer Bolts (N_{outer}) =	8	Outer Bolt Circle (BC_{outer}) =	53.17 in				
Outer Bolt Area (A_{outer}) =	1.77 in^2	Total Area ($A_{tot.out}$) =	14.14 in^2	Axial, Outer Bolts ($P*\eta_{out}$) =	8.54 kips		
Outer Bolt MOI ($I_{o.outer}$) =	0.25 in^4	Percent Total Area (η_{out}) =	30.8%				

I_{inner} =	7707.75 $in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	4997.80 $in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + c$
I_{tot} =	12705.55 $in.^4$	$(I_{inner} + I_{outer})$
F_{inner} =	162.61 kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} + P*\eta_{in}/N_{inner})$
F_{outer} =	87.11 kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} + P*\eta_{out}/N_{outer})$

Rnt.outer / Ω= 72.89 kips

Modified Anchor Rod Rating
% = 89.6% OK

APPENDIX E

Modification Calculations

Reinforced Monopole Analysis
71304 POMFRET-TYRONE RD
2012832.07

Code =	TIA/EIA-222-F
AISF=	1.333
Max Stress Ratio=	1.05
# of Sides =	12

Geometry									Reactions				Output	Capacities		
Shape	Quantity	Section	Elevation (ft)	Pole Flat-Flat (In)	Wall t (in)	Fy (ksi)	K	Conn.Spacing (in)	Moment (k-ft)	Axial (k)	Shear (k)	Torsion (k-ft)	Equivalent t (in)	Pole	Reinforcment	Pass/Fail
Plate 3x1.25	4	L2	110	20.22	0.1875	65	0.8	18	305.86	5.42	9.2	0.26	0.470	50.0%	84.6%	Pass
Plate 4x1.25	4	L3	70	25.94	0.25	65	0.8	18	726.65	10.79	13.25	0.03	0.534	63.0%	89.5%	Pass
Plate 5x1.25	4	L4	31	31.52	0.3125	65	0.8	18	1301.94	18.68	16.97	0.03	0.599	68.0%	87.7%	Pass
Plate 5x1.25	4	L5	0	36	0.375	65	0.8	18	1939.14	26.91	17.98	0.38	0.622	74.4%	95.4%	Pass

APPENDIX F

Flange Plate & Flange Bolt Calculations

GPD GROUP

Existing Flange Connection @ 110'
71304 POMFRET-TYRONE RD
2012832.07

*O.T. Moment =	82.3267	k*ft
Axial =	2.09	kips
Shear =	9.20	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio =	105.0%

Flange Bolts		
# Bolts =	12	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	23	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.98	ksi
Applied Shear =	0.77	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.95	ksi
Allowable Bolt Stress =	58.60325	ksi
B =	46.03	kips
Prying Action Check		
N/A, top flange thickness > tc		
Max Comp. on Bolt =	14.48	kips
Max Tension on Bolt =	14.13	kips
Shear Capacity =	3.5%	
Tensile Capacity =	30.7%	
Bolt Capacity =	**30.7%**	**OK**

Pole Information		
Shaft Diam. (Upper) =	20.22	in
Thickness (Upper)=	0.1875	in
# of Sides (Upper) =	12	
F_y (Upper) =	65	ksi
Shaft Diam. (Lower) =	20.22	in
Thickness (Lower)=	0.25	in
# of Sides (Lower) =	12	
F_y (Lower) =	65	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	26	in
wcalc =	10.96	in
wmax =	15.95	in
w =	10.96	in
S =	1.83	in^3
f_b =	15.29	ksi
F_b =	60	ksi
UP Capacity =	**25.5%**	**OK**

Lower Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	26	in
wcalc =	10.96	in
wmax =	15.95	in
w =	10.96	in
S =	1.83	in^3
f_b =	15.29	ksi
F_b =	60	ksi
LP Capacity =	**25.5%**	**OK**

UpperStiffeners	
Configuration =	None

Lower Stiffeners	
Configuration =	None

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Job #: 2012832.07
Sheet No 1 Of 1

Calculated By: JDF Date: 1/4/2013
Checked By: AW Date: 1/4/2013

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 110'

Tower Type = Monopole
Acceptable Sress Ratio = 105.0%
Code = TIA/EIA-222-F
ASIF = 1.33

Moment from RISA (M) = 305.86 kip-ft
Axial from RISA (P) = 5.42 kip

Inner Bolt Diameter = 1 in
Inner Bolt Area (A_{inner}) = 0.79 in^2
Inner Bolt MOI ($I_{o.inner}$) = 0.05 in^4
Number Inner Bolts (N_{inner}) = 12

Inner Bolt Circle (BC_{inner}) = 23 in
Total Area ($A_{tot.in}$) = 9.42 in^2
Percent Total Area (η_{in}) = 38.6%

Axial, Inner Bolts ($P*\eta_{in}$) = 2.09 kips

Bridge Stiffener Width = 3.00 in
Bridge Stiffener Thickness = 1.25 in
Bridge Stiffener Unbraced Length = 12.00 in
Bridge Stiffener Area (A_{pl}) = 3.75 in^2
Bridge Stiffener Average MOI (I_o) = 1.65 in^4
Number Bridge Stiffeners (N_{pl}) = 4

Bridge Stiffener Circle (BC_{pl}) = 30 in
Total Area ($A_{tot.pl}$) = 15.00 in^2
Percent Total Area (η_{pl}) = 61.4%

Axial, Bridge Stiffeners ($P*\eta_{pl}$) = 3.33 kips

I_{inner} =	623.80	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	0.00	$in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + N_{outer}*I_{o.outer})$
I_{pl} =	1694.10	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	2317.90	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$

$P_{u.t.inner}$ =	14.13	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.pl}$ =	88.24	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	89.90	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
ASIF*Pnt.bolt / Ω =	46.03	kips	
Bolt Rating =	30.7%	OK	

Number Bridge Stiffeners (N_{pl}) = 4
f_y = 65 ksi
f_u = 80 ksi
Plate Width = 3.00 in
Plate Thickness = 1.25 in
Plate Unbraced Length = 12.00 in
Plate Area (A_{pl}) = 3.75 in^2
Upper Pole Diameter = 20.22 in
Flange Plate Diameter = 26.00 in
Flange Plate to Bridge Stiffener Gap = 2.11 in
Bridge Stiffener Circle (BC_{pl}) = 30.00 in
Bridge Stiffener MOI (I_o) = 2.81 in^4
I_{pl} = 1694.10 $in.^4$ $(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
Axial Capacity Required = 89.90 kips $(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
Load Eccentricity, e = 6.50 in (from weld to center of stiffener area)
Moment Capacity Required = 0.00 kip-in
E = 29000 ksi
K = 1.00
r_{min} = 0.36
KL/r_{min} = 33.255
F_e = 258.81 ksi
F_{cr} = 58.51 ksi
Pnc / Ω = 131.39 kips
Pnt / Ω = 145.96 kips
S = 1.88 in^3
Z = 2.81 in^3
$L_b d/t^2$ = 23.04
M_{nLTB} = n/a
M_p = 182.81 kip-in
Mn/ Ω = 109.47 kip-in
Stiffener Rating = 68.4% OK

Bridge Stiffener Welds: Analysis
Bridge Stiffener Height = 27.00 in
a value (from AISC Table 8-4) = 0.241
C value (from AISC Table 8-4) = 3.31
Fillet Size = 0.1875 in
Weld Rating = 67.1% OK

APPENDIX G

Foundation Calculations

Mat Foundation Analysis
71304 POMFRET-TYRONE RD
2012832.07

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1

Tower Reactions		
Moment, M	1939.14	k-ft
Axial, P	27.76	k
Shear, V	19.96	k

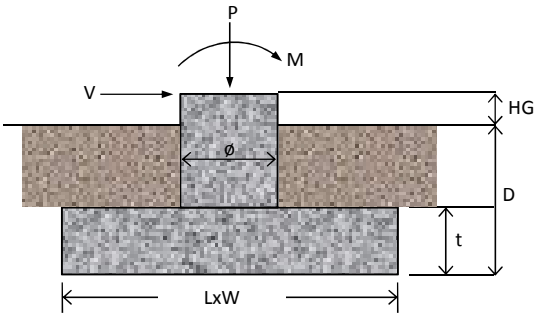
Pad & Pier Geometry		
Pier Width, ø	5	ft
Pad Length, L	22	ft
Pad Width, W	22	ft
Pad Thickness, t	3	ft
Depth, D	8	ft
Height Above Grade, HG	0.5	ft

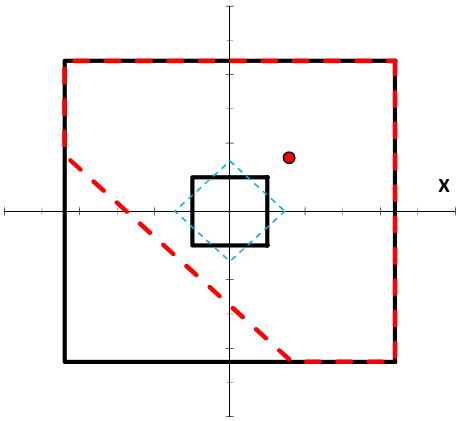
Pad & Pier Reinforcing		
Rebar Fy		ksi
Concrete Fc'		ksi
Clear Cover		in
Reinforced Top & Bottom?		
Pad Reinforcing Size		
Pad Quantity Per Layer		
Pier Rebar Size		
Pier Quantity of Rebar		

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	28	°
Bearing Type	Gross	
Ultimate Bearing	12	ksf
Water Table Depth	1	ft
Frost Depth	4	ft

Bearing Summary			Load Case
Qxmax	1.86	ksf	1D+1W
Qymax	1.86	ksf	1D+1W
Qmax @ 45°	2.44	ksf	1D+1W
$Q_{(all)\ Gross}$	6.00	ksf	
Controlling Capacity	**40.7%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	1.95	≥1.5	1D+1W
FS(ot)y	1.95	≥1.5	1D+1W
Controlling Capacity	**76.8%**	**Pass**	





APPENDIX H

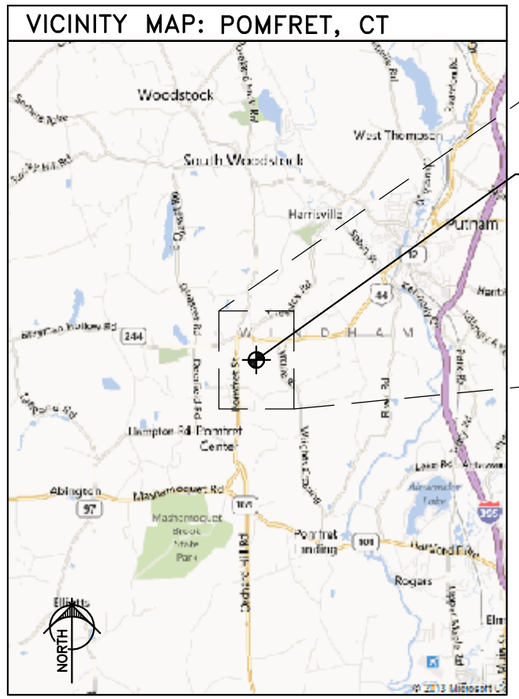
Modification Drawings

POMFRET-TYRONE RD

USID #: 71304

150' MONOPOLE

VICINITY MAP: POMFRET, CT



SITE

SITE

AERIAL VIEW

SITE

PROJECT SUMMARY

TOWER OWNER:	AT&T MOBILITY
TOWER TYPE:	MONOPOLE
GOVERNING CODE:	TIA/EIA-222-F, 2003 IBC, ASCE 7-05, & 2005 CTBC
LATITUDE:	41° 53' 24.871" N
LONGITUDE:	71° 57' 20.199" W
OWNER CONTACT:	MS. STEPHANIE WENDEROTH SUITE A BUILDING 2 800 MARSHALL PHELPS ROAD WINDSOR, CT 06095
ENGINEER CONTACT:	MR. KEVIN CLEMENTS 1117 PERIMETER CENTER WEST, SUITE W303 ATLANTA, GA 30328 (678) 467-7228

PROJECT OVERVIEW:

THE LISTED DRAWINGS REPRESENT MODIFICATIONS TO THE EXISTING TOWER BY INSTALLING FLAT PLATES AND BRIDGE STIFFENERS TO THE EXISTING TOWER SHAFT, AS WELL AS ANCHOR RODS WITH BRACKETS TO THE TOWER BASE AND A FOUNDATION COLLAR TO THE EXISTING FOUNDATION.

DRAWING INDEX

INTEGRATED BY:

Pinnacle Wireless

GPD GROUP
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at&t

REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
POMFRET, CT 06258

TITLE SHEET

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO. 2012832.07

T-01

GENERAL NOTES

1. THE FOLLOWING DRAWINGS REPRESENT MODIFICATIONS TO THE EXISTING TOWER. THE MODIFICATIONS ARE BASED ON GPD GROUP STRUCTURAL REPORT (PROJECT #: 2012801.71, DATED NOVEMBER 7, 2012). ALL MODIFICATIONS MUST BE INSTALLED TO BRING THE TOWER INTO CONFORMANCE WITH TIA/EIA-222-F, 2003 IBC, ASCE 7-05, AND 2005 CTBC.

2. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222-F, 2003 IBC, ASCE 7-05, 2005 CTBC, AWS, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.

3. ALL ORIGINAL TOWER INFORMATION WAS OBTAINED IN THE FORM OF A TOWER MAPPING BY GPD AND NORTHEAST TOWER INC. (DATED DECEMBER 3, 2008). CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED TOWER DOCUMENTS.

4. THIS DESIGN ASSUMES THE TOWER AND FOUNDATIONS HAVE BEEN WELL MAINTAINED, IN GOOD CONDITION, AND ARE WITHOUT DEFECT. BENT MEMBERS, CORRODED MEMBERS, LOOSE BOLTS, CRACKED WELDS AND OTHER MEMBER DEFECTS HAVE NOT BEEN CONSIDERED. THE TOWER IS ASSUMED TO BE PLUMB AND THE SITE IS ASSUMED TO BE LEVEL. THIS DESIGN IS BEING PROVIDED WITHOUT THE BENEFIT OF A CONDITION ASSESSMENT BY GPD GROUP. **CONTRACTOR SHALL COMMISSION A COMPLETE CONDITION ASSESSMENT PRIOR TO ORDERING ANY REINFORCING MATERIALS. CONTRACTOR SHALL SUPPLY CONDITION ASSESSMENT TO ENGINEER FOR REVIEW.** SEE CONTRACTOR NOTES.

5. MANUFACTURER TOLERANCES, FIELD ADJUSTMENTS, INCORRECT STACKING, AND TEMPERATURE CAN CAUSE DIMENSION DISCREPANCIES. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS. ALL FIELD MEASUREMENTS MUST BE REPORTED TO ENGINEER.

6. ALL NEW STEEL SHALL BE HOT DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.

7. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).

8. CAULKING SHALL BE PROVIDED AROUND PERIMETER OF ANY AND ALL MODIFICATION MEMBERS TO ENSURE COMPLETE SEAL BETWEEN EXISTING STRUCTURE AND REINFORCING MEMBERS. SEALANT IS TO BE EXTERIOR GRADE, PAINTABLE SILICONE CAULKING AS MANUFACTURED BY DOW AND ACCEPTABLE TO GPD.

9. LOADINGS:

WIND LOADS:
FASTEST MILE WIND SPEED (PER: TIA/EIA-222-F, 2003 IBC, ASCE 7-05, & 2005 CTBC) 85 MPH
(WINDHAM COUNTY, CONNECTICUT)

ICE LOADS:
1" RADIAL BASE ICE
FASTEST MILE WIND SPEED (CONCURRENT W/ ICE) 28 MPH

10. STRUCTURAL STEEL:

SPECIFICATIONS
LATEST EDITION OF AISC

MATERIAL

PLATES	ASTM A572 (GR 65)
BRIDGE STIFFENERS	ASTM A572 (GR 65)
ONE SIDE BOLTS	AJAX 20MM (PC8.8) W/ HIGH STRENGTH SLEEVE (Fu=120KSI)
NUTS	ASTM A194-2H
WASHERS	ASTM F436
PIPE	ASTM A53-B (GR 42)
ANCHOR RODS	ASTM F1554 (GR 105)
ANCHOR ROD BRACKETS	ASTM A572 (GR 65)
HOT DIPPED GALVANIZING	ASTM A123
WELDS	E70XX
PAINT	NEW STEEL TO BE PAINTED TO MATCH EXISTING TOWER
EPOXY	HILTI HIT-RE 500-SD (ICC#: ESR-2322)

11. ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.

12. ALL SUBSTITUTES PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.

13. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

14. UNLESS NOTED OTHERWISE, ALL NEW MEMBERS SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.

15. THE ENGINEER (GPD GROUP) SHALL MAKE POST INSTALLATION OBSERVATION FOR TOWER AND FOUNDATION. CONTRACTOR SHALL COORDINATE THE ON-SITE INSTALLATION OBSERVATION W/ ENGINEER (GPD GROUP) AT LEAST 5 BUSINESS DAYS PRIOR TO THE CONCRETE POUR FOR EACH FOUNDATION MODIFICATION. CONTRACTOR SHALL COORDINATE W/ENGINEER (GPD GROUP) WITHIN 72 HOURS AFTER 100% COMPLETION OF THE TOWER MODIFICATION INSTALLATION. INSTALLATION OF PROPOSED LOADING WITHOUT ENGINEER APPROVAL IS PROHIBITED. INSTALLATION OF THE PROPOSED LOADING IS BY OTHERS, AND IS BEYOND THE SCOPE OF THESE DRAWINGS.

CONTRACTOR NOTES

1. ALL CONTRACTORS AND LOWER TIER CONTRACTORS MUST ACKNOWLEDGE IN WRITING TO TOWER OWNER AND GPD GROUP THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW TOWER OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR TOWER OWNER AND GPD GROUP ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM LOWER TIER SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO TOWER OWNER AND GPD GROUP.

2. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, GPD GROUP SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.

3. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE TOWER OWNER AND ENGINEER.

4. THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.

5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS AND PRECAUTIONS IN CONNECTION WITH THIS WORK.

6. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING; ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO ORDERING ANY MATERIAL AND MUST RESOLVE ALL ISSUES WITH THE OWNER PREVENTING A CONTINUOUS INSTALLATION. CONTRACTOR SHALL NOTE ALL ANTENNAS, MOUNTS, COAX, LIGHTING, CLIMBING SUPPORTS, STEP BOLTS, PORT HOLES, AND ANY OTHER TOWER APPURTENANCES IN THE REGION OF THE MODIFICATIONS. SEE GENERAL NOTES #4 AND #5 THIS SHEET.

CONTINUED CONTRACTOR NOTES

7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ALL COAX, T-BRACKETS, ANTENNA MOUNTS, AND ANY OTHER TOWER APPURTENANCE THAT MAY INTERFERE WITH THE TOWER MODIFICATIONS. ALL TOWER APPURTENANCES MUST BE REPLACED AND/OR RESTORED TO ITS ORIGINAL LOCATION. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.

8. SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS TO PROPERLY FIT THE MODIFIED REGION OF THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY OTHERS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.

9. CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE TOWER OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

10. WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 10-MPH). CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL TOWER SHORING, TEMPORARY GLOBAL TOWER SHORING, AND ALL SHORING OF SURROUNDING BUILDINGS, PADS, AND OTHER OUTDOOR SITE OBSTRUCTIONS. ALL SHORING, TEMPORARY BRACING, AND TEMPORARY SUPPORTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

11. CONTRACTOR SHALL VERIFY MONOPOLE IS SET PROPERLY AND HAS BEEN JACKED INTO ITS FINAL RESTING POSITION BEFORE FINAL CRITICAL FIELD MEASUREMENTS ARE VERIFIED AND BEFORE ORDERING MATERIAL. ANY OBJECTS/STEP BOLTS THAT PREVENT TOWER FROM SITTING PROPERLY SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.

FOUNDATION NOTES

1. CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS 5 BUSINESS DAYS PRIOR TO FOUNDATION CONSTRUCTION IN ORDER TO COORDINATE THE VISUAL INSPECTION BY GPD:

- -STEPHANIE WENDEROTH (NEXLINK GLOBAL SERVICES) 678-366-1247
- -KEVIN CLEMENTS (GPD GROUP) 678-467-7228
- -BRIAN SMITH (GPD GROUP) 216-927-8648
- -JEREL FIELDS (GPD GROUP) 317-295-3186

2. EXISTING FOUNDATION INFORMATION BASED UPON A STRUCTURAL ANALYSIS REPORT BY MANZI ENGINEERING (DATED APRIL 1, 2000). CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED FOUNDATION DOCUMENT. IF EXISTING FOUNDATION CONDITIONS DIFFER FROM THE REFERENCED DOCUMENT, CONTACT ENGINEER AND TOWER OWNER IMMEDIATELY.

3. CONCRETE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.

4. MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR 1/3 CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. MAXIMUM SIZE MAY BE INCREASED TO 2/3 CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS OR VOIDS.

5. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

6. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.

7. ALL FOUNDATIONS SHALL REST ON AND AGAINST FIRM UNDISTURBED SOIL FREE FROM WATER, ORGANIC MATTER, AND FORM WORK. CONTRACTOR SHALL COMPACT SUBGRADE AS REQUIRED.

8. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE INDICATED.

9. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH MINIMUM COVER OF REINFORCEMENT. ALL REINFORCING SHALL BE EQUALLY SPACED UNLESS NOTED OTHERWISE.

10. PROVIDE #7 2'-6" X 2'-6" CORNER BARS AT ALL PLACES WHERE DIRECTION OF REINFORCEMENT CHANGES.

11. SOIL INFORMATION IS BASED ON A GEOTECHNICAL REPORT BY DR. CLARENCE WELTS (DATED, MAY 15, 2009). IF SOIL CONDITIONS ENCOUNTERED ARE DIFFERENT FROM REFERENCED GEOTECHNICAL REPORT, NOTIFY ENGINEER IMMEDIATELY.

A) ALLOWABLE BEARING = 6,000 PSF AT 7'
B) UNIT WEIGHT OF SOIL = 120 PCF
C) GROUND WATER = 1'-0"

12. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED GEOTECHNICAL REPORT. CONTRACTOR SHALL IMPLEMENT ALL RECOMMENDATIONS CONTAINED IN THE REFERENCED GEOTECHNICAL REPORT.

13. BACKFILL SHALL BE CLEAN, FREE OF DEBRIS, AND ORGANIC FREE. CONTRACTOR SHALL BRING IN CLEAN FILL AS REQUIRED. (MIN. UNIT WEIGHT = 120 PCF).

14. ALL BACKFILL SHALL BE CONTROLLED-COMPACTED, PLACED IN A MAXIMUM OF 8" LIFTS, MOISTURE CONDITIONED TO WITHIN THREE PERCENT OF OPTIMUM MOISTURE, AND COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY PER ASTM D1557.

15. CARE SHALL BE TAKEN DURING INSTALLATION OF DOWELS SO THAT EXISTING REINFORCING STEEL AND ANCHOR BOLTS ARE NOT DAMAGED. CONTRACTOR SHALL USE X-RAY OR OTHER ENGINEER APPROVED NON-DESTRUCTIVE MEANS TO LOCATE EXISTING REINFORCING STEEL AND ANCHOR BOLTS. CONTACT ENGINEER IMMEDIATELY IF EXISTING STEEL IS ENCOUNTERED.

16. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH BONDING AGENT INSTALLATION PROCEDURES AND RECOMMENDATIONS.

17. PRIOR TO APPLICATION OF BONDING AGENT, CLEAN FACE OF EXISTING FOUNDATION SUCH THAT IT IS FREE FROM ALL DIRT, DEBRIS, AND FOREIGN MATTER.

18. CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.

19. ALL GROUNDING SHALL ACHIEVE 5Ω OR LESS RESISTANCE UPON COMPLETION. ALL GROUNDING ENCOUNTERED SHALL BE RELOCATED 3'-0" BEYOND FOUNDATION. ALL GROUNDING SHALL BE CONTINUOUS AND COORDINATED WITH OWNER. GROUNDING DESIGN AND ENGINEERING IS BEYOND THE SCOPE OF THESE DESIGN DRAWINGS AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMMISSION.

20. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING PUBLIC AND PRIVATE UTILITIES PRIOR TO EXCAVATION. IF NECESSARY UTILITIES SHALL BE RELOCATED PRIOR TO FOUNDATION MODIFICATION. CONSENT FROM THE TOWER OWNER AND EOR MUST BE OBTAINED TO ENCASE UTILITIES IN CONCRETE.

21. EQUIPMENT PAD, SHELTER, AND ICE BRIDGE SUPPORT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMMISSION. CONTRACTOR SHALL TAKE GREAT CARE AND ALL NECESSARY PROVISIONS WHEN SHORING IS REQUIRED.

WELD NOTES

1. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL PERFORM A NONDESTRUCTIVE TEST ON THE EXISTING BASE PERIMETER WELD TO INSURE ITS STRUCTURAL INTEGRITY IN ACCORDANCE WITH D1.1 & D1.1M: 2006 STRUCTURAL WELDING CODE STEEL. IF ANY FLAWS ARE DISCOVERED, THE PROJECT SHALL BE PUT ON HOLD UNTIL REMEDIES TO CORRECT THE DEFICIENCIES ARE DESIGNED AND INSTALLED. THE TOWER OWNER AND THE ENGINEER SHALL BE CONTACTED IMMEDIATELY UPON A FAILING NONDESTRUCTIVE TESTING RESULT.

2. CONTRACTOR IS RESPONSIBLE FOR COMMISSIONING A CERTIFIED WELD INSPECTOR (CWI) THROUGHOUT THE ENTIRETY OF THE PROJECT. A PASSING CWI REPORT SHALL BE PROVIDED TO THE ENGINEER UPON COMPLETION OF THE PROJECT.

3. WELDING CERTIFICATES MUST BE PROVIDED TO CWI AND GPD GROUP PRIOR TO WELDING CONTRACTOR BEGINNING WORK ON SITE. CERTIFICATE WILL BE ASKED FOR AS PART OF INSPECTION PROCESS. ALL WELDING SHOULD BE PERFORMED BY AN AWS QUALIFIED WELDER WHO HAS EXPERIENCE WITH GALVANIZED SURFACES AND IN ACCORDANCE WITH ANSI/AWS D1.1 AND ANSI Z 49.1 OR LATEST EDITIONS.

4. OXY FUEL GAS WELDING OR BRAZING IS STRICTLY PROHIBITED. SPECIFICALLY, NO TORCH CUTTING IS PERMITTED ON SITE. ALL HOLES SHALL BE CUT WITH A GRINDER.

5. INSTALL 3000° (NFPA 701) FIRE BLANKET AROUND ALL COAX.

6. MORE SPLATTER AND SPARKS SHALL BE ANTICIPATED GIVEN THE PREVIOUSLY GALV. SURFACE.

7. COAX IS FLAMMABLE AND CAN CATCH FIRE IF PROPER PRECAUTIONS ARE NOT MADE TO SHIELD COAX FROM ALL WELDING PROCEDURES. ALL COAX SHALL BE SHIELDED AT AND BELOW EACH WELDING PROCEDURE AND ELEVATION. IN ADDITION, COAX SHALL BE PUSHED AWAY FROM TOWER FACE WHERE WELDING IS BEING PERFORMED.

8. CONTRACTOR SHALL EXERCISE CAUTION WHEN WELDING ON A GALVANIZED SURFACE. IF THE WELD MATERIAL IS CONTAMINATED WITH ZINC IT DOES NOT PROVIDE A STRUCTURAL WELD.

9. FUMES CREATED FROM WELDING ON A PREVIOUSLY GALV. SURFACE CAN BE HAZARDOUS.

10. PRIOR TO WELDING, ALL SURFACES SHALL BE PROPERLY GROUND TO REMOVE GALVANIZING.

11. ALL FIELD WELDS SHALL BE TOUCHED UP WITH A GALVANIZING PAINT REPAIR (ZRC OR APPROVED EQUIVALENT).

12. WATER SHALL BE ON SITE, OF ADEQUATE AMOUNT, AND AVAILABLE AT SHORT NOTICE AT ALL TIMES DURING WELDING ACTIVITY. A **MINIMUM** OF 500 GAL. OF WATER SHALL BE PROVIDED. WATER SHALL BE CAPABLE OF REACHING HEIGHT WHERE WELDING IS BEING PERFORMED. IN ADDITION, A MINIMUM OF SIX (6) 10 LB. CLASS ABC MULTIPURPOSE FIRE EXTINGUISHERS FULLY CHARGED AND CAPABLE OF DISCHARGE WITHIN 30 SECONDS OF DETECTING A FIRE SHALL BE PROVIDED. FIRE EXTINGUISHERS SHALL BE STRATEGICALLY LOCATED AROUND COMPOUND AND IN THE AIR (I.E. ON THE MAN LIFT WHERE WELDING IS BEING PERFORMED).

16. CLEAN OUT ALL DEBRIS THROUGHOUT MONOPOLE AND MONOPOLE BASE PRIOR TO WELDING.

MODIFICATION PLATE NOTES

1. CONTRACTOR SHALL INSTALL FLAT PLATES, STIFFENERS, AND BRACKETS AT LOCATIONS PER PLAN VIEW.

2. USE AJAX BOLTS WITH CORRECT SLEEVE LENGTHS PER DETAILS. **BOLT THREADS SHALL NOT BE IN THE SHEAR PLANE.**

3. ALL HOLES DRILLED IN POLE SOLVENT CLEANED AND TOUCHED UP WITH ZRC ZINC RICH PAINT.

4. SLIP JOINTS TO BE JACKED TOGETHER USING 6 TON COME-A-LONGS PRIOR TO MOUNTING CHANNELS.

5. SHIM PLATES ARE TO BE USED BELOW SLIP JOINT AS REQUIRED.

6. SPLICE BOLTS AND AJAX BOLTS TO BE TIGHTENED PER AISC "SNUG-TIGHT CONDITION".

8. CONTRACTOR SHALL VERIFY THAT TOWER IS PLUMB PRIOR TO THE INSTALLATION OF ANY TOWER MODIFICATIONS.

ANCHOR ROD NOTES

1. CONTRACTOR SHALL INSTALL ANCHOR RODS PER MANUFACTURER'S INSTALLATION PROCEDURES AND GUIDELINES.

2. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE INSTALLATION PROCEDURES AND RECOMMENDATIONS FOR THE SPECIFIED EPOXY ADHESIVE RESIN (OR APPROVED EQUIVALENT). EPOXY SHALL BE ALLOWED TO PROPERLY CURE PER MANUFACTURER'S SPECIFICATIONS PRIOR TO IMPLEMENTING ANCHOR ROD PULL TEST.

3. CONTRACTOR INSTALLING EPOXY ADHESIVE AND ANCHOR RODS SHALL BE TRAINED BY THE MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE. THIS INCLUDES PROPER DRILLING, HOLE CLEANING, AND INSTALLATION METHODS FOR THE EPOXY ADHESIVE. ALL TRAINING SHALL BE COMPLETED PRIOR TO BEGINNING OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE APPROPRIATE TRAINING. ALL TRAINING COSTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

4. CONTRACTOR SHALL INSTALL RODS AND BRACKETS AT LOCATIONS INDICATED ON DRAWINGS.

5. CONTRACTOR SHALL VERIFY THAT TOWER IS PLUMB PRIOR TO THE INSTALLATION OF ANY TOWER MODIFICATIONS.

6. CONTRACTOR SHALL PROVIDE TOP AND BOTTOM HEAVY HEX NUTS FOR PROPOSED ANCHOR RODS. TOP CONNECTION SHALL BE DOUBLE NUTTED.

7. CARE SHALL BE TAKEN DURING INSTALLATION OF ANCHOR RODS SO THAT EXISTING REINFORCING STEEL AND OR ANCHOR BOLTS ARE NOT DAMAGED. CONTACT ENGINEER IMMEDIATELY IF REINFORCING ENCOUNTERED. CONTRACTOR SHALL NONDESTRUCTIVELY DETERMINE LOCATION AND SIZE OF EXISTING REINFORCING STEEL PRIOR TO INSTALLATION OF ANCHOR RODS. EXISTING REINFORCEMENT INDICATED ON DRAWINGS IS ILLUSTRATIVE. ACTUAL QUANTITY AND LOCATION OF REINFORCEMENT MIGHT DIFFER FROM THAT INDICATED ON THE DRAWINGS.

8. EACH ANCHOR ROD TO BE TESTED SHALL BE PROOF LOADED TO A MAXIMUM OF 73 KIPS. PULL TESTING RESULTS SHALL BE SUPPLIED TO THE TOWER OWNER AND THE ENGINEER OF RECORD (GPD GROUP) FOR REFERENCE IN THE POST INSTALLATION OBSERVATION REPORT.

9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PAUSE CONSTRUCTION AT A POINT WHERE THE ANCHOR RODS CAN BE EFFECTIVELY TESTED. CONSTRUCTION MAY CONTINUE AFTER TESTING IS COMPLETE.

10. HALF OR A MINIMUM OF 4 (WHICHEVER IS GREATER) NEW ANCHOR RODS SHALL BE TESTED.

11. COMPLETE RECORDS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE TEST. MAXIMUM LOAD INCREMENT SHALL BE 15% OF THE PROOF LOAD.

12. PULL TESTING SHALL BE IN ACCORDANCE WITH ASTM E488-96 (RE-APPROVED 2003).

13. IF A DISPLACEMENT GREATER THAN 0.01 INCHES, MEASURED FROM THE BASE LINE, REMAINS AFTER THE FIRST TEST CYCLE, FURTHER TESTS SHALL BE PERFORMED UP TO A MAXIMUM OF 3 TEST CYCLES TO DETERMINE IF ANCHOR ROD MOVEMENT CONTINUES TO ACCUMULATE. TOTAL RESIDUAL MOVEMENT SHALL NOT EXCEED 0.05 INCHES. INCREMENTAL RESIDUAL MOVEMENTS RECORDED FROM EACH TEST CYCLE MUST BE DECREASING IN VALUE AND STABILIZE TO A VALUE NO MORE THAN 0.01 INCHES. ANCHORS NOT MEETING THE TOTAL RESIDUAL MOVEMENT AND/OR THE INCREMENTAL RESIDUAL MOVEMENT LIMITATIONS SHALL BE CONSIDERED TO HAVE FAILED THE TEST.

14. INSTALLATION OF GROUT AND/OR BOTTOM NUT FLUSH TO BASE PLATE IS PROHIBITED PRIOR TO COMPLETION OF ANCHOR ROD PULL TEST.

15. NEW ANCHOR RODS TO BE HOT DIPPED GALVANIZED TO A MINIMUM OF 3" BELOW THE CONCRETE SURFACE.

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82 TYRONE RD
PROMFRET, CT 06258

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2012832.07

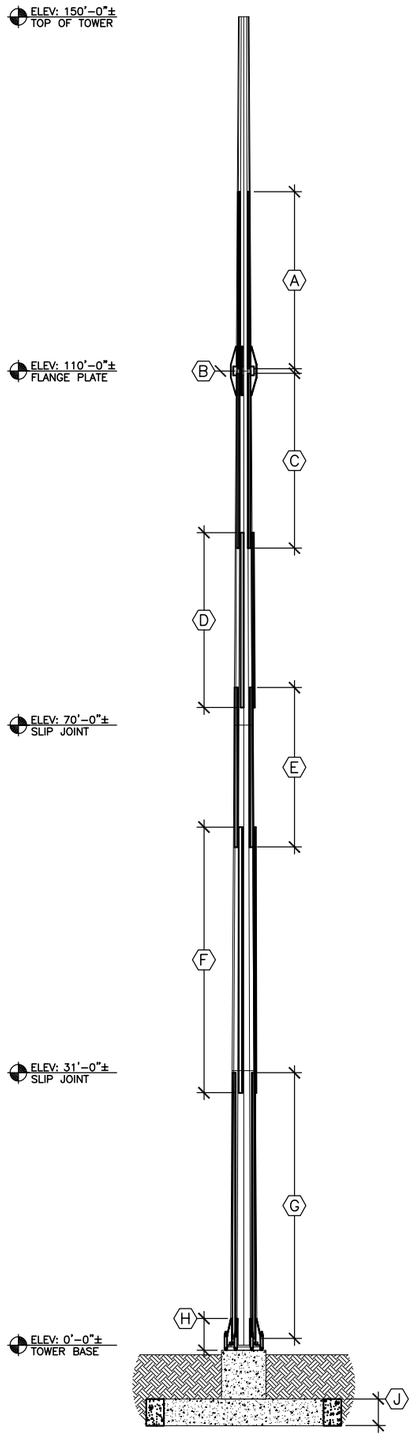
N-01

ANTENNA SCHEDULE

ELEVATION	STATUS	ANTENNA	MOUNT	COAX
	EXISTING	(6) 7770.00	(1) 10'-8" PLATFORM W/ RAILS	(12) 1-1/4"
	EXISTING	(6) LGP21401		
	EXISTING	(6) LGP21903		
152'-0"	**PROIPOSED**	**(1) SBNH-1D6565C**		**(1) 2" CONDUIT**
	PROPOSED	**(2) AM-X-CD-17-65-00T**		**(1) 1/2" FIBER**
	PROPOSED	**(6) RBS 6601**		**(2) 3/4" DC**
	PROPOSED	**(1) DC6-48-60-18-8F**		
100'-0"	EXISTING	(1) DIPOLE (2 ELEMENTS)	(1) FLUSH MOUNT	(1) 1/2"

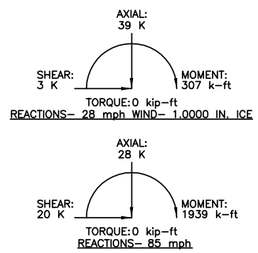
MODIFICATION SCHEDULE

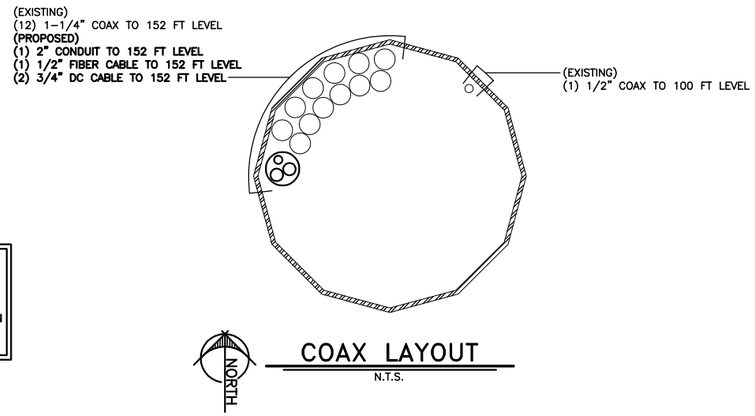
SYMBOL	ELEVATION	MEMBER TYPE	EXISTING MEMBER	NEW MEMBER	NOTES
A	110'-3"± TO 130'-3"±	FLAT PLATES	12 SIDED MONOPOLE	3"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 6/S-04, 7/S-04, & 13/S-05 FOR MORE INFORMATION.
B	110'-0"±	BRIDGE STIFFENERS	–	1-1/4" THICK PLATE	INSTALL BRIDGE STIFFENERS TO EXISTING TOWER SHAFT SEE DETAIL 6/S-04 FOR MORE INFORMATION.
C	90'-0"± TO 109'-9"±	FLAT PLATES	12 SIDED MONOPOLE	4"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 5/S-03, 6/S-04, & 12/S-05 FOR MORE INFORMATION.
D	72'-0"± TO 91'-9"±	FLAT PLATES	12 SIDED MONOPOLE	4"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 4/S-03, 5/S-03, & 11/S-05 FOR MORE INFORMATION.
E	56'-3"± TO 74'-3"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 3/S-03, 4/S-03, & 10/S-05 FOR MORE INFORMATION.
F	28'-6"± TO 58'-6"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 2/S-03, 3/S-03, & 9/S-05 FOR MORE INFORMATION.
G	0'-9"± TO 30'-9"±	FLAT PLATES	12 SIDED MONOPOLE	5"x1-1/4" THICK PLATE	INSTALL FLAT PLATES TO EXISTING TOWER SHAFT. SEE DETAIL 1/S-02, 2/S-03, & 8/S-05 FOR MORE INFORMATION.
H	0'-0"± TO 3'-0"±	ANCHOR RODS W/BRACKETS	(8) 2-1/4"ø RODS	(8) 1-1/2"ø RODS W/BRACKETS	INSTALL ANCHOR RODS WITH BRACKETS TO THE EXISTING TOWER BASE. SEE DETAIL 1/S-02 FOR MORE INFORMATION.
J	GRADE	FOUNDATION COLLAR	PAD & PIER	CONCERT COLLAR	INSTALL CONCRETE COLLAR TO EXISTING TOWER FOUNDATION. SEE SHEET F-01 FOR MORE INFORMATION.



TOWER ELEVATION
1/8"=1'-0"

NOTE: FLAT NUMBERS DEPICTED IN THIS DRAWING MAY VARY FROM THE NUMBERING IN THE FIELD. CONTRACTOR MAY ADJUST FLAT NUMBERS TO MATCH EXISTING FIELD CONDITIONS. MODIFICATIONS SHALL BE INSTALLED IN THE APPROPRIATE ORIENTATION AND/OR LOCATION REGARDLESS OF THE NUMBERING SHOWN ON THE DRAWINGS.





COAX LAYOUT
N.T.S.

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

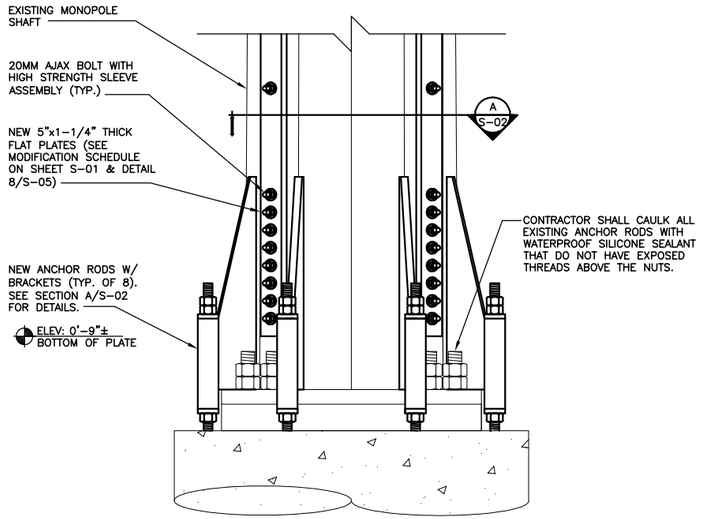
TOWER ELEVATION & MODIFICATION SCHEDULE

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

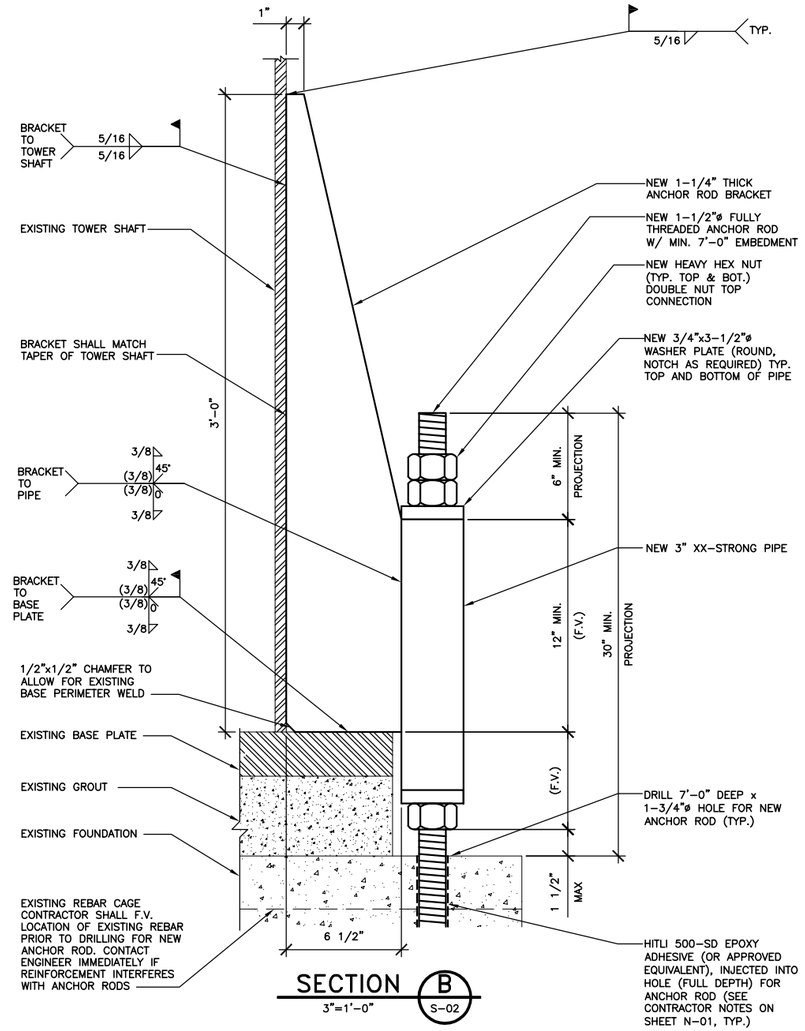
PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO.
2012832.07

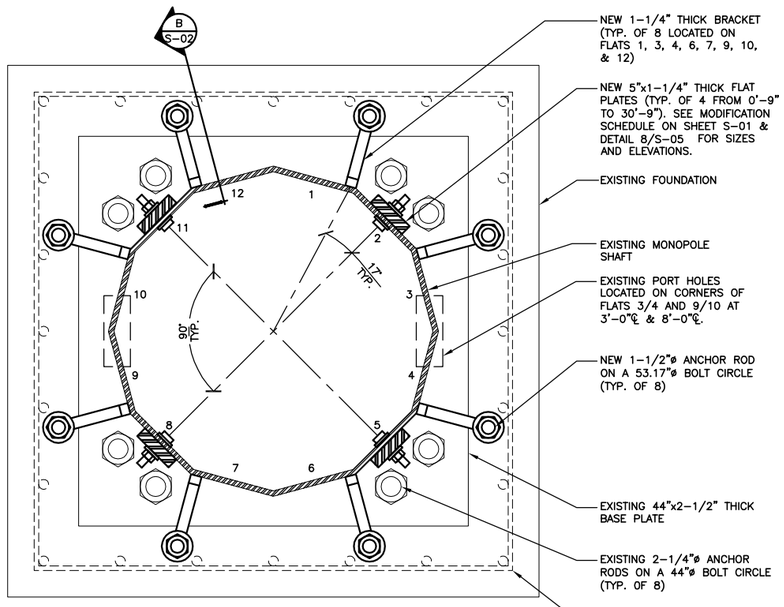
S-01



DETAIL 1 — 1"=1'-0" — S-02



SECTION B — 3"=1'-0" — S-02



SECTION A — 1-1/2"=1'-0" — S-02

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

NOTE: FLAT NUMBERS DEPICTED IN THIS DRAWING MAY VARY FROM THE NUMBERING IN THE FIELD. CONTRACTOR MAY ADJUST FLAT NUMBERS TO MATCH EXISTING FIELD CONDITIONS. MODIFICATIONS SHALL BE INSTALLED IN THE APPROPRIATE ORIENTATION AND/OR LOCATION REGARDLESS OF THE NUMBERING SHOWN ON THE DRAWINGS.

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

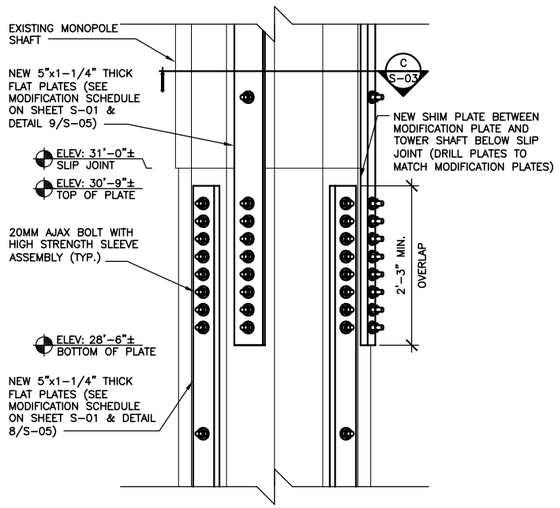
MODIFICATION SECTIONS & DETAILS

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

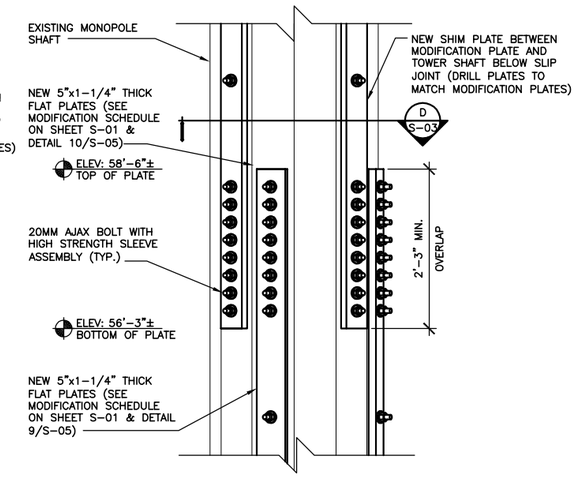
PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO. 2012832.07

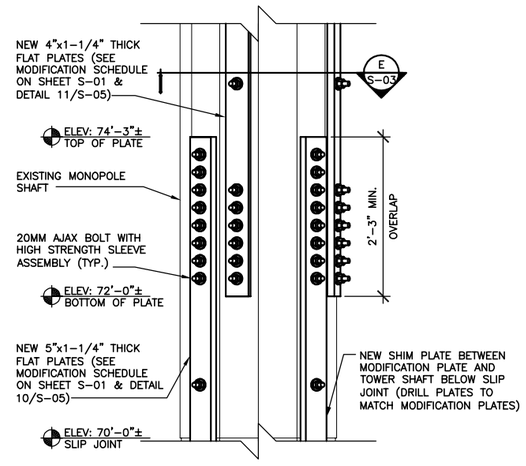
S-02



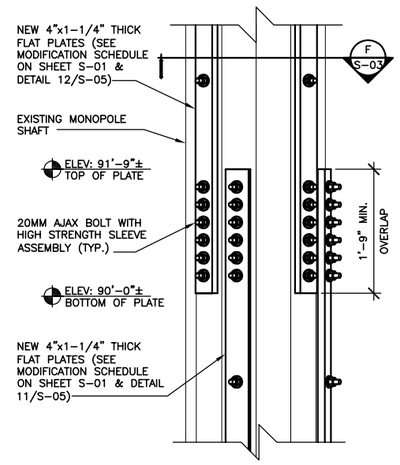
DETAIL 2 S-03
1"=1'-0"



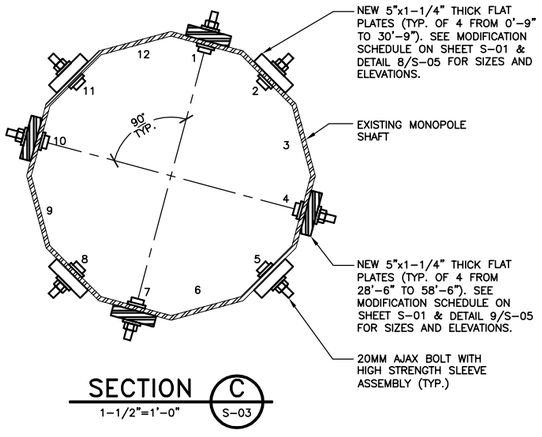
DETAIL 3 S-03
1"=1'-0"



DETAIL 4 S-03
1"=1'-0"

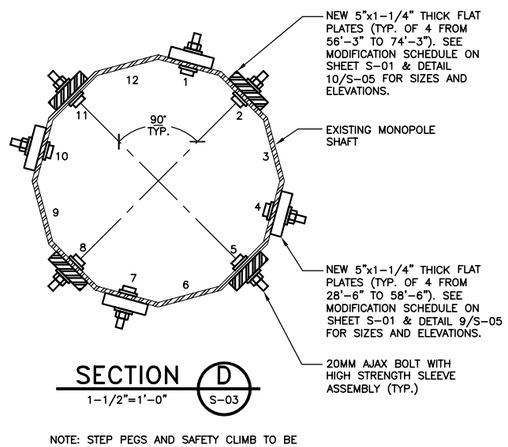


DETAIL 5 S-03
1"=1'-0"



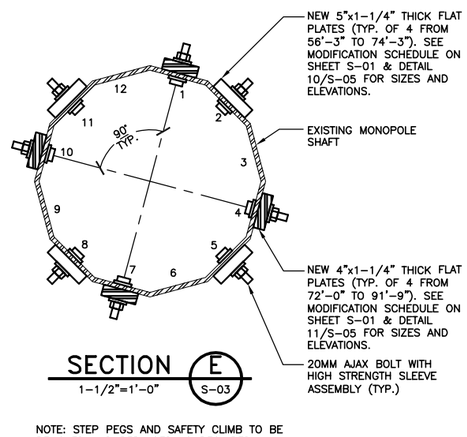
SECTION C S-03
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.



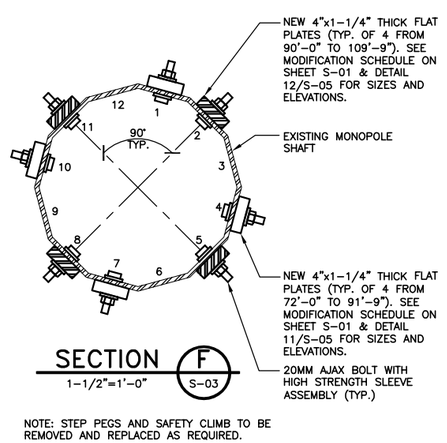
SECTION D S-03
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.



SECTION E S-03
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.



SECTION F S-03
1-1/2"=1'-0"

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

NOTE: FLAT NUMBERS DEPICTED IN THIS DRAWING MAY VARY FROM THE NUMBERING IN THE FIELD. CONTRACTOR MAY ADJUST FLAT NUMBERS TO MATCH EXISTING FIELD CONDITIONS. MODIFICATIONS SHALL BE INSTALLED IN THE APPROPRIATE ORIENTATION AND/OR LOCATION REGARDLESS OF THE NUMBERING SHOWN ON THE DRAWINGS.

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

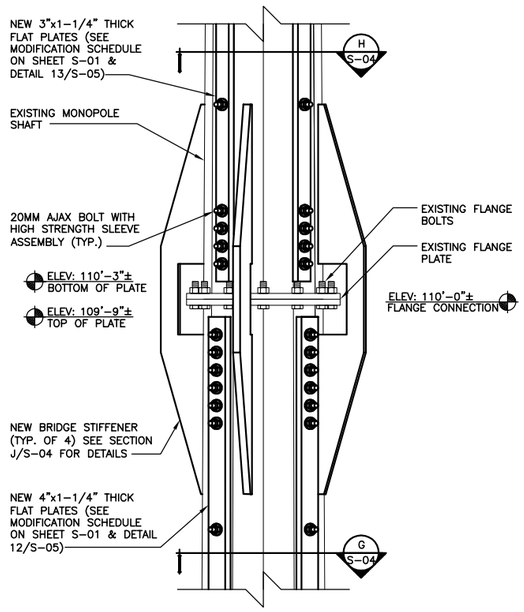
ADDITIONAL SECTIONS & DETAILS

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

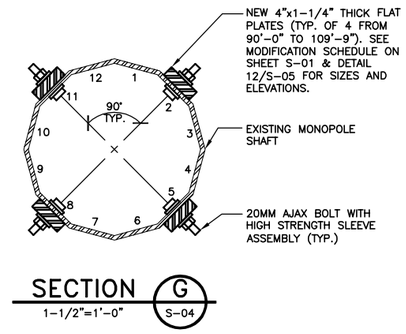
PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO. 2012832.07

S-03

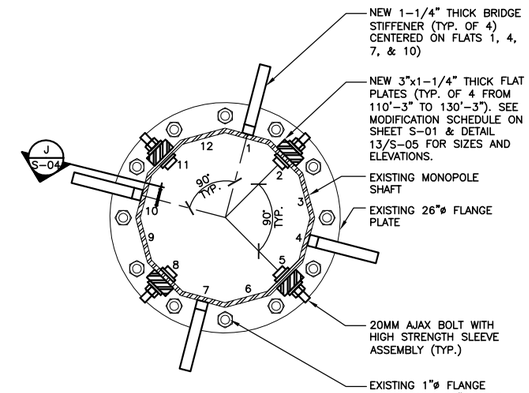


DETAIL 6
1"=1'-0"



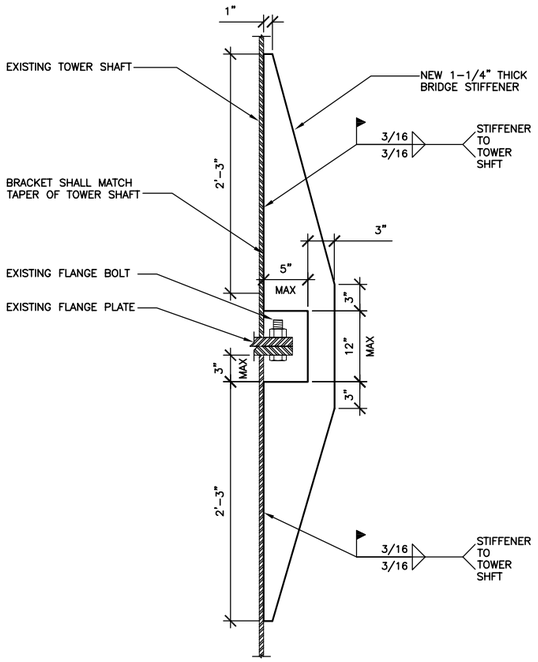
SECTION G
1-1/2"=1'-0"
S-04

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

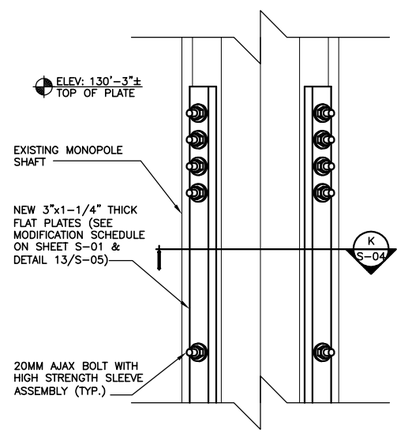


SECTION H
1-1/2"=1'-0"
S-04

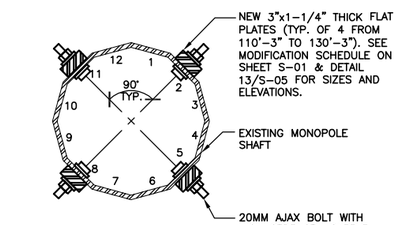
NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.



SECTION J
1-1/2"=1'-0"
S-04



DETAIL 7
1"=1'-0"
S-04



SECTION K
1-1/2"=1'-0"
S-04

NOTE: STEP PEGS AND SAFETY CLIMB TO BE REMOVED AND REPLACED AS REQUIRED.

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

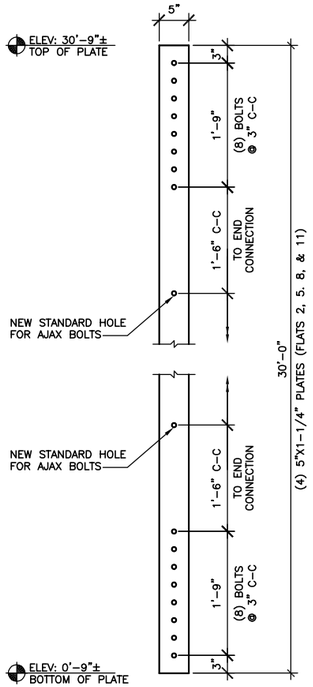
ADDITIONAL SECTIONS & DETAILS

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

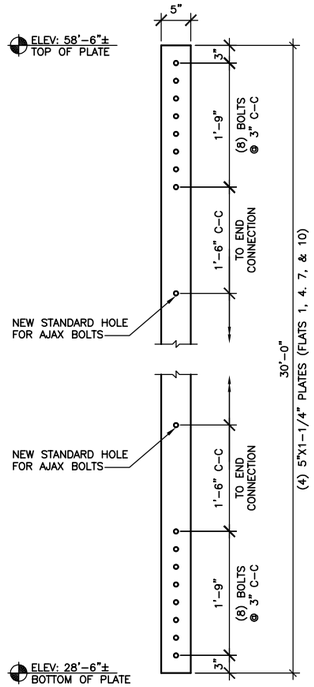
PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO.
2012832.07

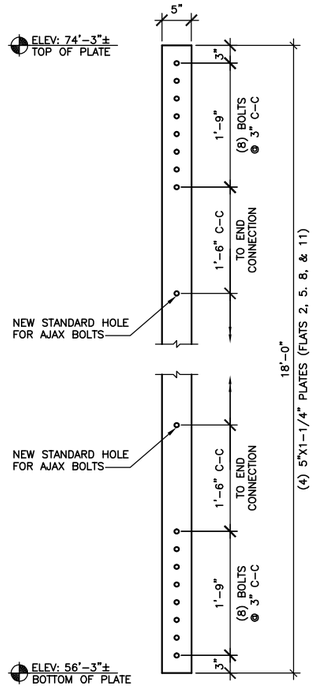
S-04



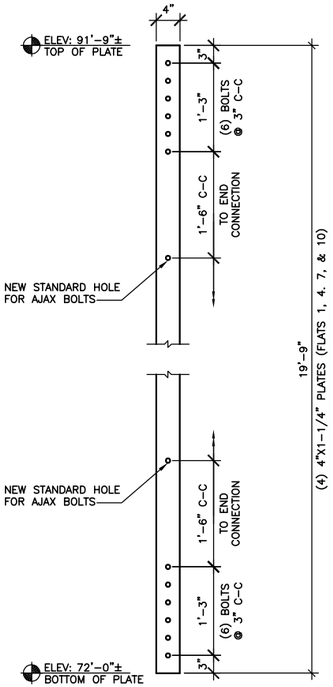
DETAIL 8
1"=1'-0"
S-05



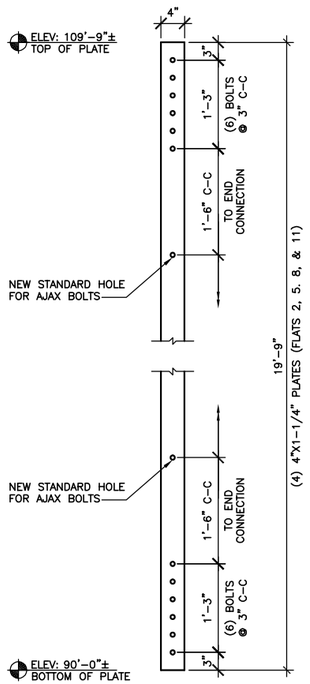
DETAIL 9
1"=1'-0"
S-05



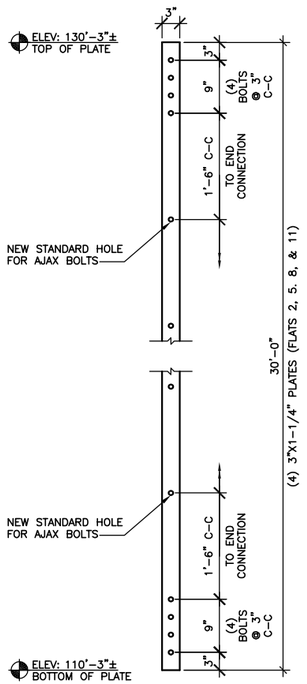
DETAIL 10
1"=1'-0"
S-05



DETAIL 11
1"=1'-0"
S-05



DETAIL 12
1"=1'-0"
S-05



DETAIL 13
1"=1'-0"
S-05

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

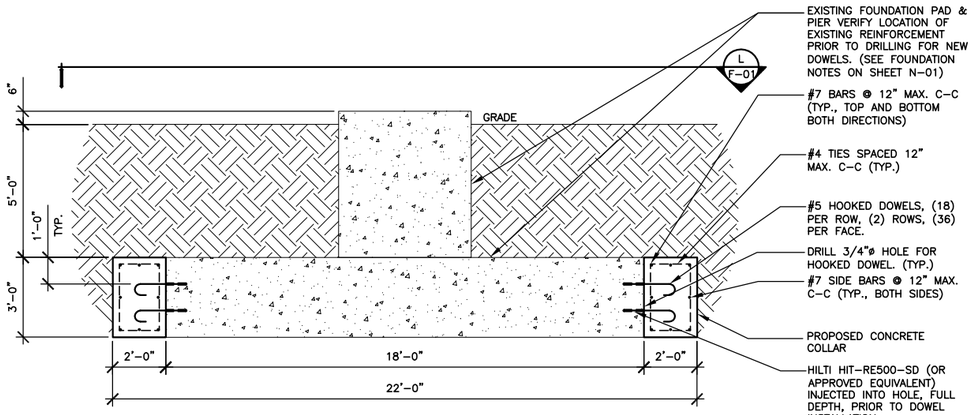
MODIFICATION FLAT PLATE DETAILS

01/04/13
-
-
-

PROJECT MANAGER	DESIGNER
DMH	JDF

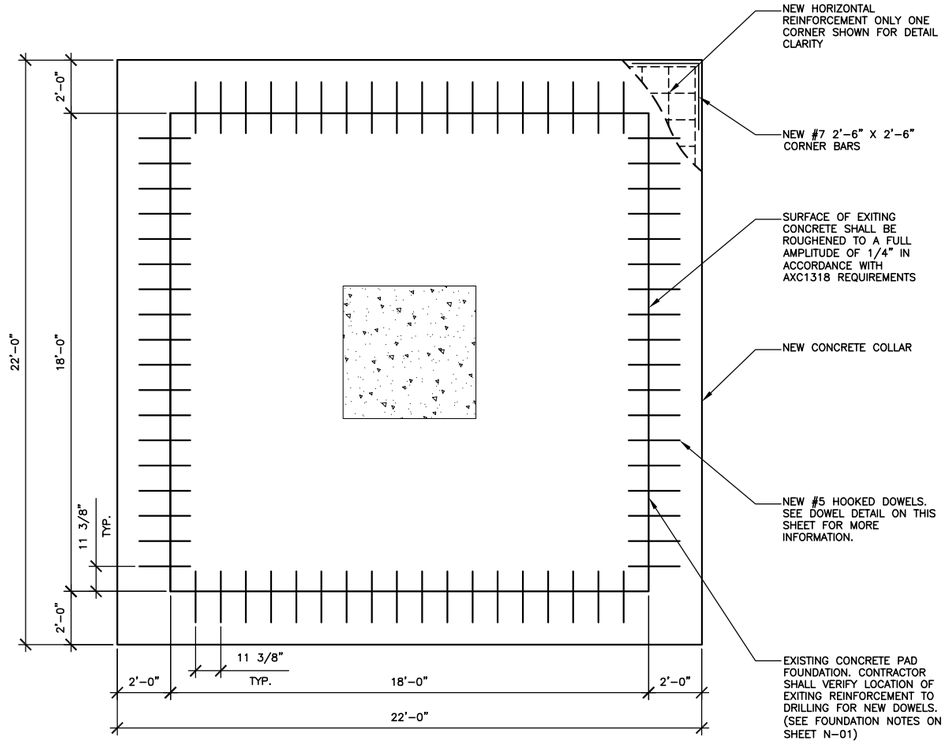
2012832.07

S-05

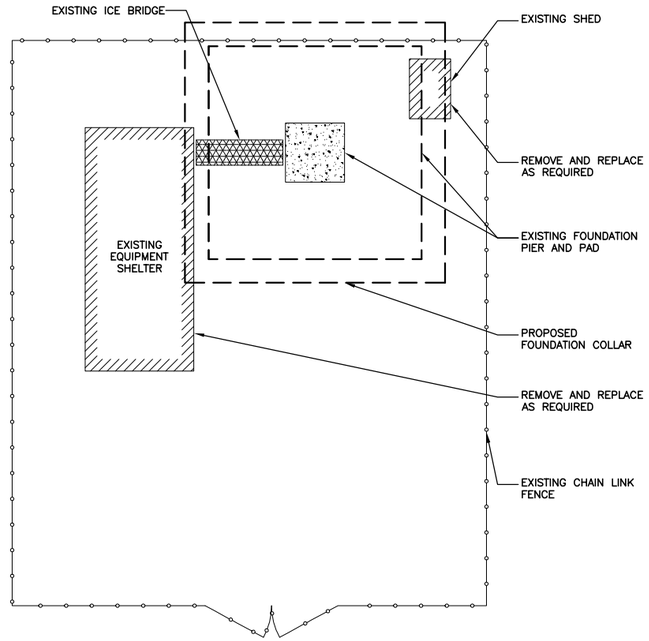


DETAIL 14
3/8"=1'-0" — F-01

EXISTING FOUNDATION IS BEING EXCAVATED. CONTRACTOR IS RESPONSIBLE FOR SUPPORTING TOWER DURING ALL PHASES OF CONSTRUCTION. SEE CONTRACTOR FOUNDATION NOTES ON SHEET N-01.



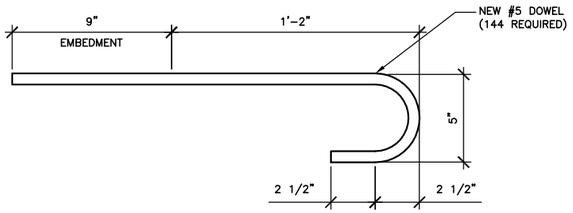
SECTION L
3/8"=1'-0" — F-01



PARTIAL SITE PLAN
N.T.S.

ALL SITE LAYOUT AND FOUNDATION ORIENTATION INFORMATION IS CONSIDERED APPROXIMATE. CONTRACTOR SHALL VERIFY ALL SITE DIMENSIONS, ORIENTATION, AND UTILITY LOCATIONS PRIOR TO MOBILIZING **(SEE NOTES ON SHEET N-01)**

CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING PUBLIC AND PRIVATE UTILITIES PRIOR TO EXCAVATION. IF NECESSARY UTILITIES SHALL BE RELOCATED PRIOR TO FOUNDATION MODIFICATION. UTILITIES SHALL NOT BE ENCASED IN CONCRETE.



DOWEL DETAIL
3"=1'-0"

Know what's below
Call before you dig.

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REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

FOUNDATION DETAILS & PARTIAL SITE PLAN

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO. 2012832.07

F-01

MODIFICATION INSPECTION CHECKLIST

BEFORE CONSTRUCTION		DURING CONSTRUCTION		AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM	CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM	CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
X	MODIFICATION INSPECTION CHECKLIST DRAWING	X	CONSTRUCTION INSPECTIONS	X	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWING(S)
X	ENGINEER OF RECORD APPROVED SHOP DRAWINGS	X	FOUNDATION INSPECTIONS	X	POST INSTALLED ANCHOR ROD PULL–OUT TESTING
X	FABRICATION INSPECTION	X	CONCRETE COMP. STRENGTH AND SLUMP TESTS	X	PHOTOGRAPHS
X	FABRICATOR CERTIFIED WELD INSPECTION	X	POST INSTALLED ANCHOR ROD VERIFICATION	ADDITIONAL TESTING AND INSPECTIONS:	
X	MATERIAL TEST REPORT	X	BASE PLATE GROUT VERIFICATION		
X	FABRICATOR NDE INSPECTION	X	CONTRACTOR'S CERTIFIED WELD INSPECTION		
X	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)	X	EARTHWORK: LIFT AND DENSITY		
X	PACKING SLIPS	X	ON SITE COLD GALVANIZING VERIFICATION		
ADDITIONAL TESTING AND INSPECTIONS:		—	GUY WIRE TENSION REPORT		
		X	GC AS–BUILT DOCUMENTS		
		ADDITIONAL TESTING AND INSPECTIONS:			

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MODIFICATION INSPECTION REPORT
— DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MODIFICATION INSPECTION REPORT

MODIFICATION INSPECTION NOTES:

GENERAL

1. THE MODIFICATION INSPECTION IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD.

2. THE MODIFICATION INSPECTION IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MODIFICATION INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTENT RESIDES WITH THE ENGINEER OF RECORD AT ALL TIMES.

3. TO ENSURE THAT THE REQUIREMENTS OF THE MODIFICATION INSPECTION ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MODIFICATION INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO OR PAYMENT IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. CONTACT LISTED ON THE TITLE SHEET SHALL BE CONTACTED IF SPECIFIC INSPECTOR CONTACT INFORMATION IS NOT KNOWN.

MODIFICATION INSPECTOR

1. THE MODIFICATION INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSPECTION TO:

- –REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
- –WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON–SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- –DISCUSS ANY SITE SPECIFIC INSPECTIONS OR CONCERNS

2. THE MODIFICATION INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN–FIELD INSPECTIONS, AND SUBMITTING THE MODIFICATION INSPECTION REPORT.

GENERAL CONTRACTOR

1. THE GC IS REQUIRED TO CONTACT THE MODIFICATION INSPECTOR AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO:

- –REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
- –WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON–SITE MODIFICATION INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- –BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

2. THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

RECOMMENDATIONS

1. THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MODIFICATION INSPECTION REPORT:

- –IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MODIFICATION INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MODIFICATION INSPECTION TO BE CONDUCTED.
- –THE GC AND MODIFICATION INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- –WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MODIFICATION INSPECTOR ON–SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE–TENSIONING OPERATIONS.
- –IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MODIFICATION INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- –WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MODIFICATION INSPECTOR ON–SITE DURING THE MODIFICATION INSPECTION TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MODIFICATION INSPECTION. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MODIFICATION INSPECTION CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MODIFICATION INSPECTION

1. IF THE GC AND MODIFICATION INSPECTOR AGREE TO A DATE ON WHICH THE MODIFICATION INSPECTION WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, THE TOWER OWNER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON–SITE, ETC.). EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MODIFICATION INSPECTION

1. IF THE MODIFICATION INSTALLATION WOULD FAIL THE MODIFICATION INSPECTION ("FAILED MODIFICATION INSPECTION"), THE GC SHALL WORK WITH MODIFICATION INSPECTOR TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- –CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MODIFICATION INSPECTION.
- –OR, WITH TOWER OWNER'S APPROVAL, THE GC MAY WORK WITH THE ENGINEER OF RECORD TO RE–ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS–BUILT CONDITION.

VERIFICATION INSPECTIONS

1. TOWER OWNER RESERVES THE RIGHT TO CONDUCT A VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MODIFICATION INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

2. VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MODIFICATION INSPECTION" OR "PASS AS NOTED MODIFICATION INSPECTION" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS

1. BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS ARE TO BE TAKEN AND INCLUDED IN THE MODIFICATION INSPECTION REPORT:

- –PRE–CONSTRUCTION GENERAL SITE CONDITION
- –PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- –POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION
- –ANY OTHER PHOTOS DEEMED RELEVANT TO SHOW COMPLETE DETAILS OF MODIFICATIONS

2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

GPD GROUP
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330.572.2100 330.572.2101

at&t

REV.	DATE	DESCRIPTION

71304-POMFRET-TYRONE RD
82 TYRONE RD
PROMFRET, CT 06258

MODIFICATION INSPECTION & CHECKLIST

ISSUED FOR:	
PERMIT	01/04/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
DMH	JDF

JOB NO. 2012832.07

MI-01