EM-CING-137-110712

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

HAND DELIVERED

July 11, 2011

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located 811 Stongington Road Stonington, CT (SBA).

Dear Ms. Roberts:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, LTE will utilize additional radio frequencies newly-licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 463-5511 with questions concerning this matter. Thank you for your consideration.

Sincerely,

Douglas L. Culp
Real Estate Consultant

Attachments

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

811 Stonington Road Stonington, CT
Site Number 2224
Exempt Mod

Tower Owner/Manager: SBA

Equipment configuration: Stealth Unipole

Current and/or approved: Three EMS Antennas @ 125 ft
Twelve runs 7/8 inch coax to 125 ft
Equipment Shelter

Planned Modifications: Remove existing EMS Antenna's @ 125 ft
Retain all Coax Cabling
Install three KMW 14-65 antennas or equivalent @ 125 ft
Install three Andrew TMA's ETW190VS12UB or equivalent @ 125 ft
Install six PowerWave Diplexers CM1007-DBPXBC @ 125 ft
Remove existing 24 inch radome and replace with 30 inch to accommodate me antennas and associated equipment

Power Density:

Worst-case calculations for existing wireless operations at the site, using standard parameters for other carriers, indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the Tower, of 36.1 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 38.5 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users							20.16
AT&T UMTS	125	1900 Band	1	500	0.0115	1.0000	1.15
AT&T UMTS	125	800 Band	1	500	0.0115	0.5867	1.96
AT&T GSM	125	800Band	6	296	0.0409	0.5867	6.97
AT&T GSM	125	1900 Band	6	427	0.0590	1.0000	5.90
Total							**36.1%**

* Data for other users are from Siting Council records.

Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users							20.16
AT&T UMTS	125	800 Band	1	500	0.0115	0.5867	1.96
AT&T UMTS	125	1900 Band	1	500	0.0115	1.0000	1.15
AT&T GSM	125	1900 Band	6	427	0.0590	1.0000	5.90
AT&T GSM	125	880 - 894	6	296	0.0409	0.5867	6.97
AT&T LTE	125	740 - 746	1	500	0.0115	0.4933	2.33
Total							**38.5%**

* Data for other users are from Siting Council records.

Structural information:

The attached structural analysis demonstrates that the monopole and foundation ***do not*** have adequate structural capacity to accommodate the proposed modifications without the proposed modifications from SBA/FDH Engineering dated 6-24-11; structural by FDH Engineering dated 5-20-11.

THE MODIFICATIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC., PROJECT NO. 11-04387E S1 DATED MAY 20, 2011

THIS REPORT WAS BASED ON A SPECIFIC ANTENNA AND COAX CONFIGURATION PROVIDED BY THE TOWER OWNER. ANY CHANGE TO THIS INFORMATION MUST BE REVIEWED BY FDH ENGINEERING, INC.

ALL DIMENSIONS, MEASUREMENTS, QUANTITIES, PART NUMBERS AND COAX/ANTENNA PLACEMENTS TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO MATERIAL ORDERS AND CONSTRUCTION.

PROJECT DESCRIPTION:

MODIFICATION DRAWINGS FOR A 150' STEALTH MONOPOLE

SBA

SITE NAME:

NORTH STONINGTON 2

SITE NUMBER:

CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

COORDINATES:
LATITUDE: 41.3534°
LONGITUDE: -71.8870°

SHEET INDEX

PREPARED BY:
FDH ENGINEERING
2730 ROWLAND RD.
RALEIGH, NC 27615
PHONE: (919) 755-1012
FAX: (919) 755-1031

PREPARED FOR:
SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800) 487-SITE

FOR BID ONLY

CHRISTOPHER M. MURPHY, P.E.
CONNECTICUT LIC. NO. 25842

DRAWN BY:	OP
CHECKED BY:	DC
ENG APPV'D:	CMM
PROJECT NO:	11-04387E S2

SUBMITTALS

DATE	DESCRIPTION	REV.
08/24/11	PRELIMINARY REVIEW	A

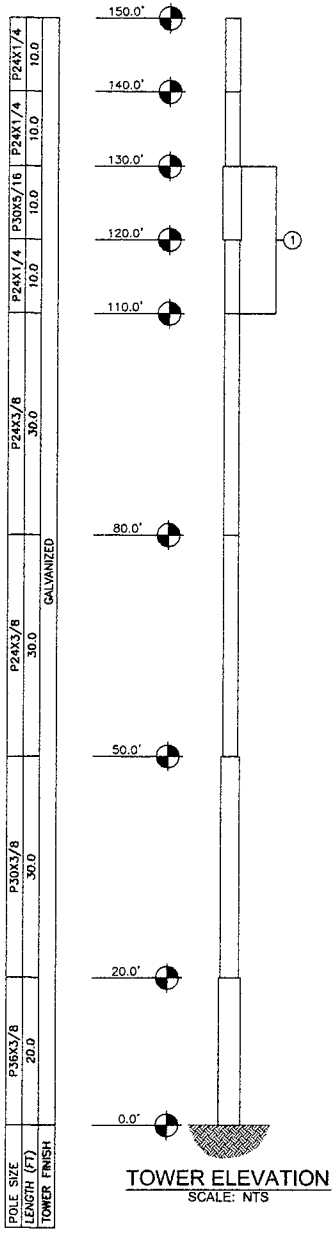
SITE NAME:
NORTH STONINGTON 2

SITE NUMBER:
CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



TOWER ELEVATION
SCALE: NTS

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO FDH ENGINEERING FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
3. INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO FDH ENGINEERING PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE FDH ENGINEERING APPROVAL.
4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.

CONTRACTOR QUALIFICATION NOTES:

1. ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE TIA/EIA 222-F "STRUCTURAL STANDARD FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, FDH ENGINEERING, INC. IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
3. ALL SUBMITTAL INFORMATION MUST BE SENT TO FDH ENGINEERING, INC. 2730 ROWLAND ROAD, RALEIGH NC, 27615, TEL. (919) 755-1012, FAX. (919) 755-1031, E-MAIL INFO@FDH-INC.COM. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM FDH ENGINEERING, INC. WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS FDH ENGINEERING, INC.

JOB SITE SAFETY & NOTES:

1. NEITHER THE PROFESSIONAL ACTIVITIES OF FDH ENGINEERING, INC. NOR THE PRESENCE OF FDH ENGINEERING, INC. OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

SUBSTITUTES AND/OR EQUALS:

1. IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE, ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BOTTOM ELEV. (FT)	TOP ELEV. (FT)
1	INSTALLATION OF 5000 PSI GROUT INSIDE INTERNAL POLE SHAFT. SEE S-2 FOR DETAILS.	110.0±	130.0±

CORRECTION OF FAILING MODIFICATION INSPECTIONS (MI):

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

1. CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
   1.1. IF A MI RE-VISIT IS REQUIRED, THE GC IS RESPONSIBLE FOR THE ASSOCIATED COST.
2. OR, WITH FDH'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

REQUIRED PHOTOS:

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE CLOSE OUT DOCUMENTS:

1. PRE-CONSTRUCTION GENERAL SITE CONDITION
2. PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION:
   2.1. RAW MATERIALS
   2.2. PHOTOS OF ALL CRITICAL DETAILS
   2.3. WELD PREPARATION
   2.4. FINAL INSTALLED CONDITION
   2.5. SURFACE COATING REPAIR
3. POST CONSTRUCTION PHOTOGRAPHS:
   3.1. FINAL INFIELD CONDITION

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

GROUT:

1. WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. AS A MINIMUM, GROUT SHALL DEVELOP A COMPRESSIVE STRENGTH OF 5000 PSI MIN. IN 28 DAYS.
3. GROUT SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF GROUT MATERIALS.
4. LOOSE MATERIAL SHALL BE REMOVED PRIOR TO GROUT PLACEMENT. ANY FAYING SURFACES MUST BE FREE OF DIRT, GREASE, SCALE, ETC., AND UNSOUD GROUT MUST BE CHIPPED OUT.
5. MATERIAL SPECIFICATIONS SHALL BE IN ACCORDANCE WITH ASTM C1107-02, STANDARD SPECIFICATIONS FOR PACKAGED DRY, HYDRAULIC-CEMENT GROUT (NONSHRINK).
6. LEVELING NUT TIGHTNESS CHECK: WHEN CHECKING FOR NUT TIGHTNESS, ALWAYS TURN THE SPUD WRENCH IN THE DIRECTION TO TIGHTEN THE NUT AGAINST THE BASE PLATE. USING THE SPUD WRENCH AND THE FULL EFFORT OF A PERSON, CHECK THE LEVELING NUT FOR TIGHTNESS AND THE NUT ATOP THE BASE PLATE FOR TIGHTNESS.
7. PLACEMENT TEMPERATURES AND CURING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE A MINIMUM OF (2) DRAIN HOLES, EQUALLY SPACED, THROUGH GROUT FROM INSIDE OF MONOPOLE USING NON-METALLIC PIPE. PIPE TO BE 1" DIAMETER OR SMALLER IF CLEARANCE DICTATES.
9. THE GROUT SHALL BE INSTALLED TO PROVIDE BEARING TO THE ENTIRE BASE PLATE SURFACE.

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS.
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION.
- ANTENNA GRAPHICS NOT SHOWN FOR CLARITY. SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING ANTENNA LOADING.

SURFACE PREPARATION:

1. PREPARE SURFACE TO BE WELDED BY REMOVING PAINT OR GALVANIZATION TO BARE METAL USING POWER WIRE BRUSHING IN ACCORDANCE WITH SSPC-SP11, (STEEL STRUCTURES PAINTING COUNCIL). FOLLOWING POWER WIRE BRUSHING CONTRACTOR SHALL POLISH METAL SURFACE WITH HIGH SPEED GRINDER WITH 400+ GRIT SANDPAPER.
2. AFTER NEW STEEL INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF ZRC OR ZINGA COLD GALVANIZATION COMPOUND PER MANUFACTURER'S SPECIFICATIONS.

WELDING NOTES:

1. ALL WELDING TO THE EXISTING TOWER SHALL BE PERFORMED BY CERTIFIED WELDERS UTILIZING PROCEDURES QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND AWS C5.4.
2. CONTRACTOR SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". CONTRACTOR SHALL SUBMIT CERTIFICATION OF WELDERS TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.
3. CONTRACTOR RESPONSIBLE FOR TEMPORARY HEAT SHIELDING AS REQUIRED DURING WELDING.
4. CONTRACTOR RESPONSIBLE FOR VIEWING EXISTING TOWER FOR LOOSE AND FLAMMABLE MATERIAL PRIOR TO WELDING FLAT PLATE.
5. ALL WELDS TO BE VISUALLY INSPECTED BY A CERTIFIED WELD INSPECTOR PER AWS D1.1.

MISC. NOTES:

1. ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
2. CONTRACTOR FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

PREPARED BY:
FDH ENGINEERING
2730 ROWLAND RD.
RALEIGH, NC 27615
PHONE: (919) 755-1012
FAX: (919) 755-1031

PREPARED FOR:
SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800) 487-SITE

FOR BID ONLY

CHRISTOPHER M. MURPHY, P.E.
CONNECTICUT LIC. NO. 25842

DRAWN BY:	OP
CHECKED BY:	DC
ENG APP'VD:	CMM
PROJECT NO:	11-04387E_S2

SUBMITTALS

DATE	DESCRIPTION	REV
08/24/11	PRELIMINARY/REVIEW	A

SITE NAME:
NORTH STONINGTON 2

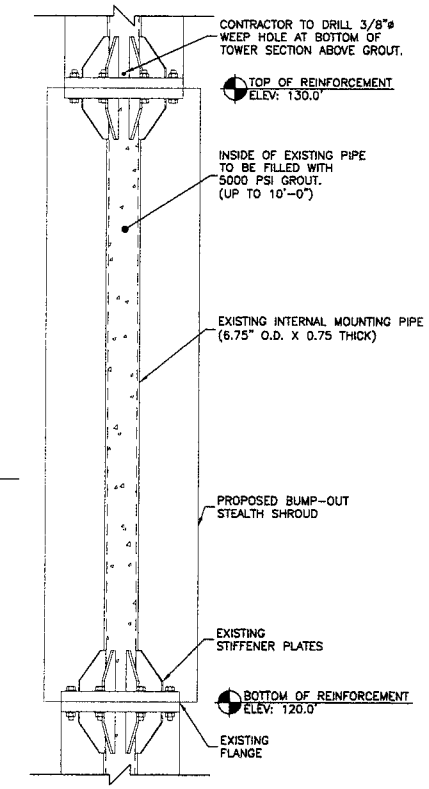
SITE NUMBER:
CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
GENERAL NOTES
&
MODIFICATION SCHEDULE

SHEET NUMBER
S-1

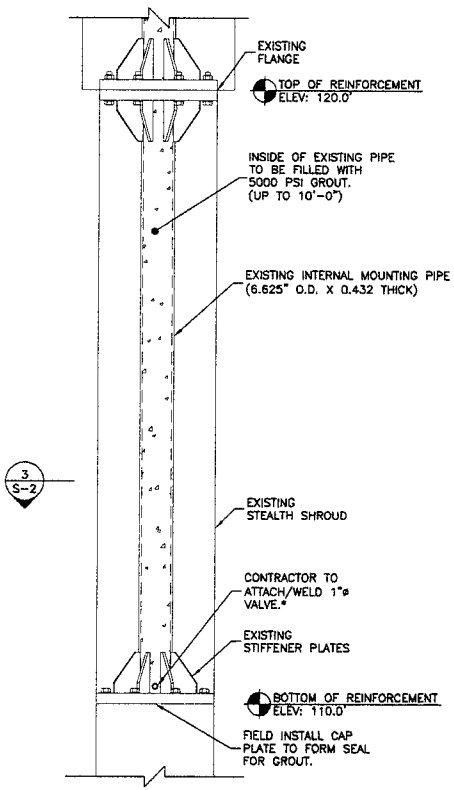
CONTRACTOR MAY BE REQUIRED TO INSTALL TEMPORARY CAP PLATE ON BASE OF PIPE PRIOR TO INSTALLING GROUT TO FORM SEAL.



NEW GROUT REINFORCEMENT ELEVATION VIEW (120.0' TO 130.0')

1 / S-2 ELEVATION

SCALE: 1/2" = 1'-0"



NEW GROUT REINFORCEMENT ELEVATION VIEW (110.0' TO 120.0')

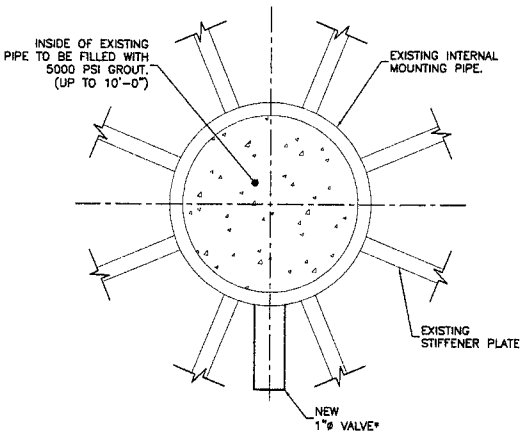
2 / S-2 ELEVATION

SCALE: 1/2" = 1'-0"

*CONTRACTOR TO PUMP GROUT THROUGH NEW 1"Ø VALVE.

GROUT REINFORCMENT MATERIAL LIST

PART NO.	TYPE	QTY	LENGTH	DESCRIPTION
-		3.3± CU. FT	N/A	5000 PSI GROUT



NEW GROUT REINFORCEMENT SECTION VIEW

3 / S-2 SECTION

NTS

PREPARED BY:
FDH ENGINEERING
2730 ROWLAND RD.
RALEIGH, NC 27615
PHONE: (919) 755-1012
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PREPARED FOR:
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(800) 487-SITE

FOR BID ONLY

CHRISTOPHER M. MURPHY, P.E.
CONNECTICUT LIC. NO. 25842

DRAWN BY:	OP
CHECKED BY:	DC
ENG APPV'D:	CMM
PROJECT NO:	11-04387E S2

SUBMITTALS

DATE	DESCRIPTION	REV
06/24/11	PRELIMINARY/REVIEW	A

SITE NAME:
NORTH STONINGTON 2

SITE NUMBER:
CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
GROUT REINFORCEMENT INSTALLATION DETAILS

SHEET NUMBER
S-2

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
SITE ADDRESS:	811 STONINGTON ROAD STONINGTON, CT 06378
LATITUDE:	41.353411° N 41° 21' 12.28" N
LONGITUDE:	−71.8868° W −71° 53' 12.48" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NOC#	866−915−5600

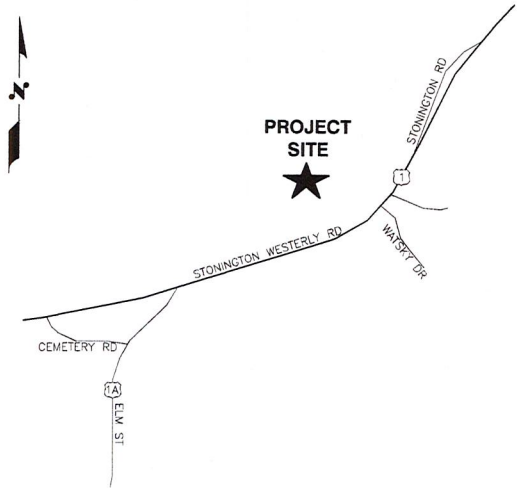
at&t

SITE NUMBER: CT2224
SITE NAME: STONINGTON SOUTH

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. MERGE ONTO I−91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 1.4 MI. MERGE ONTO CT−9 S VIA EXIT 22S ON THE LEFT TOWARD MIDDLETOWN / OLD SAYBROOK. 29.3 MI. MERGE ONTO I−95 N VIA THE EXIT ON THE LEFT TOWARD NEW LONDON / PROVIDENCE. 26.2 MI. TAKE THE CT−234 EXIT, EXIT 91, TOWARD NO. MAIN ST / STONINGTON BOROUGH. 0.2 MI. TURN RIGHT ONTO CT−234 / PEQUOT TRL. 0.3 MI. TURN LEFT ONTO N MAIN ST. 1.6 MI. TURN LEFT ONTO STONINGTON WESTERLY RD / US−1. 0.9 MI. END AT STONINGTON WESTERLY RD; US−1.



GENERAL NOTES

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

72 HOURS

BEFORE YOU DIG

CALL TOLL FREE 800−922−4455

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2224
SITE NAME: STONINGTON SOUTH

811 STONINGTON ROAD
STONINGTON, CT 06378
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	07/11/11	ISSUED FOR CONSTRUCTION	DD	DC	DPH
1	04/08/11	ISSUED FOR CONSTRUCTION	HC	DC	DPH
0	11/09/10	ISSUED FOR REVIEW	RH	DC	DPH

SCALE: AS SHOWN DESIGNED BY: DC DRAWN BY: RH

Daniel P Hamm
No. 24175
LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
2224.01	T−1	2

GROUNDING NOTES

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR - SAI
   SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER - AT&T MOBILITY

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

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

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

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

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

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

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

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

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

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

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

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

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

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

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

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

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
   BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
   ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
   LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

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

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

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SAI communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2224
SITE NAME: STONINGTON SOUTH

811 STONINGTON ROAD
STONINGTON, CT 06378
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	07/11/11	ISSUED FOR CONSTRUCTION	DD	DC	DPH
1	04/08/11	ISSUED FOR CONSTRUCTION	HC	DC	DPH
0	11/09/10	ISSUED FOR REVIEW	RH	DC	DPH

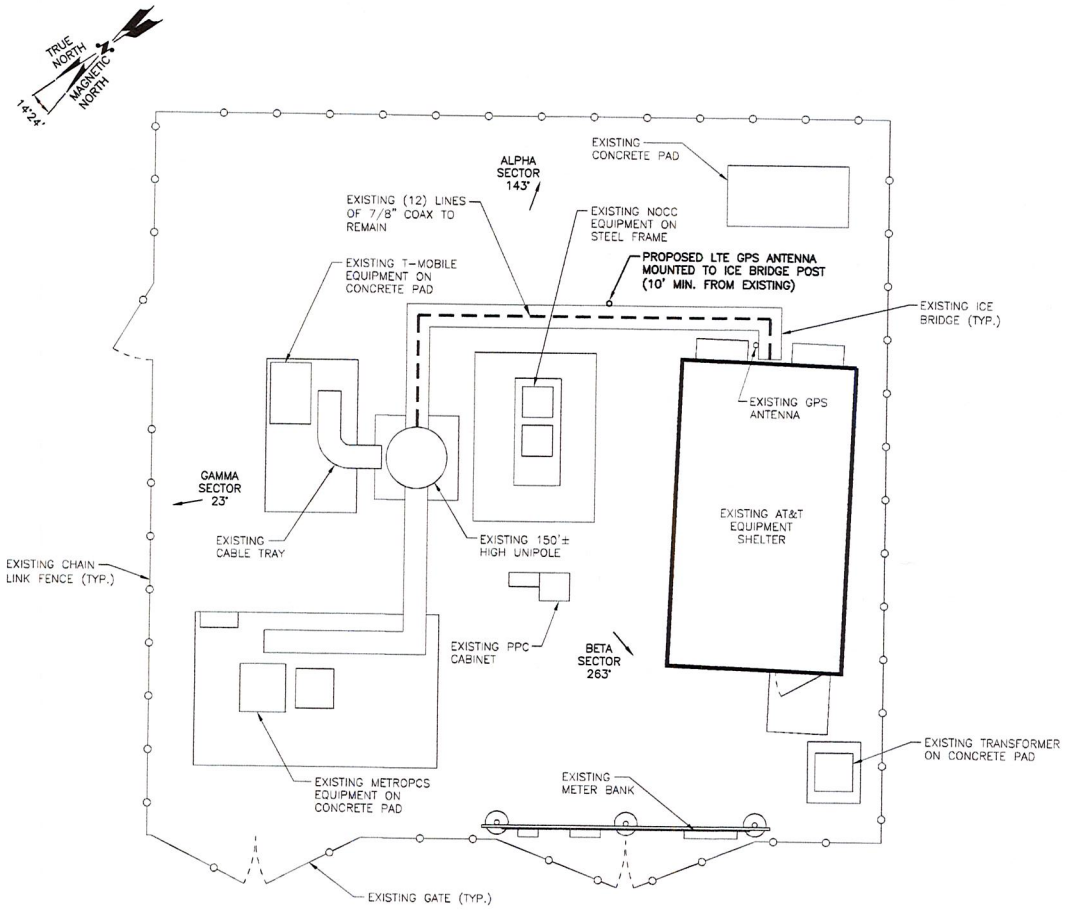
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RH

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

AT&T

GENERAL NOTES (LTE)

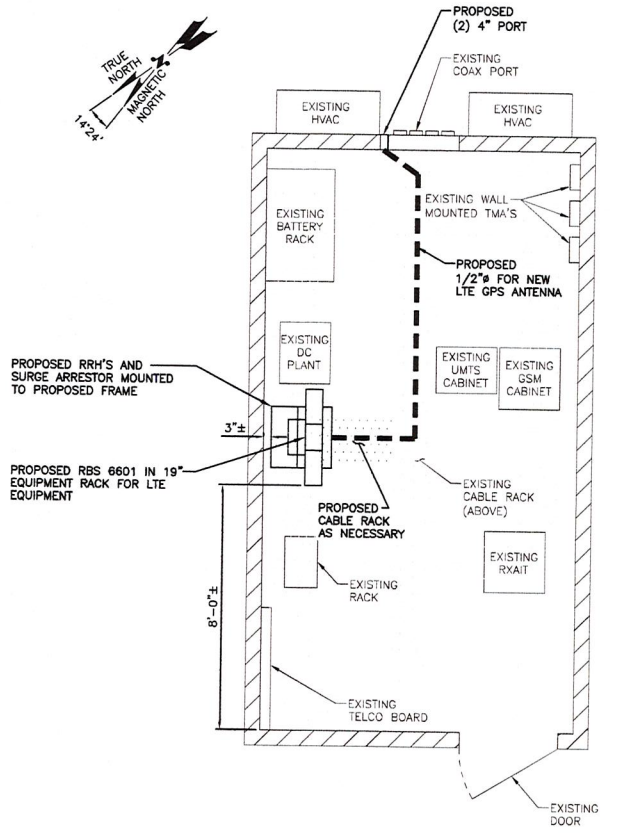
JOB NUMBER	DRAWING NUMBER	REV
2224.01	GN-1	2



COMPOUND PLAN

SCALE: 1/4"=1'-0"

0 2'-0" 4'-0" 8'-0" 12'-0"



EQUIPMENT PLAN

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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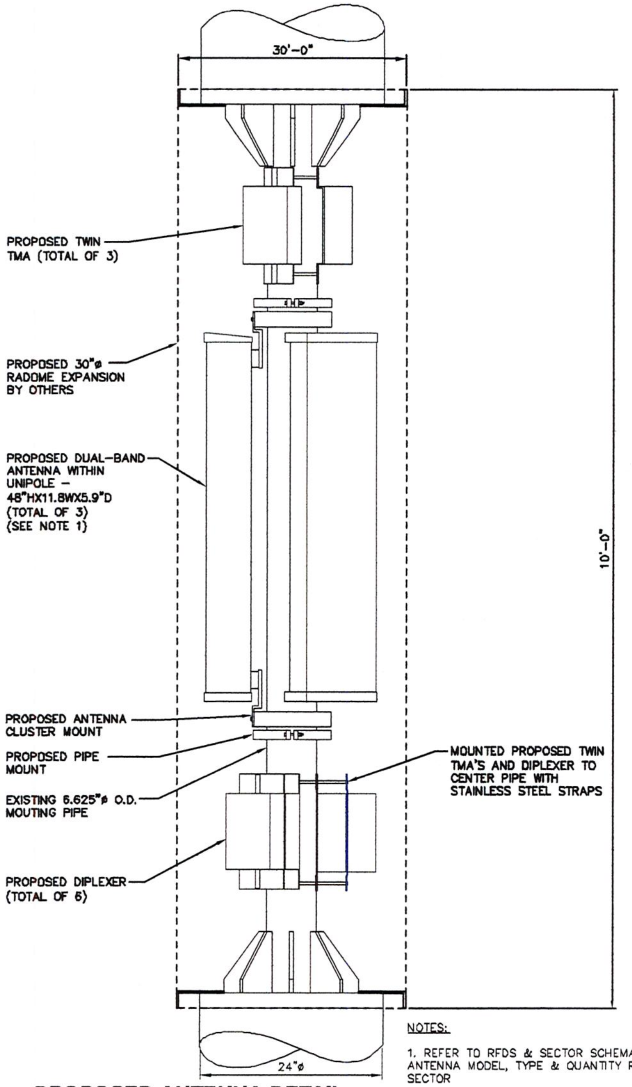
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RH

Daniel P. Hamm
No. 14175
LICENSED PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

AT&T

COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2224.01	A-1	2



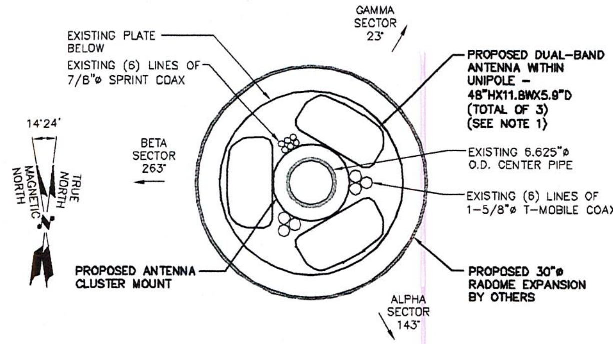
NOTES:

1. REFER TO RFDS & SECTOR SCHEMATICS FOR ANTENNA MODEL, TYPE & QUANTITY REQUIRED PER SECTOR

PROPOSED ANTENNA DETAIL

SCALE: 1-1/2" = 1'-0"

0 4" 8" 1'-4" 2'-0"



PROPOSED ANTENNA DETAIL

SCALE: 1-1/2" = 1'-0"

0 4" 8" 1'-4" 2'-0"

NOTE:

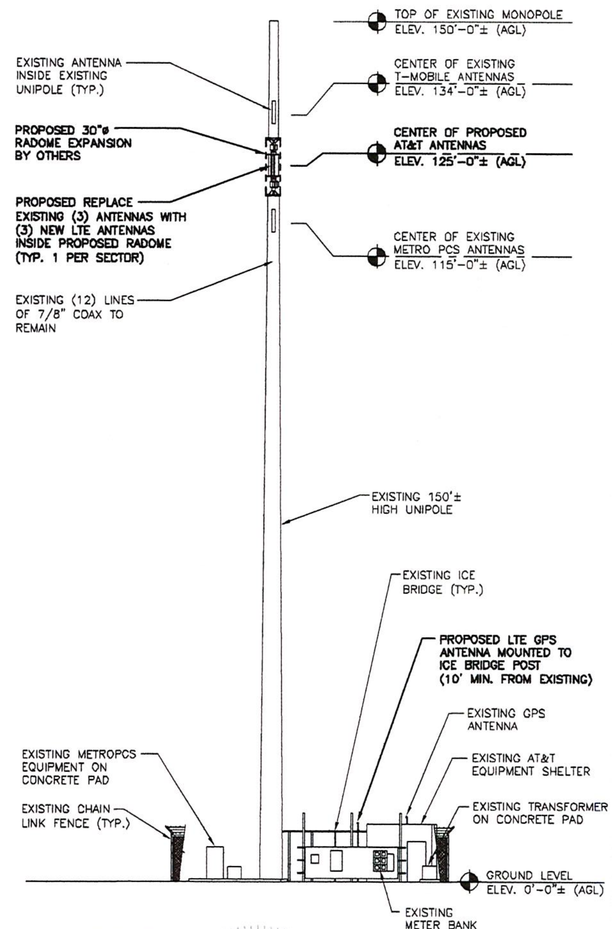
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:

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

NOTE:

A STRUCTURAL ANALYSIS HAS BEEN RUN ON THIS TOWER BY FDH ENGINEERING ON MAY 20, 2011. ACCORDING TO THE ANALYSIS THE FLAGPOLE TOWER REQUIRES MODIFICATIONS TO SUPPORT THE ADDITIONAL LOADS, PLEASE SEE TOWER MODIFICATIONS DESIGNED BY OTHERS.



WEST ELEVATION

SCALE: 3/32"=1'-0"

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

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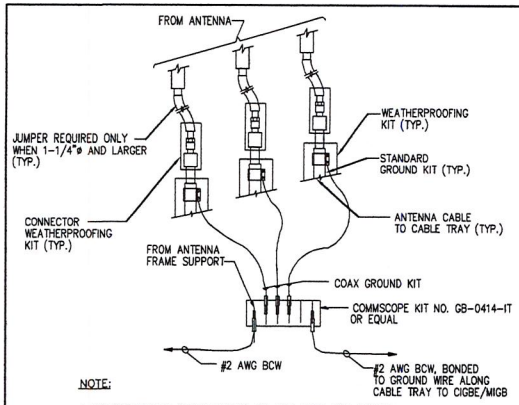
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RH

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

AT&T
ANTENNA LAYOUT AND ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2224.01	A-2	2

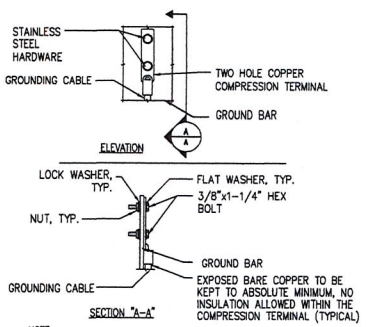


NOTE:

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

1 GROUND WIRE TO GROUND BAR CONNECTION DETAIL

N.T.S.

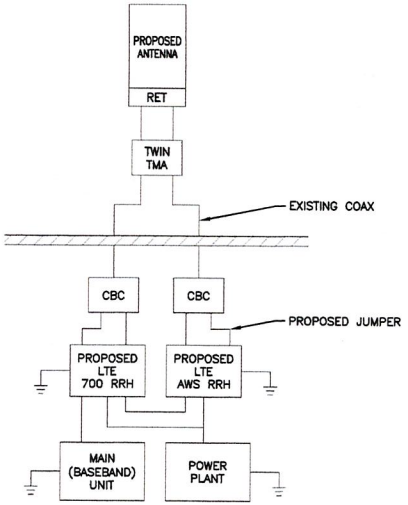


NOTE:

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

2 TYPICAL GROUND BAR CONNECTION DETAIL

N.T.S.

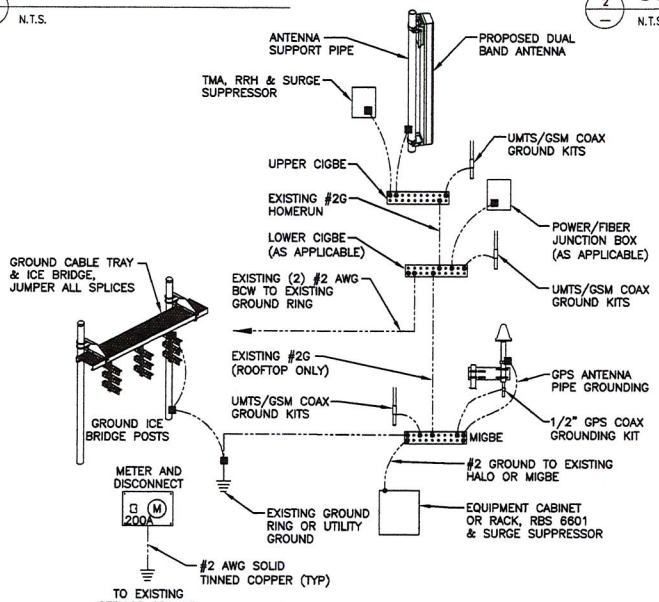


NOTES:

1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S SPECIFICATIONS

3 PLUMBING DIAGRAM

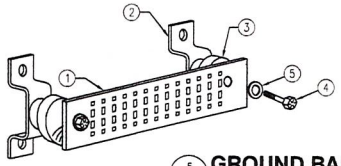
N.T.S.



4 GROUNDING RISER DIAGRAM

N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2	———	WALL MTG. BRKT.
3	2	———	INSULATORS
4	4	———	5/8"-11x1" H.H.C.S.
5	4	———	5/8 LOCKWASHER



5 GROUND BAR - DETAIL

N.T.S.

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

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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

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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RH

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STATE OF CONNECTICUT

AT&T

PLUMBING DIAGRAM & DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2224.01	G-1	2

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

150 ft Monopole

SBA Site Name: North Stonington 2
SBA Site ID: CT01493-S

FDH Project Number 11-04387E S1

Prepared By:

David Chickering, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, PE
President
CT PE License No. 25842

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2730 Rowland Rd.
Raleigh, NC 27615
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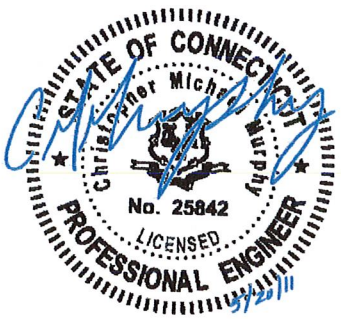
info@fdh-inc.com



May 20, 2011

Prepared pursuant to TIA/EIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the existing monopole located in Stonington, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F.* Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from PiROD (Eng. File No. A-116225) original design drawings dated October 20, 1999, and SBA Network Services.

The *basic design wind speed* per *TIA/EIA-222-F* standards is 85 mph without ice and 74 mph with 1/2" radial ice.

Conclusions

With the existing and proposed loading from AT&T at 125 ft. (see **Table 1**), the tower does not meet the requirements of the *TIA/EIA-222-F* standards. However, provided the foundation was designed and constructed to support the original design reactions (See PiROD Drawing No. 205502-B), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e. the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. Proposed coax should be installed inside the monopole's shaft.
2. Reinforcement of the internal components of the pole is necessary to support the existing and proposed loads. See the **Results** section of this report for overstressed locations.

We would anticipate the construction cost for a turnkey design/build modification project of this nature to range in price from approximately $10,000 to $20,000 (which should include the engineering design fees, inspection fees, and construction fees).

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-3	145	(2) Decibel DBXLH-9090B-VTM (1) Decibel DBXTH-6565B-1VTM	(6) 7/8" (6) 1-5/8"	Sprint	145	Inside 24"Ø Fiberglass Shroud
4-6	135	(3) RFS APXV18-206516L	(6) 1-5/8"	T-Mobile	135	Inside 24"Ø Fiberglass Shroud
7-9	125 [2]	(3) EMS MB100RR650-200DPAL	(12) 7/8"	AT&T	125	Inside 24"Ø Fiberglass Shroud
10-12	115	(3) Kathrein 742 351	(6) 7/8" (1) 3/8"	Metro PCS	115	Inside 24"Ø Fiberglass Shroud

1 Coax installed inside the pole's shaft unless otherwise noted.
2 The existing loading for AT&T will be altered at 125'. See the proposed loading below.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-3	125 [1]	(3) KMW AMXCD1465 (3) Andrew ETW190VS12UB TMAs (6) CM1007-DBPXBC-xxx Diplexers	(12) 7/8"	AT&T	125	Inside Proposed 30"Ø Fiberglass Shroud

1 This represents the final configuration for AT&T at 125'. According to information provided by SBA, AT&T will remove all existing antennas and 24"Ø fiberglass shroud and install (3) KMW AMXCD1465 antennas, (3) Andrew ETW190VS12UB TMAs, (6) CM1007-DBPXBC-xxx diplexers, and a 30"Ø fiberglass shroud bump out at 125'.

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	42 ksi
Base Plate	36 ksi (Assumed)
Anchor Bolts	105 ksi
Internal Pipe Section	42 ksi
Internal Flange Components	36 ksi (Assumed)

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	150 - 140	Fiberglass Shroud + PiROD Weldment	24" Ø Shroud w/ Internal Components	13.1	Pass
L2	140 - 130	Fiberglass Shroud + PiROD Weldment	24" Ø Shroud w/ Internal Components	47.4	Pass
L3	130 – 120	Fiberglass Shroud + PiROD Weldment	30" Ø Shroud w/ Internal Components**	**102.5**	**Fail**
L4	120 - 110	Fiberglass Shroud + PiROD Weldment	24" Ø Shroud w/ Internal Components	**108.0**	**Fail**
L5	110 - 80	Pole	P24x3/8	33.8	Pass
L6	80 - 50	Pole	P24x3/8	64.3	Pass
L7	50 - 20	Pole	P30x3/8	72.2	Pass
L8	20 - 0	Pole	P36x3/8	68.4	Pass
		Anchor Bolts	(28) 1"ø w/ BC = 39"	54.9	Pass
		Base Plate***	42.375"ø PL x 1.25" thk.	OK	Pass

*Capacities include 1/3 allowable increase for wind.
**New 30" diameter shroud is proposed bump-out from carrier.
**Based on the design methodology of the manufacturer, the base plate has been sufficiently designed to resist the full capacity of the bolts and shaft.

Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis *(TIA/EIA-222-F)*	Original Design *(TIA/EIA-222-F)*
Axial	19 k	19 k
Shear	8 k	8 k
Moment	651 k-ft	671 k-ft

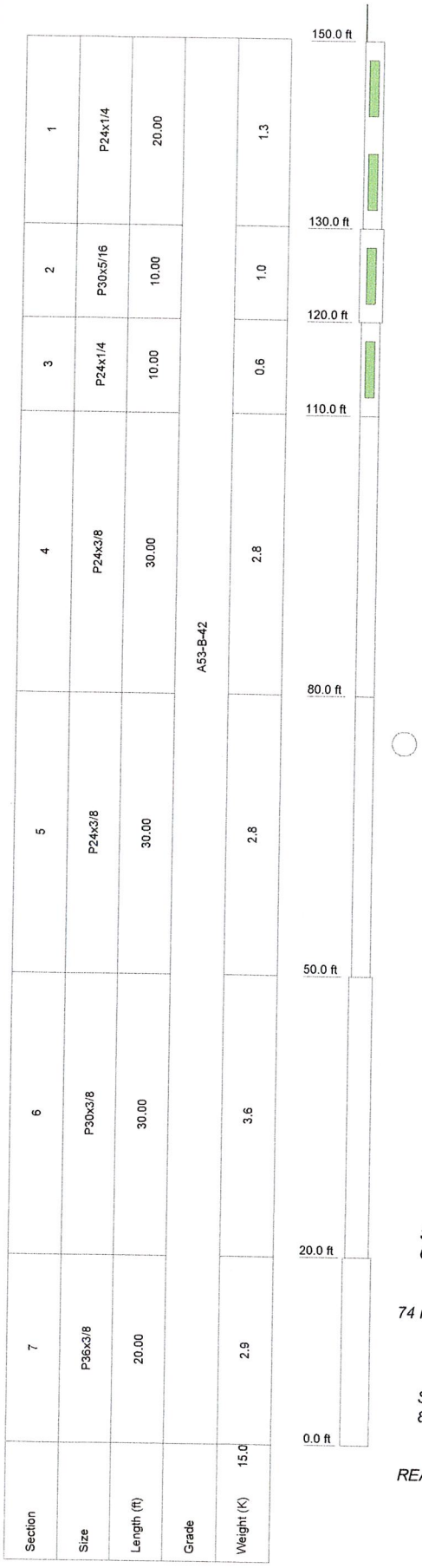
GENERAL COMMENTS

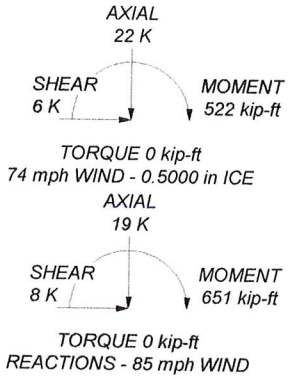
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

APPENDIX





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	150	(3) ETW190VS12UB TMA (ATT)	125
10' X 15' Flag	145	(6) CM1007-DBPXBC-xxx Diplexer (ATT)	125
(2) DBXLH-9090B-VTM (Sprint)	145	(3) AM-X-CD-14-65 w/ Mount Pipe (ATT)	125
DBXTH-6565B-VTM (Sprint)	145	(3) 742 351 (Metro PCS)	115
10'x15' Flag	145		
(3) APXV18-206516L	135		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in New London 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 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. Top 40' of tower is shown for wind loading purposes only. See the Pirod, Inc. (Eng. File No. A-116225) assembly drawings for actual tower information.

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, North Carolina
Phone: (919) 755-1012
FAX: (919) 755-1031

Tower Analysis

Job: North Stonington 2, CT01493-S			
Project: 11-04387E S1			
Client: SBA Network Services, Inc.	Drawn by: David Chickering	App'd:	
Code: TIA/EIA-222-F	Date: 05/20/11	Scale: NTS	
Path:		Dwg No. E-1	

Simply Intelligent

KMW Communications
Base Station Antennas
For Mobile Communications

AM-X-CD-14-65-00T-RET (4' 65° Dual Broadband Antenna)

Dual Band Electrical DownTilt Antenna

698 ~ 894MHz, X-pol., H65° / V17.0°
1710 ~ 2170MHz, X-pol., H65° / V8.5°

Electrical Specification

Frequency Range		698~894MHz	1710~2170MHz
Impedance		50Ω	
Polarization		Dual, Slant ±45°	
Gain		14.0dBi / 11.85dBd @ 698-806MHz 14.8dBi / 12.65dBd @ 824-894MHz	16.1dBi / 13.95dBd @1710-1755MHz 16.3dBi / 14.15dBd @1850-1900MHz 16.0dBi / 13.85dBd @2110-2155MHz
Beamwidth	Horizontal	67° @ 698-806MHz 65° @ 824-894MHz	60° @ 1710-1755MHz 61° @ 1850-1900MHz 64° @ 2110-2155MHz
	Vertical	17.5 @ 698-806MHz 16.5° @ 824-894MHz	8.8° @ 1710-1755MHz 8.5° @ 1850-1900MHz 8.0° @ 2110-2155MHz
VSWR		≤1.5:1	
Front-to-Back Ratio		≥28 dB	
Electrical Downtilt Range		2° ~ 16°	0° ~ 10°
Isolation Between Ports		≥30 dB	
Isolation Between Ports of Different Frequency Elements		≥35 dB	
Cross Pole Discrimination		10.0 dB @ ±60° 15.0 dBi @ 0°	
First Upper Side Lobe Suppression		16dB	
Side Lobe Suppression		> 16dB @ 0-6° Tilt > 18dB @ 7-12° Tilt (Up to 15° from Boresight)	> 16dB @ 0-6° Tilt > 18dB @ 7-10° Tilt (Up to 15° from Boresight)
Passive Intermodulation		≤ -150 dBc @ 2x20w	
Input Maximum CW Power		500 W	300 W
Environmental Compliance		IP65 for Radome IP67 for Connectors	
RET Motor Configuration		Field Replaceable RET Electronic Control Module / RET Motor is internal to antenna & not field replaceable	
Compliant with AISG 1.1 and 2.0		AISG 1.1 and 2.0	

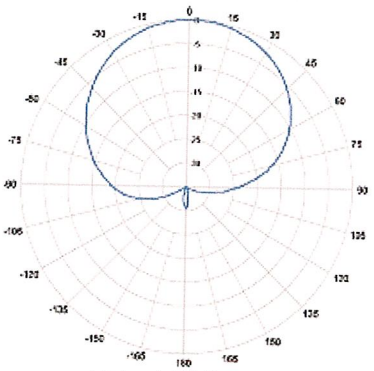
Mechanical Specification

Dimension (W×D×H)	11.8×5.9×48 inches (300×150×1219mm)
Weight (Without clamp)	16.5 kg (36.4 lbs)
Connector	4 x 7/16 DIN(F), Long Neck
Max Wind Speed	150mph
Wind Load (@150 mph)	1260 N

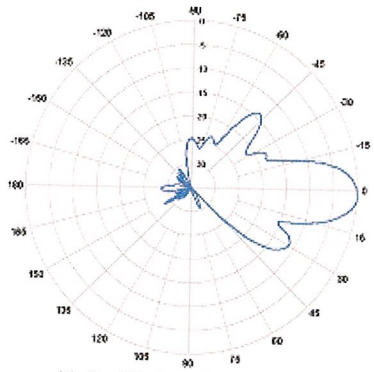
Simply Intelligent

AM-X-CD-14-65-00T-RET (4' 65° Dual Broadband Antenna)

KMW Communications
Base Station Antennas
For Mobile Communications

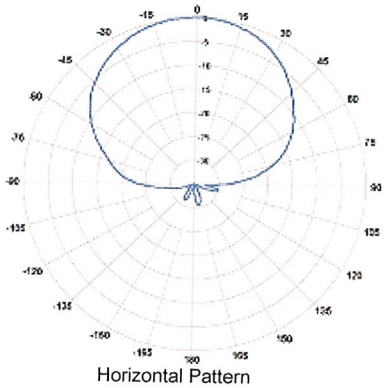


Horizontal Pattern

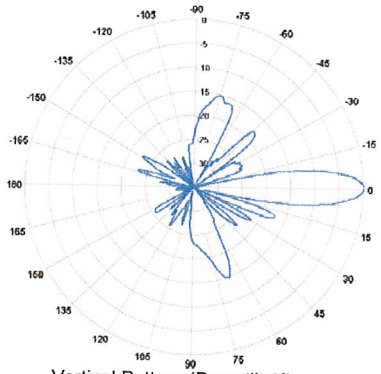


Vertical Pattern (Downtilt 2°)

700MHz band Pattern

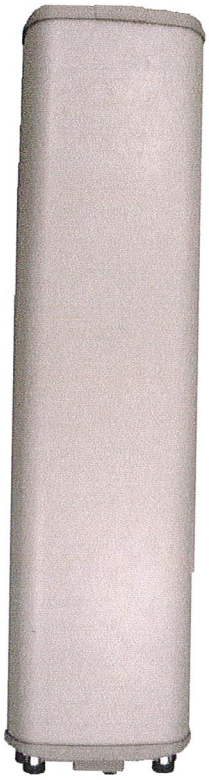


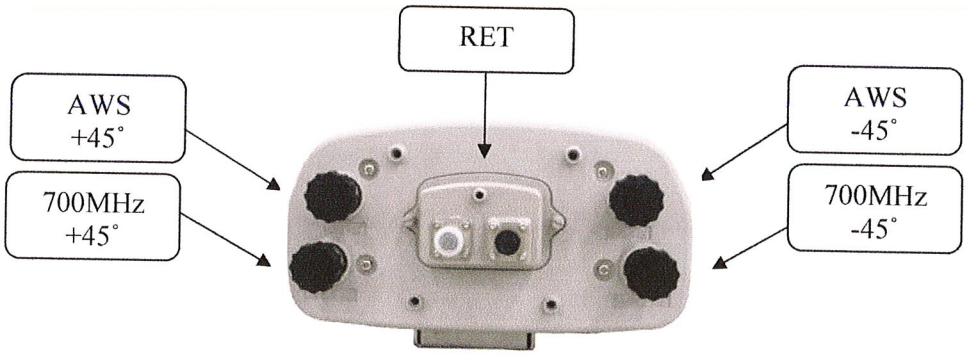
Horizontal Pattern



Vertical Pattern (Downtilt 0°)

AWS band Pattern



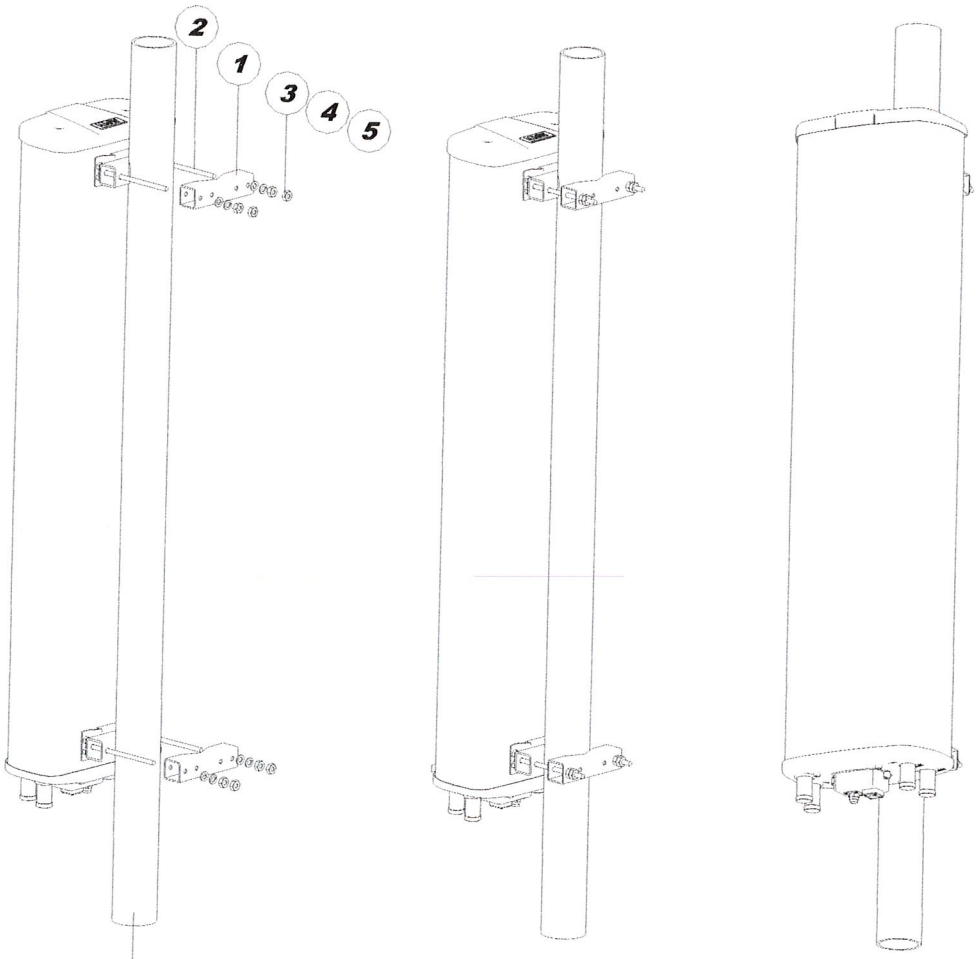


Simply Intelligent

AM-X-CD-14-65-00T-RET (4' 65° Dual Broadband Antenna)

Antenna Drawings and Installation Diagram

KMW Communications
Base Station Antennas
For Mobile Communications



MOUNT POLE
Ø1.97 ~ 3.15inch OD.
(50 ~ 80mm OD.)

STANDARD MOUNTING KITS

No.	PART NAME	Q'TY	Recommending Torque
1	FIXED CLAMP	4	
2	Hex. Cap Bolt, M10	4	17mm Spanner
3	Plain Washer, M10	4	208lbf.inch
4	Spring Washer, M10	4	240kgf.cm
5	Hex. Nut, M10	8	

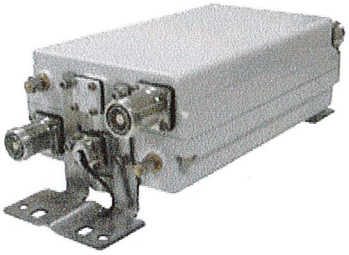
Product Specifications

ANDREW®
A CommScope Company

ETW190VS12UB

Material ID: E15S09P94

Tower Mounted Amplifier, Twin PCS with AISG



CHARACTERISTICS

Electrical Specifications Rx (Uplink)

Bandwidth	60.00 MHz
License Band	PCS
Frequency Band	1850 – 1910 MHz
Gain	12 dB
Gain Tolerance	±1
Noise Figure, Mid Band, typical	1.20 dB @ 12 dB
Noise Figure, Full Band, typical	1.80 dB @ 12 dB
Output IP3, minimum	26 dBm @ 12 dB
Return Loss, minimum	18 dB
Group Delay Variation, maximum	50 ns @ 5 MHz
Total Group Delay, maximum	150 ns

Electrical Specifications Tx (Downlink)

Bandwidth	60.00 MHz
Insertion Loss, maximum	0.70 dB
License Band	PCS
Frequency Band	1930 – 1990 MHz
Return Loss, minimum	18 dB
3rd Order IMD	-107 dBm
3rd Order IMD Test Method	Two +43 dBm carriers
Input Power, RMS, maximum	500 W
Input Power, PEP, maximum	5000 W
Group Delay Variation, maximum	15 ns @ 5 MHz
Total Group Delay, maximum	50 ns

Product Specifications

ETW190VS12UB - Material ID: E15S09P94

Electrical Specifications 2 Rx (Uplink)

License Band	PCS
Frequency Band	1850 – 1910 MHz
Bandwidth	60.00 MHz

Electrical Specifications 2 Tx (Downlink)

Bandwidth	60.00 MHz
License Band	PCS
Frequency Band	1930 – 1990 MHz

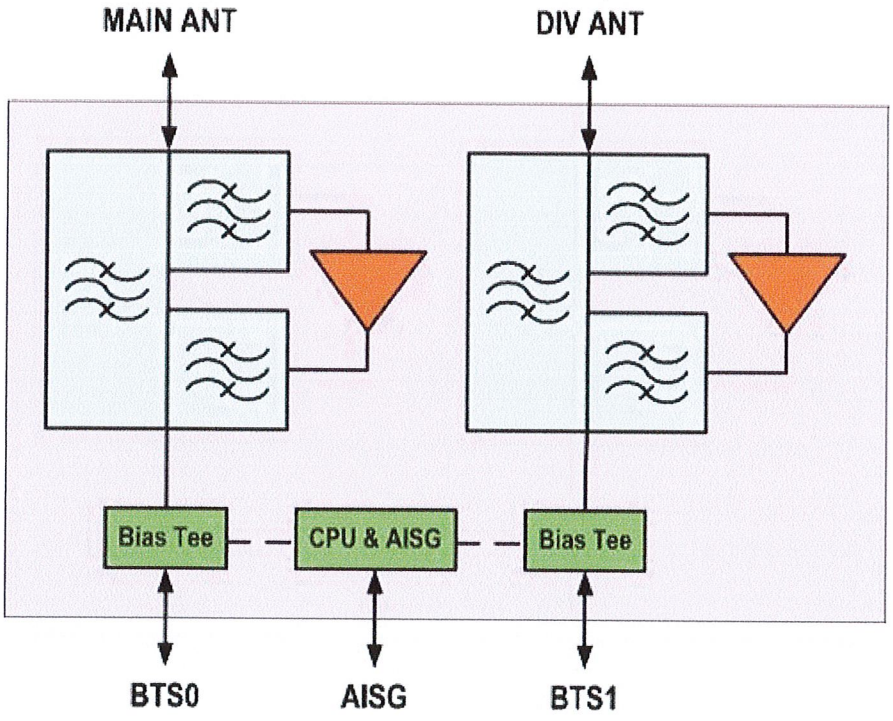
Electrical Specifications

Protocol	AISG 1.1 | AISG 2.0
Default Protocol	AISG 2.0
Operating Current at Voltage	135 mA @ 12 V
Voltage	7–30 Vdc
Operating Current Tolerance	±15
Alarm Functionality	AISG | Failure current
Failure Current Consumption	180–200 mA @ 10–18 V
RET System Compatible	1 Output, 24 Vdc and RS-485
Lightning Surge Capability Test Method	IEEE C62.42-1991
Lightning Surge Capability Waveform	8/20 waveform
Lightning Surge Current	20 kA
VSWR Alarm Threshold	9.54 dB
VSWR Alarm Threshold Tolerance	±2

Product Specifications

ETW190VS12UB - Material ID: E15S09P94

Block Diagram



Mechanical Specifications

Connector Interface	7-16 DIN Female
Connector Interface Style	Long neck
Ground Screw Diameter	6.00 mm
AISG Connector Standard	IEC 60130-9
Finish	Painted
Color	Gray
Mounting Pipe Hardware	Band clamps
Mounting Pipe Diameter	40–160 mm

Environmental Specifications

Operating Temperature	-40 °C to +65 °C (-40 °F to +149 °F)
Relative Humidity	Up to 100%
Ingress Protection Test Method	IEC 60529:2001, IP67

Dimensions

Height	260.0 mm | 10.2 in

Product Specifications

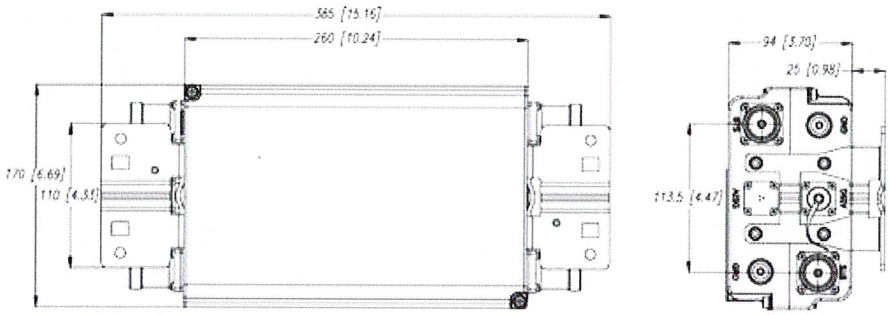
ETW190VS12UB - Material ID: E15S09P94

Width	170.0 mm | 6.7 in
Depth	94.0 mm | 3.7 in
Weight	6.6 kg | 14.6 lb

Product Specifications

ETW190VS12UB - Material ID: E15S09P94

Outline Drawing



Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

CM1007-DBPXBC-xxx : Diplex Filter for 700/800 MHz and AWS/PCS with DC Auto Sense

TECHNICAL SPECIFICATIONS

Filter Type	Diplex Filter for 700/800 MHz and AWS/PCS	
Range	698-2170 MHz	
Frequency Range	698-894 MHz/1710-2170 MHz	
Frequency Range	700/800 Port, 698-894 MHz	AWS/PCS Port, 1710-2170 MHz
Insertion Loss	700/800 Port: 0.15 dB Max.	AWS/PCS Port: 0.15 dB Max.
Return Loss	20 dB minimum	20 dB minimum
Rejection	60 dB min. @ 1710-2170 MHz	60 dB min. @ 698-894 MHz
Isolation (Channel to Channel)	60 dB minimum	
Average Power Handling (dBm)	500 watts (+57) max.	500 watts (+57) max.
Peak Power (dBm)	5 kW (+67 dBm) PEP maximum at 3000m, +65C and 2:1 antenna mismatch	5 kW (+67 dBm) PEP maximum at 3000m, +65C and 2:1 antenna mismatch
Intermodulation (IM) (dBc) (Products, Max)	-115 dBm (-158) maximum in Rx band, two/+43 dBm carriers in the Tx band	
Common+Port	TMA supply voltage, fed via the RF cable, +32 V, 2 A Maximum	
DC Bias/AISG Auto-Sense (-001 Option):	DC/AISG Auto-Sense from low or high channels (see logic table below)	
Antenna Sniffer Port (-002 Option):	Option -001 + Sniffer Port -43 to -30 dB (698-894 and 1710- 2170 MHz)	
AISG Port+Converter (-003 Option):	Options -001 & -002 + AISG Connector (Internal Converter AISG 1.1/2.0 Compatible)	
DC/AISG Delete (-004 Option):	All ports are DC and AISG isolated from each other (no Auto-Sense function)	
DC/AISG to Low & High Channels (-005 Option):	All ports are permanently connected for DC and AISG connectivity (no Auto-Sense function)	
DC/AISG to Low Channel (-006 Option):	Low frequency channel is permanently connected for DC and AISG connectivity (no Auto-Sense function)	
DC/AISG to High Channel (-007 Option):	High frequency channel is permanently connected for DC and AISG connectivity (no Auto-Sense function)	

MECHANICAL SPECIFICATIONS

Dimensions mm(in)	125 x 227.5 x 83 (4.92" x 8.96" x 3.27"), excluding connectors and bracket
Weight kg(lbs)	3.0 (6.5 lbs) maximum
Color	Off White (NCS 1502-R)
Housing	Aluminum
RF Connectors	DIN 7/16 female, long barrel
Sniffer Port Connector	N-F (IP67 rated protective cap included)
AISG Connector	Per IEC-60130-9 (IP67 rated protective cap included)
Mounting Kit	Hose Clamps in Stainless Steel

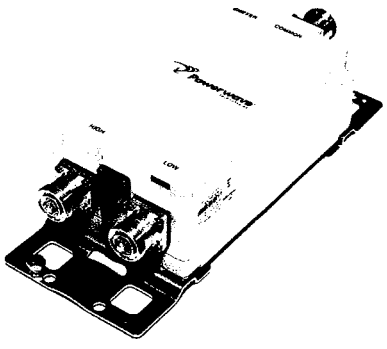
ENVIRONMENTAL SPECIFICATIONS

Temperature Range Celsius (Fahrenheit)	-40°to +65°(-40°to +149°)
MTBF	> 2 Million Hours
Lightning Protection	IEC 61312-1, 3 kA 10/350 µs, 8 kA 8/20 µs
Safety	EN 60 950, UL 1950, ETL
Ingress Protection	IP67 (IP67 rated cap must be connected to any unused ports)
Environmental	ETS 300 019
EMC	ETS 300 342-3

Product Assumes that AISG will always be on the same connector as DC.

DC Auto Sense Logic Table

DC/AISG Feedthru	Low Port (698-894 MHz)	High Port (1710-2170 MHz)	AISG Port	DC/AISG Connection	Tower Top Capable
CM1007-DBPXBC-001	#2 Priority Connection	#1 Priority Connection	N/A	DC Auto-Sense *	Yes - Common to High Port Only
CM1007-DBPXBC-002	#2 Priority Connection	#1 Priority Connection	N/A	DC Auto-Sense *	Yes - Common to High Port Only
CM1007-DBPXBC-003	#3 Priority Connection	#2 Priority Connection	#1 Priority Connection	DC Auto-Sense *	No - BTS location only
CM1007-DBPXBC-004	No Connection	No Connection	N/A	Hard-Wired	Yes
CM1007-DBPXBC-005	Connection	Connection	N/A	Hard-Wired	Yes
CM1007-DBPXBC-006	Connection	No Connection	N/A	Hard-Wired	Yes
CM1007-DBPXBC-007	No Connection	Connection	N/A	Hard-Wired	Yes



* Product assumes that AISG signal will always be associated with DC presence

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

July 11, 2011

Honorable Edward Haberek, Jr.
1st Selectman, Town of Stonington
Town Hall
152 Elm St.
Stonington, CT 06378-0352

Re: Telecommunications Facility – 811 Stonington Road Stonington, CT

Dear Mr. Haberek:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes Cingular's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures; please call me at (860) 463-5511 or Ms. Linda Roberts, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Douglas L. Culp
Real Estate Consultant

Enclosure

Martin, David C.

From: Steve Levine [Steve.Levine@SAI-Comm.com]
Sent: Thursday, January 26, 2012 8:52 AM
To: Martin, David C.
Cc: Tim Burks; David Osuch
Subject: Satisfaction of CSC Approval Conditions in EM-Cing-137-110712 (AT&T CT2224)
Attachments: CT2224 LTE PE Letter.PDF; CT2224 LTE PMIR 11-03-11.pdf

Dave,

Please accept the attached PE letter and post-modification inspection report as satisfaction of the Council's approval conditions in EM-Cing-137-110712:

RE: **EM-CING-137-110712** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 811 Stonington Road, Stonington, Connecticut.

Dear Mr. Culp:

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

- The tower be modified in accordance with recommendations made in the Structural Analysis prepared by FDH Engineering dated May 20, 2011 and stamped by Christopher Murphy; and

- Prior to antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and the tower and foundation will not exceed 100 percent of the post-construction structural rating.

Should you have any questions or comments, please do not hesitate to call or email.

Thank you.

AT&T Mobility / New Cingular Wireless PCS, LLC / SAI Communications

Steve Levine 500 Enterprise Drive, 3rd Fl., Rocky Hill, CT 06067

Real Estate Consultant Office 860-513-7636 Mobile 203-556-1655 Fax 860-513-7190

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

January 23, 2012

Mr. Shawn Nottage
SBA Network Services, Inc.
39 Sunset Drive
Brooklyn, CT 06234

RE: 150' Monopole
SBA Site Name: North Stonington 2
SBA Site ID: CT01493-S

Dear Shawn:

I, David Chickering, hereby certify that the modifications per FDH Engineering, Inc. (Project No. 11-04387E S2) Modification Drawings for a 150' Stealth Monopole dated August 19, 2011 and stamped by Christopher Murphy, PE have been completed and the tower and foundation will not exceed 100 percent of the post-construction structural rating.

Our assessment has been made assuming all information provided to FDH Engineering, Inc. is accurate and that the tower has been properly erected and maintained.

Should you require additional information, please do not hesitate to contact our office.

Sincerely,

David Chickering, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, PE
President
CT PE License No. 25842

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Post Construction Inspection Report

Report Prepared for

Site Name: North Stonington 2
Address: 811 Stonington Road
Stonington, CT 06738
Latitude: 41.3534°
Longitude: -71.8870°
Site No.: CT01493-S

FDH Project Number 11-04387E S2
Carrier: AT&T

Prepared By:

Christopher M. Murphy

Christopher M. Murphy, PE
President

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, NC 27615
(919) 755-1012
info@fdh-inc.com

November 3, 2011

Prepared pursuant to TIA/EIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

Mr. Shawn Nottage
Regional Site Manager
SBA Network Services, Inc.
39 Sunset Drive
Brooklyn, CT 06234

Ref: Post-Construction Inspection – 150' Stealth Monopole in Stonington, CT (CT01493-S)

Dear Shawn:

As result of FDH Engineering's structural analysis (Project No. 11-04387E S1) dated May 20, 2011, the reinforcement of the internal components of the pole was required to support the proposed and existing loading. As such, the tower was modified by the installation of grout within the internet pole shaft, per FDH Engineering's modification drawings, dated August 19, 2011. These modifications are summarized below in **Table 1**:

Table 1 – Modification Schedule

Tower Modification Schedule			
No.	Type of Modification	Bottom Elevation	Top Elevation
1	Installation of grout inside internal pole shaft. See S-2 for details.	110.0'+/-	130.0'+/-

Per your request, FDH Engineering has supervised the completion of the structural modifications for the 150' stealth monopole by the contractor and determined that the installation was performed to our specifications. Contained herein are photographs from our inspection. Our design drawings and specifications are contained within the **Appendix**.

Please give me a call if you have any questions.

Sincerely,

Christopher M. Murphy

Christopher M. Murphy, PE
President
Connecticut License No. 25842

Table 2 – Modification Installation Summary

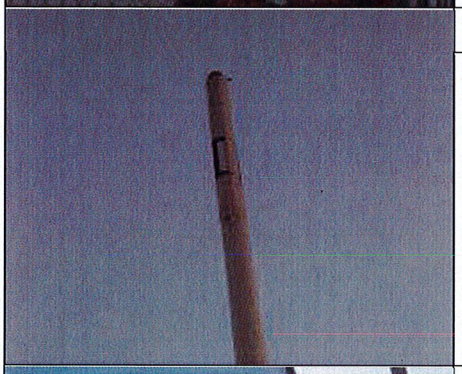
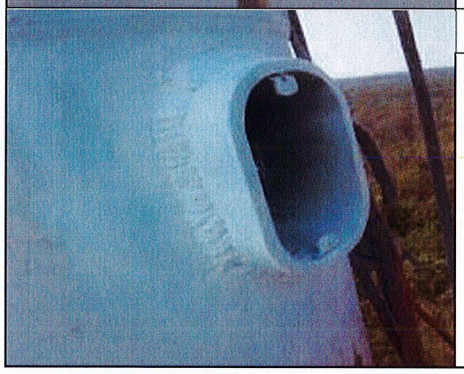
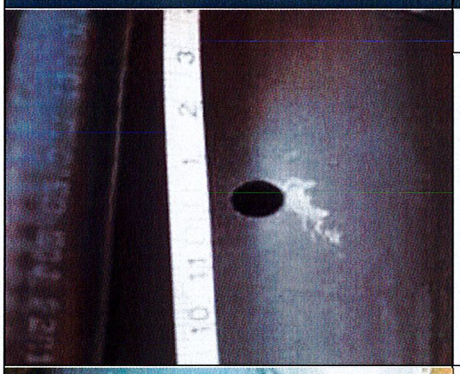
On Site Photograph	Observations and Remarks	
	**Photograph 1:**	
	Observation: Existing site sign.	**Comments:** No Recommendation.
	**Photograph 2:**	
	Observation: Installation of grout in the internal pole shaft per FDH Engineering, Inc. design drawings.	**Comments:** No Recommendation.
	**Photograph 3:**	
	Observation: Installation of port hole prior to the installation of the grout to access the coax lines per FDH Engineering, Inc. design drawings.	**Comments:** No Recommendation.

Table 2 – Modification Installation Summary – (Continued)

On Site Photograph	Observations and Remarks	
	**Photograph 4:**	
	Observation: Installation of grout in the internal pole shaft per FDH Engineering, Inc. design drawings.	**Comments:** No Recommendation.
	**Photograph 5:**	
	Observation: Installation of grout in the internal pole shaft per FDH Engineering, Inc. design drawings.	**Comments:** No Recommendation.
	**Photograph 6:**	
	Observation: Installation of grout in the internal pole shaft per FDH Engineering, Inc. design drawings.	**Comments:** No Recommendation.

Appendix

THE MODIFICATIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC., PROJECT NO. 11-04387E S1 DATED MAY 20, 2011

THIS REPORT WAS BASED ON A SPECIFIC ANTENNA AND COAX CONFIGURATION PROVIDED BY THE TOWER OWNER. ANY CHANGE TO THIS INFORMATION MUST BE REVIEWED BY FDH ENGINEERING, INC.

ALL DIMENSIONS, MEASUREMENTS, QUANTITIES, PART NUMBERS AND COAX/ANTENNA PLACEMENTS TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO MATERIAL ORDERS AND CONSTRUCTION.

PROJECT DESCRIPTION:

MODIFICATION DRAWINGS FOR A 150' STEALTH MONOPOLE

SBA

SITE NAME:

NORTH STONINGTON 2

SITE NUMBER:

CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

COORDINATES:
LATITUDE: 41.3534°
LONGITUDE: -71.8870°

SHEET INDEX

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
S-1	GENERAL NOTES & MODIFICATION SCHEDULE
S-2	GROUT REINFORCEMENT INSTALLATION DETAILS

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STATE OF CONNECTICUT
Christopher Michael Murphy
No. 25842
LICENSED PROFESSIONAL ENGINEER
08/19/11
CHRISTOPHER M. MURPHY, P.E.
CONNECTICUT LIC. NO. 25842

DRAWN BY:	OP
CHECKED BY:	DC
ENG APPV'D:	CMM
PROJECT NO:	11-04387E S2

SUBMITTALS

DATE	DESCRIPTION	REV
08/24/11	PRELIMINARY/REVIEW	A
08/19/11	CONSTRUCTION	1

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NORTH STONINGTON 2

SITE NUMBER:
CT01493-S

SITE ADDRESS:
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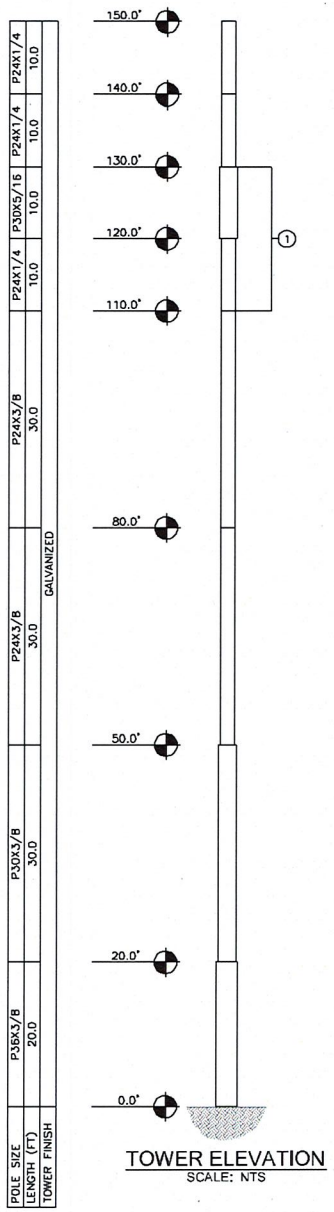
STONINGTON, CT 06378

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



TOWER ELEVATION
SCALE: NTS

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO FDH ENGINEERING FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
3. INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO FDH ENGINEERING PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE FDH ENGINEERING APPROVAL.
4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.

CONTRACTOR QUALIFICATION NOTES:

1. ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE TIA/EIA 222-F "STRUCTURAL STANDARD FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, FDH ENGINEERING, INC. IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
3. ALL SUBMITTAL INFORMATION MUST BE SENT TO FDH ENGINEERING, INC. 2730 ROWLAND ROAD, RALEIGH NC, 27615, TEL. (919) 755-1012, FAX. (919) 755-1031, E-MAIL INFO@FDH-INC.COM. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM FDH ENGINEERING, INC. WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS FDH ENGINEERING, INC.

JOB SITE SAFETY & NOTES:

1. NEITHER THE PROFESSIONAL ACTIVITIES OF FDH ENGINEERING, INC. NOR THE PRESENCE OF FDH ENGINEERING, INC. OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

SUBSTITUTES AND/OR EQUALS:

1. IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE, ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BOTTOM ELEV. (FT)	TOP ELEV. (FT)
1	INSTALLATION OF 5000 PSI GROUT INSIDE INTERNAL POLE SHAFT. SEE S-2 FOR DETAILS.	110.0±	130.0±

CORRECTION OF FAILING MODIFICATION INSPECTIONS (MI):

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

1. CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
   1.1. IF A MI RE-VISIT IS REQUIRED, THE GC IS RESPONSIBLE FOR THE ASSOCIATED COST.
2. OR, WITH FDH'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

REQUIRED PHOTOS:

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE CLOSE OUT DOCUMENTS:

1. PRE-CONSTRUCTION GENERAL SITE CONDITION
2. PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION:
   2.1. RAW MATERIALS
   2.2. PHOTOS OF ALL CRITICAL DETAILS
   2.3. WELD PREPARATION
   2.4. FINAL INSTALLED CONDITION
   2.5. SURFACE COATING REPAIR
3. POST CONSTRUCTION PHOTOGRAPHS:
   3.1. FINAL INFIELD CONDITION

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

GROUT:

1. WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. AS A MINIMUM, GROUT SHALL DEVELOP A COMPRESSIVE STRENGTH OF 5000 PSI MIN. IN 28 DAYS.
3. GROUT SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF GROUT MATERIALS.
4. LOOSE MATERIAL SHALL BE REMOVED PRIOR TO GROUT PLACEMENT. ANY FAYING SURFACES MUST BE FREE OF DIRT, GREASE, SCALE, ETC., AND UNSOUD GROUT MUST BE CHIPPED OUT.
5. MATERIAL SPECIFICATIONS SHALL BE IN ACCORDANCE WITH ASTM C1107-02, STANDARD SPECIFICATIONS FOR PACKAGED DRY, HYDRAULIC-CEMENT GROUT (NONSHRINK).
6. LEVELING NUT TIGHTNESS CHECK: WHEN CHECKING FOR NUT TIGHTNESS, ALWAYS TURN THE SPUD WRENCH IN THE DIRECTION TO TIGHTEN THE NUT AGAINST THE BASE PLATE. USING THE SPUD WRENCH AND THE FULL EFFORT OF A PERSON, CHECK THE LEVELING NUT FOR TIGHTNESS AND THE NUT ATOP THE BASE PLATE FOR TIGHTNESS.
7. PLACEMENT TEMPERATURES AND CURING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE A MINIMUM OF (2) DRAIN HOLES, EQUALLY SPACED, THROUGH GROUT FROM INSIDE OF MONOPOLE USING NON-METALLIC PIPE. PIPE TO BE 1" DIAMETER OR SMALLER IF CLEARANCE DICTATES.
9. THE GROUT SHALL BE INSTALLED TO PROVIDE BEARING TO THE ENTIRE BASE PLATE SURFACE.

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS.
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION.
- ANTENNA GRAPHICS NOT SHOWN FOR CLARITY. SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING ANTENNA LOADING.

SURFACE PREPARATION:

1. PREPARE SURFACE TO BE WELDED BY REMOVING PAINT OR GALVANIZATION TO BARE METAL USING POWER WIRE BRUSHING IN ACCORDANCE WITH SSPC-SP11, (STEEL STRUCTURES PAINTING COUNCIL). FOLLOWING POWER WIRE BRUSHING CONTRACTOR SHALL POLISH METAL SURFACE WITH HIGH SPEED GRINDER WITH 400+ GRIT SANDPAPER.
2. AFTER NEW STEEL INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF ZRC OR ZINGA COLD GALVANIZATION COMPOUND PER MANUFACTURER'S SPECIFICATIONS.

WELDING NOTES:

1. ALL WELDING TO THE EXISTING TOWER SHALL BE PERFORMED BY CERTIFIED WELDERS UTILIZING PROCEDURES QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND AWS C5.4.
2. CONTRACTOR SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". CONTRACTOR SHALL SUBMIT CERTIFICATION OF WELDERS TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.
3. CONTRACTOR RESPONSIBLE FOR TEMPORARY HEAT SHIELDING AS REQUIRED DURING WELDING.
4. CONTRACTOR RESPONSIBLE FOR VIEWING EXISTING TOWER FOR LOOSE AND FLAMMABLE MATERIAL PRIOR TO WELDING FLAT PLATE.
5. ALL WELDS TO BE VISUALLY INSPECTED BY A CERTIFIED WELD INSPECTOR PER AWS D1.1.

MISC. NOTES:

1. ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
2. CONTRACTOR FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

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Christopher Michael Murphy
No. 25842
LICENSED PROFESSIONAL ENGINEER
08/19/11
CHRISTOPHER M. MURPHY, P.E.
CONNECTICUT LIC. NO. 25842

DRAWN BY:	OP
CHECKED BY:	DC
ENG APPV'D:	CMM
PROJECT NO:	11-04387E S2

SUBMITTALS

DATE	DESCRIPTION	REV
08/24/11	PRELIMINARY/REVIEW	A
08/19/11	CONSTRUCTION	1

SITE NAME:
NORTH STONINGTON 2

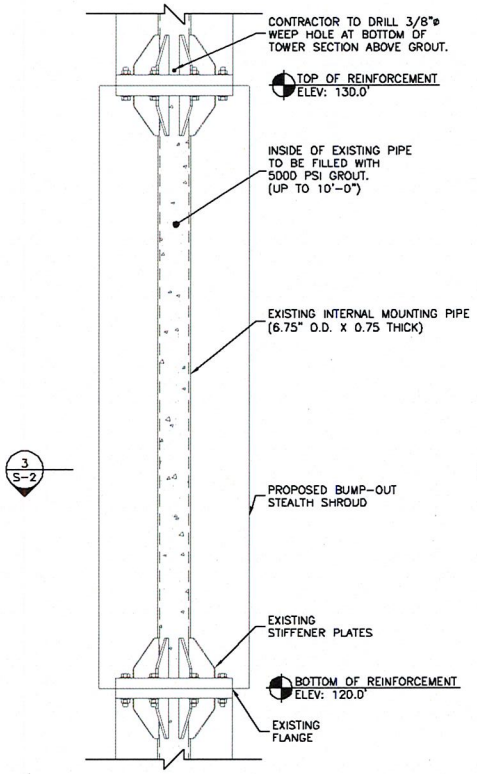
SITE NUMBER:
CT01493-S

SITE ADDRESS:
811 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
GENERAL NOTES
&
MODIFICATION SCHEDULE

SHEET NUMBER
S-1

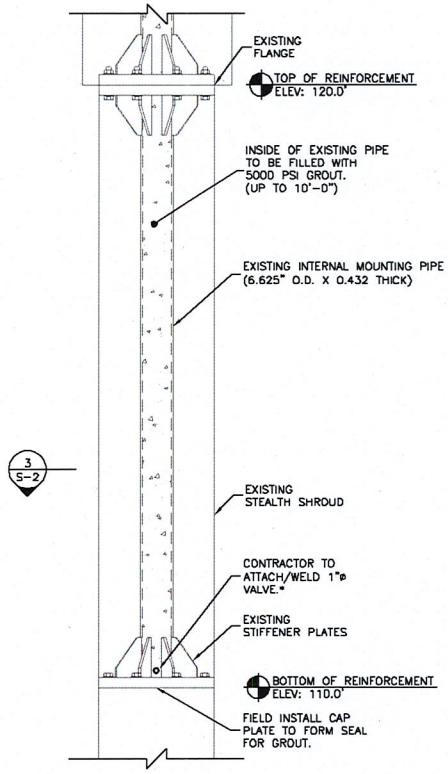
CONTRACTOR MAY BE REQUIRED TO INSTALL TEMPORARY CAP PLATE ON BASE OF PIPE PRIOR TO INSTALLING GROUT TO FORM SEAL.



NEW GROUT REINFORCEMENT ELEVATION VIEW (120.0' TO 130.0')

1 S-2 **ELEVATION**

SCALE: 1/2" = 1'-0"



NEW GROUT REINFORCEMENT ELEVATION VIEW (110.0' TO 120.0')

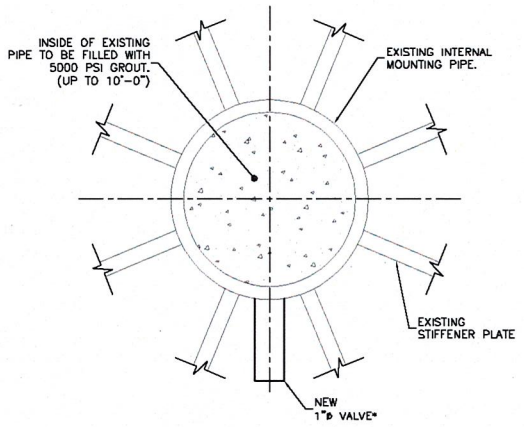
2 S-2 **ELEVATION**

SCALE: 1/2" = 1'-0"

*CONTRACTOR TO PUMP GROUT THROUGH NEW 1"Ø VALVE.

GROUT REINFORCMENT MATERIAL LIST

PART NO.	TYPE	QTY	LENGTH	DESCRIPTION
–		3.3± CU. FT	N/A	5000 PSI GROUT



NEW GROUT REINFORCEMENT SECTION VIEW

3 S-2 **SECTION**

NTS

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