



Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

HAND DELIVERED

April 14, 2014

Attorney Melanie Bachman
Acting 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 at 50 Fairchild Road, Middletown (owner, SBA)

Dear Ms. Bachman:

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 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, AT&T 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) 830-0380 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine
Real Estate Consultant

cc: Mayor Daniel T. Drew, City of Middletown

Attachments

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

50 Fairchild Road, Middletown
CSC Approvals: Dockets 316 and 316A; Petition 988
AT&T Site CT2547

Tower Owner/Manager: SBA

Equipment Configuration: Monopole (Proposed conversion to a Guyed Monopole)

Current and/or approved: Low profile platform @ 130 ft.
Nine PowerWave P65-16-XLH-RR antennas @ 130 ft c.l.
Six PowerWave TMA's @ 130 ft
Six remote radio heads @ 130 ft
Twelve runs 1 5/8 inch coax
Equipment shelter

Planned Modifications: Remove existing platform and all antennas, TMA's, and associated equipment from 130 ft level.
Remove six 1-5/8 inch coax lines -- Six to remain.
Install recommended structural modifications, including guy lines.
Install one Commscope MTC3607R antenna platform with handrails @ 130 ft level.
Reinstall three PowerWave P65-16-XLH-RR antennas @ 130 ft c.l.
Install nine CCI HPA-65R-BUU-H6 antennas @ 130 ft c.l.
Install three CCI TMA's @ 130 ft.
Install 18 remote radio heads and six associated A2 modules @ 130 ft.
Install three Raycap DC6-48-60-18-8F surge arrestors @ 130 ft.
Install one fiber cable and six DC control cables.

Power Density:

Calculations for AT&T's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the monopole base, of approximately 56.2 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency

electromagnetic radiation power density for AT&T's planned operations would be approximately 56.1 % 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 *							47.05
AT&T LTE *	130	740	1	500	0.0106	0.4933	2.16
AT&T GSM *	130	1900 Band	1	427	0.0091	1.0000	0.91
AT&T GSM *	130	880 - 894	3	296	0.0189	0.5867	3.22
AT&T UMIS *	130	1900 Band	1	500	0.0106	1.0000	1.06
AT&T UMIS *	130	880 - 894	1	500	0.0106	0.5867	1.81
Total							56.2%

* Per CSC records.

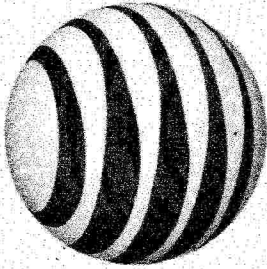
Proposed

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 *							47.05
AT&T LTE	130	700 Band	1	500	0.0106	0.4667	2.28
AT&T LTE	130	1900 Band	1	500	0.0106	1.0000	1.06
AT&T LTE	130	2300 Band	1	500	0.0106	1.0000	1.06
AT&T UMIS	130	880 - 894	2	500	0.0213	0.5867	3.63
AT&T UMIS	130	1900 Band	1	500	0.0106	1.0000	1.06
Total							56.1%

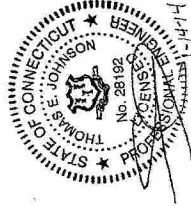
* Per CSC records.

Structural information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications upon completion of recommended structural modifications described in attachments hereto. (FDH Engineering, 4-4-14)



at&t

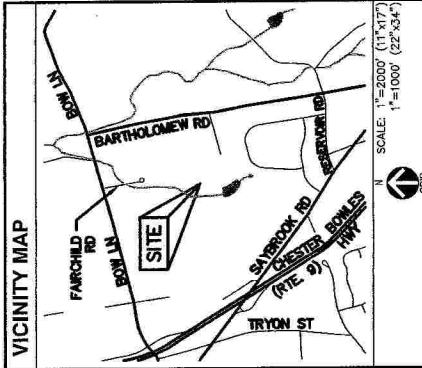


MIDDLETOWN CT (CT-2547)

50 FAIRCHILD ROAD
MIDDLETOWN, CT 06457

SITE TYPE: MONOPOLE - LTE ALTERATION

PROJECT SUMMARY	
SITE NAME:	MIDDLETOWN CT
SITE ADDRESS:	50 FAIRCHILD ROAD MIDDLETOWN, CT 06457
COUNTY:	MIDDLESEX
TAX ID:	MAP 42, LOT 118
ZONING JURISDICTION:	TOWN OF MIDDLETOWN
ZONING CLASSIFICATION:	(R-30) RESIDENTIAL
CONSTRUCTION TYPE:	ALTERATION
LATITUDE:	41° 32' 42.0" N ± (ASR RECORD)
LONGITUDE:	72° 37' 14.8" W ± (ASR RECORD)
PROPERTY OWNER:	N/F STEPHEN & BARBARA BORELLI 58 EDGEWOOD DRIVE MIDDLETOWN, CT 06457
APPLICANT: (LESSOR/LICENSEE):	NEW COUNCILAR WIRELESS PCS, LLC
PROJECT OWNER:	550 COCHITATE ROAD FRAMMINGHAM, MA 01701
ARCHITECT/ENGINEER:	PROTERRA DESIGN GROUP, LLC 1 SHORT STREET, SUITE 3 NORTHAMPTON, MA 01060



SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	4
GN-1	GENERAL NOTES	4
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A-2	EQUIPMENT ROOM PLAN	4
S-1	STRUCTURAL DETAILS	4
S-2	STRUCTURAL DETAILS	4
S-3	STRUCTURAL DETAILS	4
E-1	ELECTRICAL & GROUNDING DETAILS	4

SCALE NOTES	
1.	THIS SHEET SET WAS ORIGINALLY SETUP AS 11"X17".
2.	PRINTING TO ANSI B (22"X34") WILL RESULT IN A DOUBLE SCALE SHEET SET WITH 1" MARGINS. RESULTING SCALES WILL BE THOSE NOTED IN TEXT. EXAMPLE: 1"=2000' (11"X17") WILL BECOME 1"=1000' (22"X34").
3.	CONFIRM ALL SCALED DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN. GRAPHICAL SCALES WILL BE UNCHANGED BY ENLARGEMENT OR REDUCTION.

PROJECT DESCRIPTION	
1.	THIS PLAN SET DETAILS A MODIFICATION TO AN EXISTING MONOPOLE STRUCTURE TO ACCOMMODATE THE INSTALLATION OF RESTRICTED-ACCESS EQUIPMENT AND ANTENNAS.
2.	THIS IS UNLIMITED RESTRICTED-ACCESS EQUIPMENT AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
3.	NO SOLID WASTE OR HAZARDOUS WASTE WILL BE GENERATED AT THIS LOCATION.
4.	NO PORTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
5.	NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
6.	NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.
7.	NO HAZARDOUS WASTE WILL BE GENERATED AT THIS LOCATION. MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

PLAN NOTES	
1.	EXISTING CONDITIONS BASED ON A FIELD VISIT BY PROTERRA DESIGN GROUP, LLC ON AUGUST 23, 2013.
2.	CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED. RECORD IS TO BE INFORMED OF ANY DISCREPANCIES PRIOR TO COMMENCING CONSTRUCTION ACTIVITY.
3.	ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED BY FIELD SURVEY AND SHALL BE SHOWN ON ALL PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION INFORMATION: 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: 888-344-7233 DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 888-344-7233

ProTerra
DESIGN GROUP, LLC
1 Short Street
Suite 3
Northampton, MA 01060
Ph: (413)320-4818
Fax: (413)320-4817

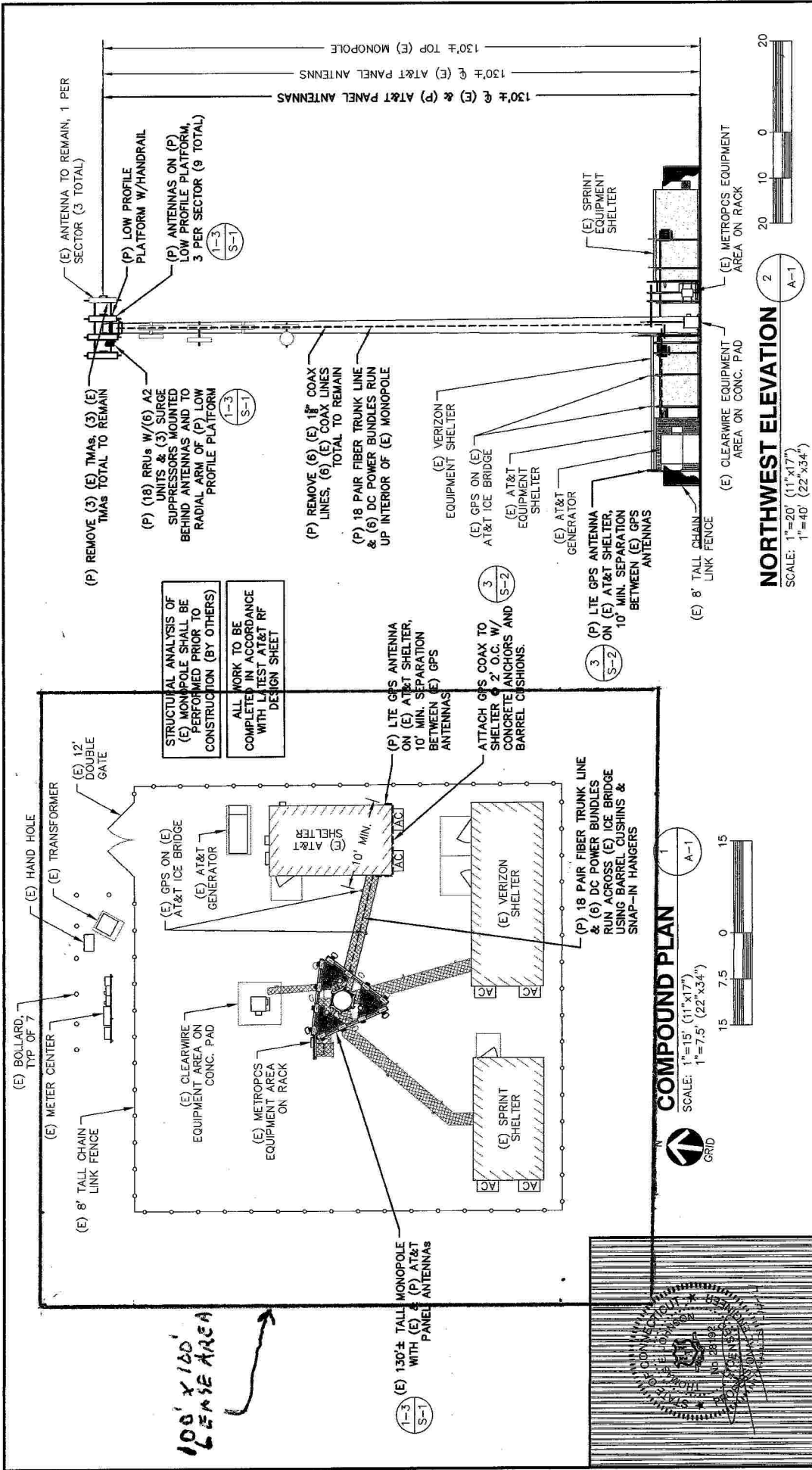
SAI
27 Northwestern Drive
Salem, NH 03075

at&t
New England Wireless PCS, LLC
550 Cochituate Road
Frammingham, MA 01701

CT-2547
50 FAIRCHILD ROAD
MIDDLETOWN, CT 06457

REVISIONS	
2	REVISED SCOPE
3	COMMENTS
4	COMMENTS

DESIGNED BY:	JMM/TEJ	JOB #:	11-023
DRAWN BY:	JEB	REV. #:	4
DATE:	01/14/14	T-1	
SCALE:	AS NOTED		



NORTHWEST ELEVATION
 SCALE: 1"=20' (11"x17")
 1"=40' (22"x34")

COMPOUND PLAN
 SCALE: 1"=15' (11"x17")
 1"=7.5' (22"x34")

REVISIONS	
2	REVISED SCOPE
3	COMMENTS
4	COMMENTS

SITE NUMBER
CT-2547
 50 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457

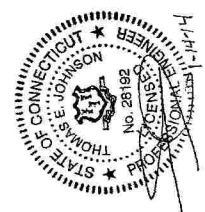
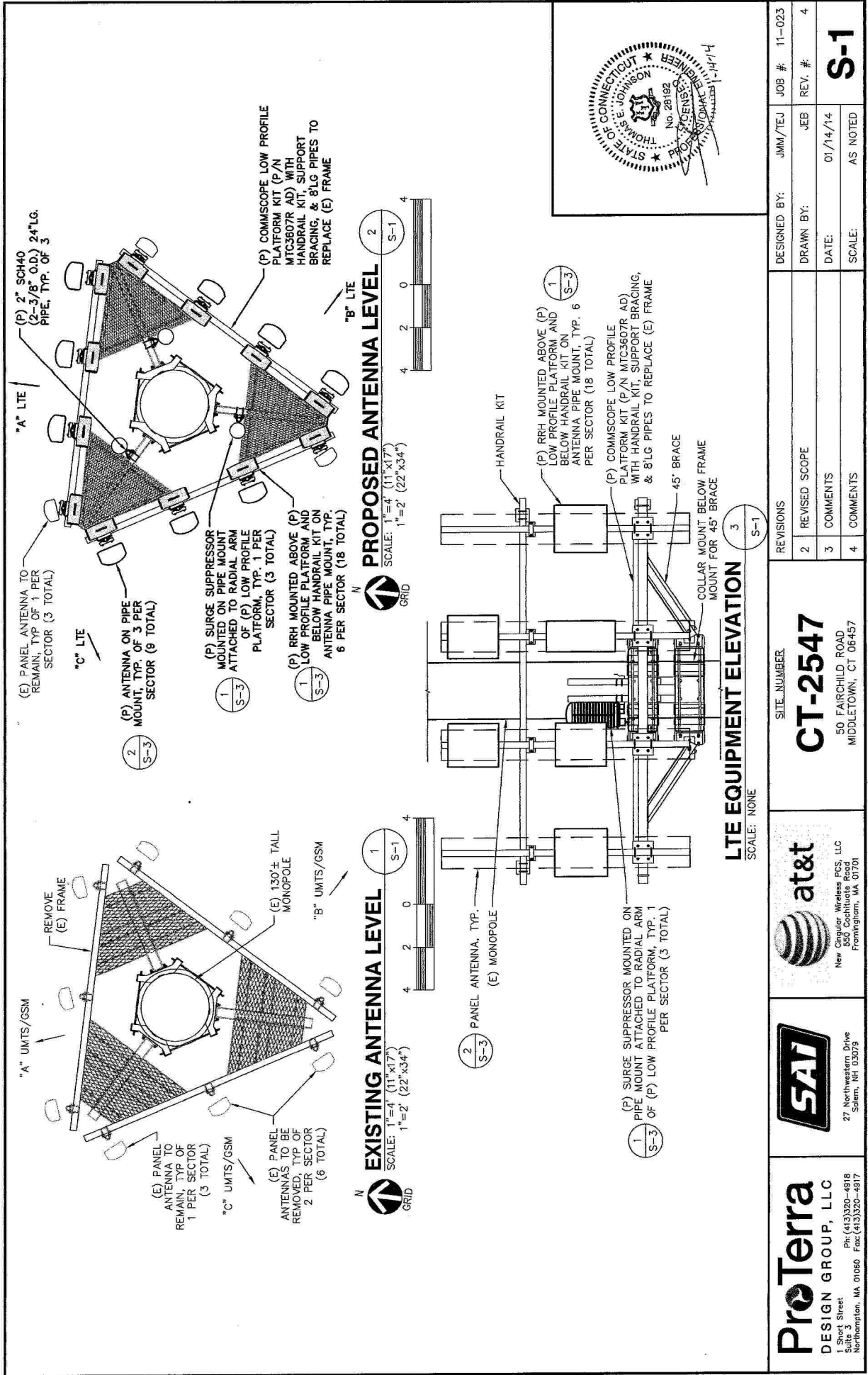


SAD
 27 Northwestern Drive
 Salem, NH 03079

ProTerra
DESIGN GROUP, LLC
 1 Short Street
 Site 3
 Northampton, MA 01060
 Ph: (413)320-4916
 Fax: (413)320-4917

DESIGNED BY: JMM/TEJ
 DRAWN BY: JEB
 DATE: 01/14/14
 SCALE: AS NOTED

JOB #: 11-023
 REV. #: 4
A-1



DESIGNED BY:	JMM/TEJ	JOB #:	11-023
DRAWN BY:	JEB	REV. #:	4
DATE:	01/14/14		
SCALE:	AS NOTED		

REVISIONS	
2	REVISED SCOPE
3	COMMENTS
4	COMMENTS

SITE NUMBER
CT-2547
 50 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457



SAI
 27 Northwestern Drive
 Salem, NH 03079

ProTerra
DESIGN GROUP, LLC
 1 Short Street
 Suite 3
 Northampton, MA 01080
 Ph: (413)320-4818
 Fax: (413)320-4817

S-1

PREPARED BY:
FDH
 ENGINEERING INNOVATION
 901 WINDSOR DRIVE
 FAYETTEVILLE, NC 27188
 PHONE: 704/786-1311
 FAX: 704/786-1331

ENGINEERING FOR:
SBA
 5000 BROOKEN SOUND PARKWAY, NW
 BOON BROOK, FL 33487
 (888) 467-5142



BRADLEY R. NEWMAN, P.E.
 CONNECTICUT LIC. NO. 28830
 DRAWN BY:
 CHECKED BY:
 ENG APP'D:
 PROJECT NO.: 1423H01.000

DATE	DESCRIPTION	BY	APP'D
04/04/14	CONSTRUCTION	D	

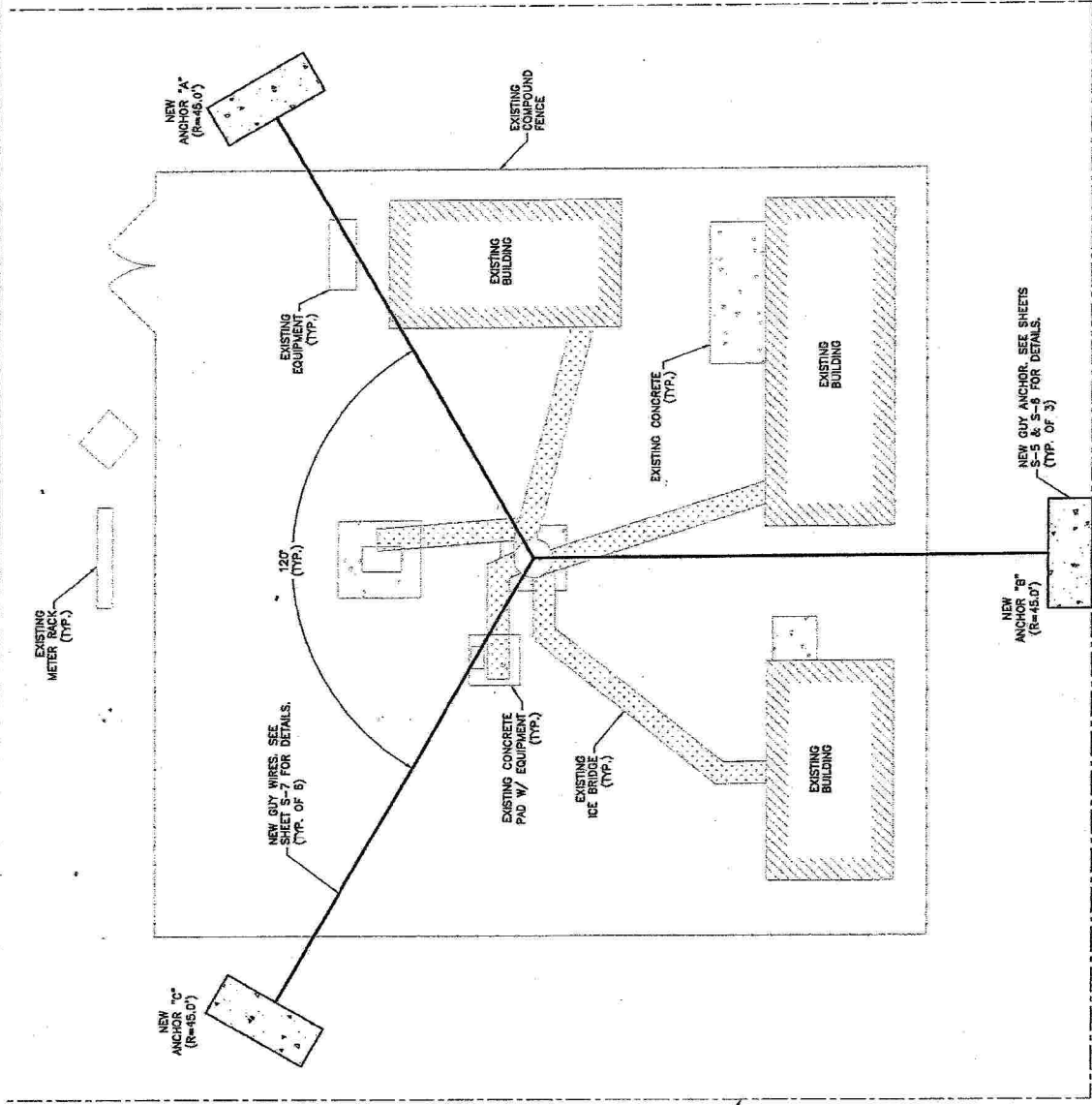
THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY TO THE ENGINEER. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. NO PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
 MIDDLETOWN 2, CT
 SITE NUMBER:
 CT13064-A-05

SITE ADDRESS:
 67 FAIRCHILD ROAD
 MIDDLETOWN, CT 06467

SHEET TITLE
 SITE PLAN

SHEET NUMBER
S-4



SITE PLAN
 PLAN VIEW
 1 PLAN
 S-4 NTS

POST CONSTRUCTION INSPECTION NOTES:

- GENERAL**
- THE POST CONSTRUCTION INSPECTION (PCI) 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 (EOR).
 - THE PCI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE PCI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.
 - ALL PCIS SHALL BE CONDUCTED BY A PCI INSPECTOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR FDH ENGINEERING, INC.
 - TO ENSURE THAT THE REQUIREMENTS OF THE PCI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE PCI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY, IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR FDH POINT OF CONTACT (POC).
 - REFER TO COR-01; CONTRACTOR CLOSEOUT REQUIREMENTS FOR FURTHER DETAILS AND REQUIREMENTS.

- PCI INSPECTOR**
- THE PCI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE PCI TO, AT A MINIMUM:
 - REVIEW THE REQUIREMENTS OF THE PCI CHECKLIST
 - COORDINATE WITH THE GC ON THE SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
 - THE PCI 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 PCI REPORT TO FDH.

- CORRECTION OF FAILING PCIS**
- IF THE MODIFICATION INSTALLATION WOULD FAIL THE PCI (FAILED PCI), THE GC SHALL WORK WITH FDH 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 PCI.
 - 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 PCI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE PCI REPORT:
 - PRE-CONSTRUCTION GENERAL SITE CONDITION
 - PHOTOS DURING THE REINFORCEMENT/ MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - RAW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - CHANGING MODIFICATIONS
 - WELD PREPARATION
 - BOLT INSTALLATION AND TORQUE
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
 - POST CONSTRUCTION PHOTOGRAPHS
 - FINAL IN-FIELD CONDITION
 - PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

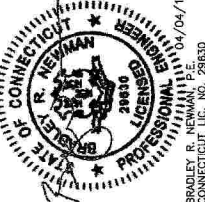
PCI CHECKLIST		REPORT ITEM
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED		
PRE-CONSTRUCTION		
X	PCI CHECKLIST DRAWING	
N/A	EOR APPROVED SHOP DRAWINGS	
N/A	FABRICATION INSPECTION	
X	FABRICATOR CERTIFIED WELD INSPECTION	
X	MATERIAL TEST REPORT (MTR)	
N/A	FABRICATOR NDE INSPECTION	
N/A	NDE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

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE PCI REPORT
 N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PCI REPORT

PREPARED BY:

 500 MEMORIAL DRIVE
 RALEIGH, NC 27616
 PHONE: 919-286-1000
 FAX: 919-286-1001

PREPARED FOR:

 5900 BROOKEN SOUND PARKWAY, NW
 BOCA RATON, FL 33487
 (561) 467-5100



BRADLEY R. NEWMAN, P.E.
 CONNECTICUT LIC. NO. 29830

DRAWN BY: PF
 CHECKED BY: DZ
 ENG/APPV'D: BRN
 PROJECT NO: 1423HD1400

SUBMITTALS		NO.
DATE	DESCRIPTION	
5/4/24/14	CONSTRUCTION	0

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SITE NAME:
MIDDLETOWN 2, CT

SITE NUMBER:
CT13064-A-05

SITE ADDRESS:
**67 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457**

SHEET TITLE
**POST CONSTRUCTION
 INSPECTION NOTES**

SHEET NUMBER
N-1

PREPARED BY:




6874 MEDICAL DRIVE
RALEIGH, NC 27616
PHONE: 919-785-1033
FAX: 919-785-1033
ENGINEERING INNOVATION

PREPARED FOR:



5900 BROOKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800) 457-5762



BRADLEY R. NEWMAN
CONNECTION LIC. NO. 29830
04/04/14

DATE: 04/04/14
DESIGNER: BRN
CHECKED BY: DZ
ENG APPRVD: BRN
PROJECT NO: 1423HD/400

DATE	DESCRIPTION	BY
04/04/14	CONSTRUCTION	D

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SITE NAME:
MIDDLETOWN 2, CT

SITE NUMBER:
CT13064-A-05

SITE ADDRESS:
67 FAIRCHILD ROAD
MIDDLETOWN, CT 06457

SHEET TITLE:
FOUNDATION NOTES

SHEET NUMBER:
N-3

FOUNDATION NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES.
- PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
- ALL WORK PRESENTED ON THESE DRAWINGS IS TO BE COMPLETED BY THE CONTRACTOR UNLESS OTHERWISE NOTED AND/OR AGREED TO WITH FDH ENGINEERING.
- THE CONTRACTOR MUST HAVE EXPERIENCE IN PERFORMANCE OF WORK DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT THEY HAVE SUFFICIENT EXPERIENCE, ABILITY, AND KNOWLEDGE OF WORK TO BE PERFORMED AND THAT THEY ARE PROPERLY LICENSED, REGISTERED, AND/OR ENSURED TO PERFORM THIS WORK.
- CONTRACTOR IS REQUIRED TO HAVE ALL NECESSARY INSPECTIONS PERFORMED BY THE LOCAL BUILDING CODE OFFICIAL OR AN APPROVED AGENCY.
- FOUNDATION DESIGN ASSUMES FIELD INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ANY ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED UPON CONDITIONS EXISTING AT THE SITE.
- ALL HARDWARE ASSEMBLY AND MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED; ANY CONTRADICTION BETWEEN THE MANUFACTURER'S RECOMMENDATIONS AND THESE DRAWINGS ARE TO BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER AND OWNED.
- ANY CONTRACTOR INSTALLING ADHESIVE ANCHORING SYSTEMS SHALL BE TRAINED, IN PERSON BY A MANUFACTURER'S REPRESENTATIVE, ON THE PROPER INSTALLATION TECHNIQUES. THIS TRAINING SHALL INCLUDE THE ADHESIVE, ANCHORING SYSTEM, AND INSTALLATION METHODS FOR THE ADHESIVE ANCHORING SYSTEM. ALL TRAINING TO BE CONDUCTED PRIOR TO CREWS STEPPING ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT MANUFACTURER FOR TRAINING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST OCCURRED FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF MAINTAINING LAYOUT AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THE WORK COMPLES WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS.
- ALL DIMENSIONS AND/OR ELEVATIONS, OR SIMILAR EXISTING CONDITIONS SHOWN ON THE DRAWING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIAL ORDERING, FABRICATION, OR CONSTRUCTION WORK. ANY DISCREPANCIES MUST BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER/OWNER. DISCREPANCIES MUST BE RESOLVED BEFORE CONTRACTOR IS TO PROCEED WITH THE WORK.
- FOUNDATION DESIGN HAS BEEN DEVELOPED IN ACCORDANCE WITH LOCAL BUILDING CODES. LOCAL BUILDING CODES VARY FROM THOSE VALUES USED IN THE DESIGN, THEN FDH ENGINEERING, INC. SHOULD BE NOTIFIED IMMEDIATELY.
- FOUNDATION BACKFILL SHALL BE PLACED IN 8-INCH MAXIMUM LAYERS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR). ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 125 LBS PER CUBIC FOOT.
- ANY EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" MINIMUM.
- CONTRACTOR TO PROVIDE A "SAFE WORKING" SOIL SLOPE FOR EXCAVATIONS DEEPER THAN 4 FT. (I.E. FOR EVERY FOOT OF DEPTH, TRENCH MUST BE EXCAVATED BACK 1-1/2FT). IF "SAFE WORKING" SOIL SLOPE CANNOT BE OBTAINED, CONTRACTOR SHALL PROVIDE SHIELDING, SHORING, BRACING, OR OTHER APPLICABLE SAFETY CODES & REGULATIONS DURING CONSTRUCTION.

FOUNDATION CONCRETE:

- WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 - BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
 - PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED WEAR AND TEAR. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.
 - CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS. INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE CONCRETE.
 - LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. CONCRETE SHALL BE PLACED ON UNDISTURBED SOIL, AND LOOSE CUTTINGS SHALL BE REMOVED FROM SIDES OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
 - IN COLD WEATHER CONDITIONS, WORK SHALL BE IN ACCORDANCE WITH ACI 308.1-80 (REAPPROVED 2002). SEE ACI 308 FOR DESCRIPTION OF COLD WEATHER CONDITIONS.
 - SULFATE RESISTANT CEMENT SHALL BE USED IN AREAS WHICH ARE KNOWN TO HAVE HIGH SULFATES IN SOIL AND GROUND WATER.
- CONCRETE TESTING:**
- SLUMP TEST SHALL BE PERFORMED ON-SITE TO ENSURE WORKABILITY OF CONCRETE.
 - ALL TEST CYLINDERS SHALL BE MADE AND CURED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. COMPRESSION TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM C39.
 - CYLINDERS TO BE BROKEN ON DAYS 7 AND 28. (2) ADDITIONAL CYLINDERS SHOULD BE AVAILABLE FOR ANY ADDITIONAL TESTING.
 - A SUFFICIENT SAMPLING OF CONCRETE SHALL BE TAKEN TO ENSURE A FAIR REPRESENTATION OF THE CONCRETE USED FOR ALL SLUMP AND COMPRESSION TESTS. NON-COMFORMING MATERIAL SHALL NOT BE ACCEPTED BY CONTRACTOR.
- FOUNDATION REINFORCEMENT:**
- REINFORCEMENT SHALL BE DETORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
 - REINFORCEMENT SHALL BE PROPERLY PLACED PRIOR TO ANY CONCRETE PLACEMENT. REINFORCING SHALL BE BRACED TO RETAIN POSITION THROUGHOUT PLACING AND THROUGHOUT PLACEMENT OF CONCRETE.
 - WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
 - MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES. REBAR CHAIRS MUST BE USED TO ENSURE THE 3 INCH MINIMUM COVER. CONCRETE BLOCKS ARE NOT TO BE USED TO OBTAIN MINIMUM COVER.

PREPARED BY:




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ENGINEERING INNOVATION

PREPARED FOR:



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BOSTON, MA 02447
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BRADLEY R. NEWMAN
PROFESSIONAL ENGINEER
CONNECTION LIC. NO. 29630
04/04/14

DRAWN BY: PF
CHECKED BY: DZ
ENG APP'D: BRN
PROJECT NO: 1423HD1400

DATE	DESCRIPTION	BY	TO
04/24/14	CONSTRUCTION		

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SITE NAME:
MIDDLETOWN 2, CT

SITE NUMBER:
CT13064-A-05

SITE ADDRESS:
67 FAIRCHILD ROAD
MIDDLETOWN, CT 06457

SHEET TITLE
MODIFICATION
SCHEDULE

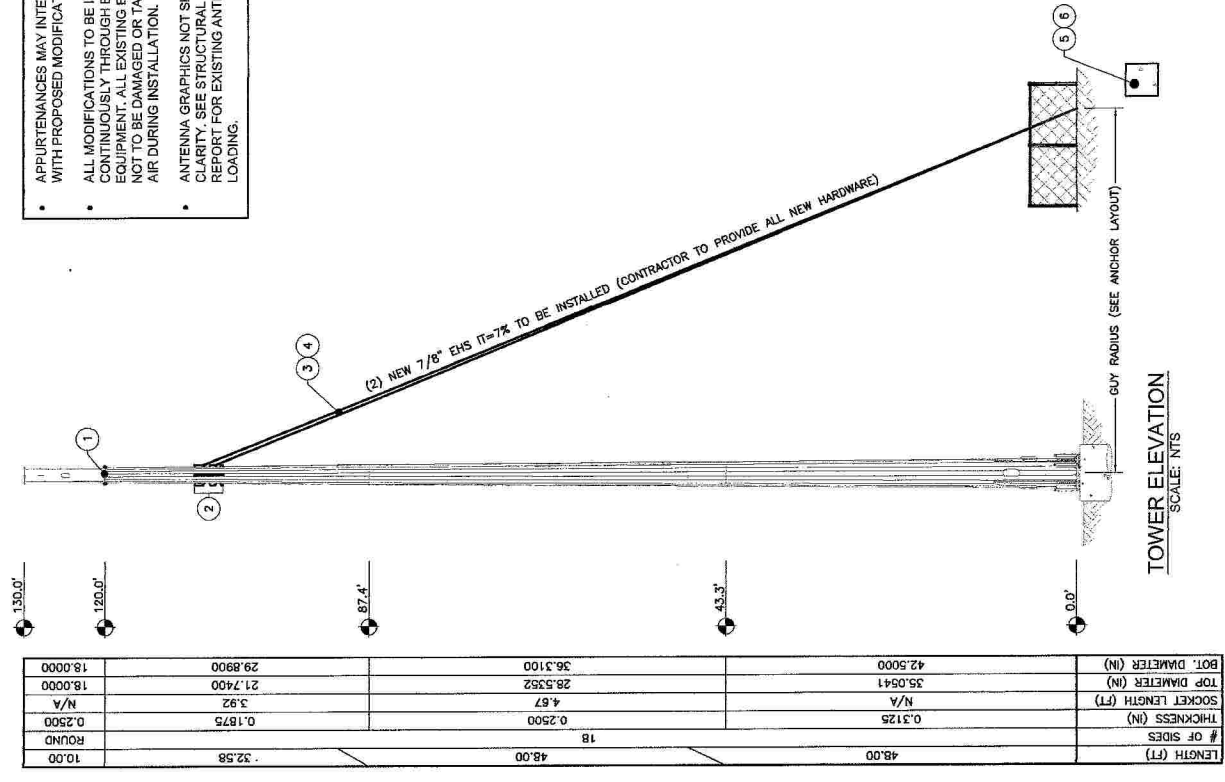
SHEET NUMBER
S-1

TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BOTTOM ELEV. (FT)	TOP ELEV. (FT)
1	INSTALLATION OF NEW REPLACEMENT FLANGE BOLTS. SEE SHEET S-2 FOR DETAILS.	-	120.0±
2	INSTALLATION OF NEW GUY LUGS. SEE S-3 FOR DETAILS.	106.5±	109.0±
3	INSTALLATION OF (2) NEW 7/8" EHS GUY WIRE (1=7%). (CONTRACTOR TO PROVIDE ALL NEW HARDWARE). SEE S-7 FOR DETAILS.	106.5±	108.0±
4	CONTRACTOR TO PULLMB TOWER & TENSION ALL GUY WIRES (IT) AS SHOWN. SEE S-8 FOR DETAILS.	-	VARIES
5	INSTALLATION OF (3) NEW GUY ANCHOR FOUNDATIONS. SEE S-4 THROUGH S-6 FOR DETAILS.	-10.0±	1.0±
6	INSTALLATION OF NEW FENCE AROUND NEW GUY ANCHORS.	-3.0±	6.0±

TOWER FINISH: GALVANIZED

- 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.



10.00	ROUND	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00
18	THICKNESS (IN)	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00
18	# OF SIDES	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00
48.00	LENGTH (FT)	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00
48.00	TOP DIAMETER (IN)	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00
42.5000	BOT. DIAMETER (IN)	0.2500	0.1875	3.92	21.7400	29.8900	18.0000	18.0000	42.5000	48.00

CONTRACTOR TO REMOVE & REPLACE ONLY (1) BOLT AT A TIME. NO MORE THAN (1) FLANGE BOLT IS TO BE REMOVED AT ANY GIVEN TIME.


REPLACEMENT FLANGE BOLT INSTALLATION SCHEDULE


ELEVATION	EXISTING BOLT SIZE	EXISTING BOLT GRADE	NEW BOLT SIZE	NEW BOLT GRADE
120.0 ±	(6) 1"*	A325N	(6) 1"*	A490N

1 ELEVATION REQUIRES FLANGE BOLT REPLACEMENT

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 BRADLEY R. NEWMAN
 PROFESSIONAL ENGINEER
 LICENSE NO. 29630
 CONNECTICUT LIC. NO. 29630

DRAWN BY: PF
 CHECKED BY: DZ
 ENGINEERED BY: BRN
 PROJECT NO: 1423HD1400

DATE	SUBMITTALS	REVISIONS
04/24/14	ISSUED FOR CONSTRUCTION	0

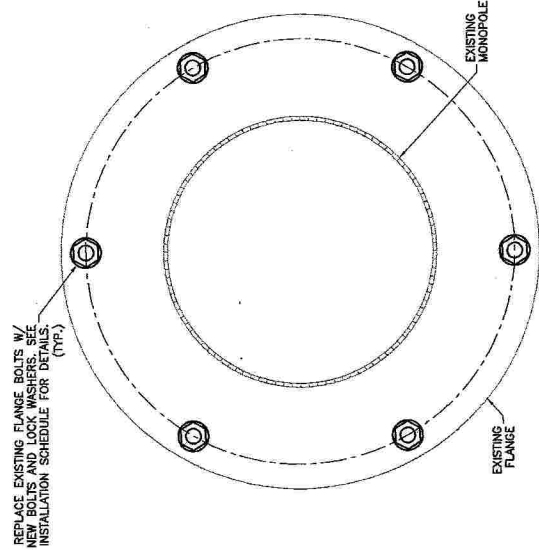
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 MIDDLETOWN 2, CT
 SITE NUMBER:
 CT13064-A-05

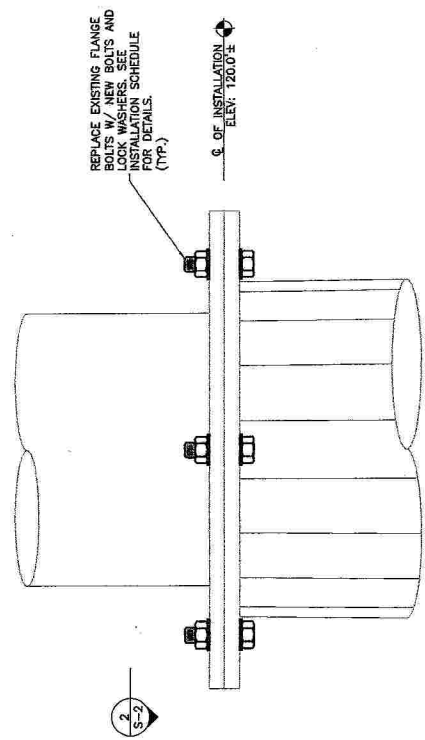
SITE ADDRESS:
 67 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457

SHEET TITLE
 FLANGE BOLT REPLACEMENT DETAILS

SHEET NUMBER
 S-2



FLANGE BOLT REPLACEMENT LAYOUT
 PLAN VIEW
 SECTION 2
 SCALE: 1 1/2" = 1'-0"



FLANGE BOLT REPLACEMENT LAYOUT
 ELEVATION VIEW
 SECTION 1
 SCALE: 1 1/2" = 1'-0"

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PROFESSIONAL SEAL
 STATE OF CONNECTICUT
 R. NEWMAN
 LICENSE NO. 28630
 06/04/14
 BRADLEY R. NEWMAN, P.E.
 CONNECTICUT LIC. NO. 28630

DRAWN BY: PF
 CHECKED BY: DZ
 ENG APP'VD: BRN
 PROJECT NO: 1423RD1400

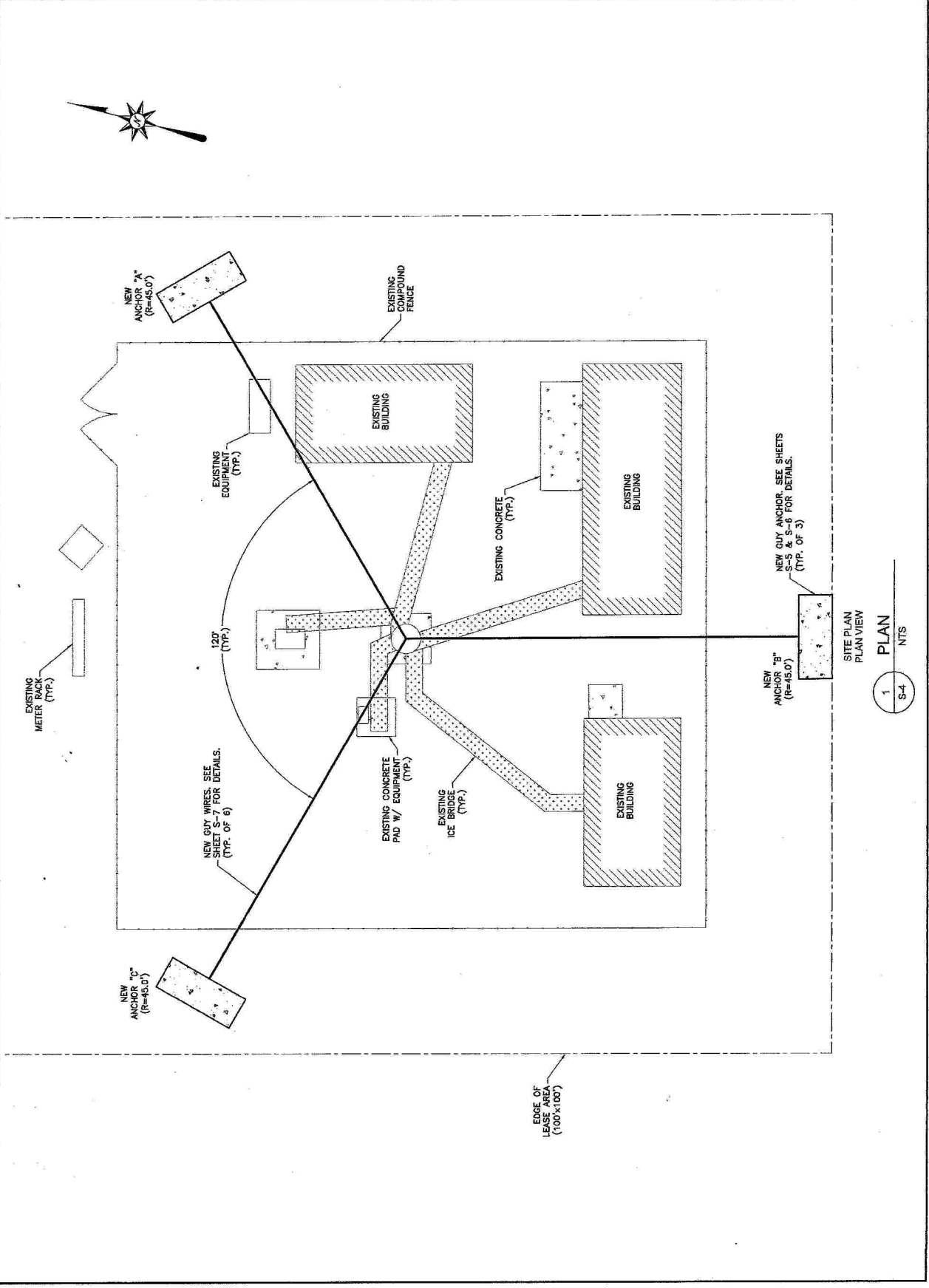
DATE	SUBMITTALS	REV
04/24/14	CONSTRUCTION	0

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SITE NAME:
MIDDLETOWN 2, CT
 SITE NUMBER:
CT13064-A-05
 SITE ADDRESS:
**87 FAIRCHILD ROAD
 MIDDLETOWN, CT 06467**

SHEET TITLE
SITE PLAN

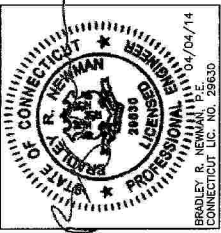
SHEET NUMBER
S-4



SITE PLAN
 PLAN VIEW
 1 PLAN
 S-4 NTS

PREPARED BY:
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PREPARED FOR:
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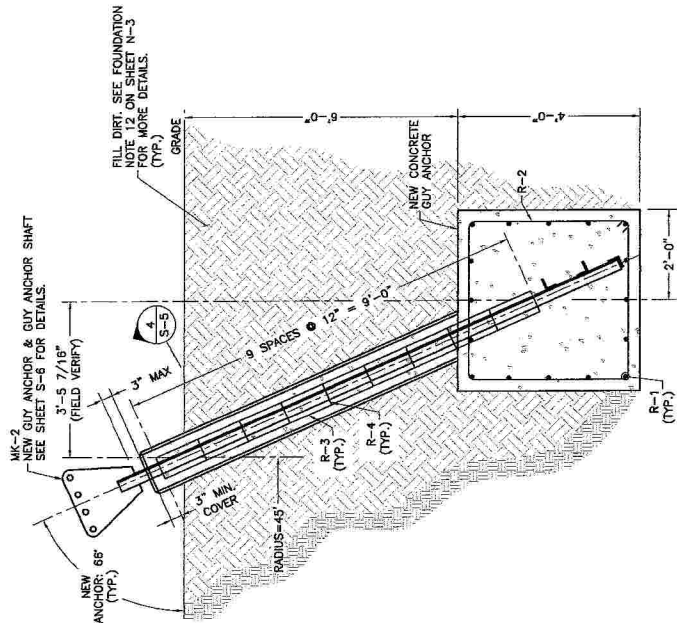


BRADLEY, R. NEWMAN
 CONNECTICUT LIC. NO. 24830
 DRAWN BY: PF
 CHECKED BY: DZ
 ENG. APPROV.: BRN
 PROJECT NO.: 1423H01400

DATE	DESCRIPTION	BY
02/04/14	CONSTRUCTION	0

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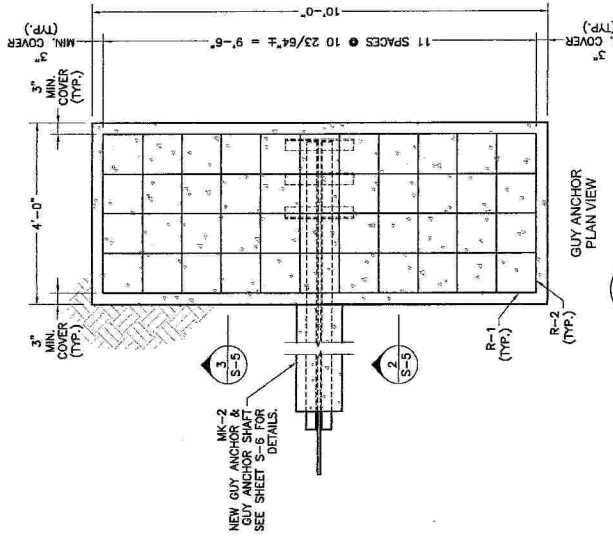
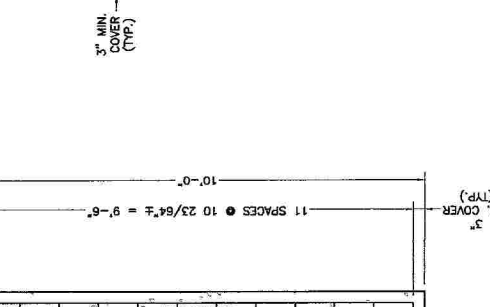
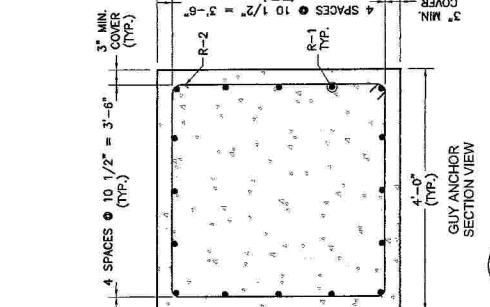
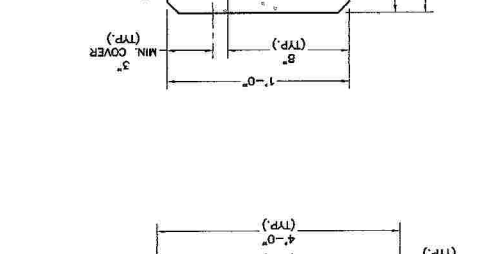
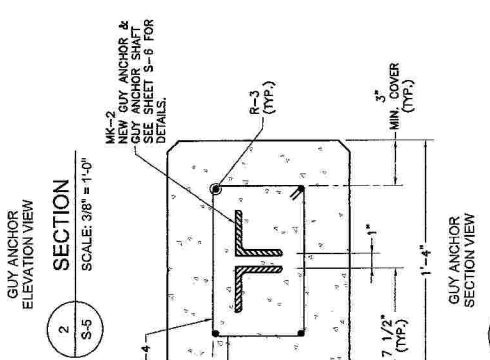
SITE NAME:
MIDDLETOWN 2, CT
 SITE NUMBER:
CT13064-A-05
 SITE ADDRESS:
**87 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457**
 SHEET TITLE:
**NEW GUY ANCHOR
 FOUNDATION DETAILS I**
 SHEET NUMBER:
S-5



- CONTRACTOR TO PROVIDE ENGINEER OF RECORD WITH PICTURES OF REBAR LAYOUT FOR APPROVAL PRIOR TO POURING CONCRETE.
- CONTRACTOR RESPONSIBLE FOR REPLACING ANY GROUNDING MATERIAL THAT MAY NEED TO BE REPLACED OR REMOVED DUE TO PROPOSED INSTALLATION.
- WIRE RELOCATE SHOULD NOT BE PERFORMED IF WIND SPEEDS EXCEED 20MPH.
- CONTRACTOR TO BE AWARE THAT SOIL MATERIAL BELOW GRADE MAY BE VERY STIFF.

NEW GUY ANCHOR MATERIAL LIST				
PART NO.	SHAPE	QTY.*	LENGTH	DESCRIPTION
MK-2	-	1	SEE SHEET S-6	GUY ANCHOR AND GUY ANCHOR SHAFT
R-1	-	16	9'-0"±	#6 REBAR
R-2**	□	12	15'-0"±	#3 REBAR STIRRUPS W/ 6" OVERLAP
R-3	-	4	9'-0"±	#4 REBAR
R-4**	□	10	3'-0"±	#3 REBAR STIRRUPS W/ 2" OVERLAP
-	-	6.3± CU. YD	N/A	4000 PSI CONCRETE

*QUANTITIES REFLECT INFORMATION FOR (1) NEW GUY ANCHOR, (3) TOTAL REQUIRED.
 **MINIMUM BEND DIAMETER OF REBAR SHOULD BE UTILIZED. USE 5XOR UNLESS OTHERWISE NOTED.



1 PLAN SCALE: 3/8" = 1'-0"
 2 SECTION SCALE: 3/8" = 1'-0"
 3 SECTION SCALE: 1/2" = 1'-0"
 4 SECTION SCALE: 1 1/2" = 1'-0"

PREPARED BY:
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BRADLEY R. NEWMAN
 CONNECTICUT LIC. NO. 29830

DATE: 04/04/14
 DRAWN BY: PF
 CHECKED BY: DZ
 ENG/APP'D: BRN
 PROJECT NO: 1423HD1400

DATE	DESCRIPTION	BY
04/04/14	ISSUED FOR CONSTRUCTION	B

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SITE NAME:
MIDDLETOWN 2, CT

SITE NUMBER:
CT13064-A-05

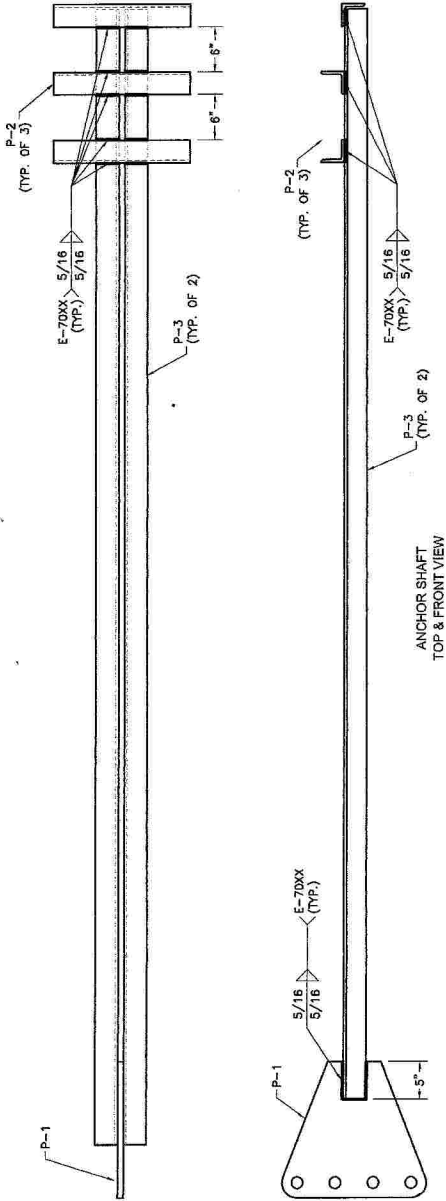
SITE ADDRESS:
**67 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457**

SHEET TITLE
**NEW GUY ANCHOR
 FOUNDATION DETAILS II**

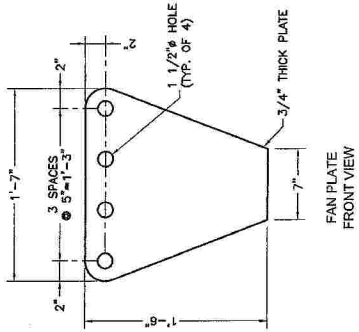
SHEET NUMBER
S-6

MATERIAL LIST (MK-2)		
PART. NO.	QTY.	DESCRIPTION
P-1	1	FAN PLATE
P-2	3	BEARING ANGLE
P-3	2	ANCHOR SHAFT

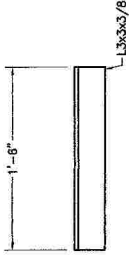
*QUANTITIES REFLECT INFORMATION FOR
 (1) NEW ANCHOR. (3) TOTAL REQUIRED.



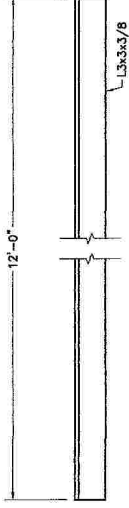
MK-2
S-6
 ANCHOR SHAFT
 TOP & FRONT VIEW
 DETAIL
 SCALE: 3/4" = 1'-0"



P-1
S-6
 FAN PLATE
 FRONT VIEW
 DETAIL
 SCALE: 1" = 1'-0"



P-2
S-6
 BEARING ANGLE
 FRONT VIEW
 DETAIL
 SCALE: 1" = 1'-0"

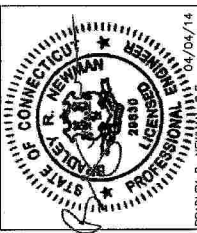


P-3
S-6
 ANCHOR SHAFT
 TOP & FRONT VIEW
 DETAIL
 SCALE: 1" = 1'-0"

PREPARED BY:
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BRADLEY R. NEWMAN
 CONNECTICUT LIC. NO. 28630
 DATE: 04/04/14
 DRAWN BY: PF
 CHECKED BY: DZ
 ENG APPR'D: BRN
 PROJECT NO: 1423HD1400

SUBMITTALS	
DATE	DESCRIPTION
04/04/14	CONSTRUCTION

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SITE NAME:
 MIDDLETOWN 2, CT
 SITE NUMBER:
 CT13064-A-05
 SITE ADDRESS:
 67 FAIRCHILD ROAD
 MIDDLETOWN, CT 06457

SHEET TITLE
 PULSE CHARTS
 SHEET NUMBER
S-8

GUY #	HEIGHT (ft.)	DIA. (in)	7/8" EHS	RADIUS (ft.)	ANCHOR ELEV. (ft.)	GUY LENGTH (ft.)
2	106.5	7/8"	EHS	45	0	115.6

Initial Tension (%)	Temp. (F)	Guy tension (kips)	Guy tension (kN)	Time For 10 Pulses (Seconds)
7%	0	6.25	27.82	6.48
	10	6.14	27.32	6.54
	20	6.03	26.83	6.60
	30	5.92	26.33	6.66
	40	5.81	25.84	6.72
	50	5.70	25.34	6.79
	60	5.59	24.85	6.86
	70	5.47	24.35	6.92
	80	5.36	23.86	7.00
	90	5.25	23.36	7.07
	100	5.14	22.87	7.15

GUY #	HEIGHT (ft.)	DIA. (in)	7/8" EHS	RADIUS (ft.)	ANCHOR ELEV. (ft.)	GUY LENGTH (ft.)
1	108	7/8"	EHS	45	0	117.0

Initial Tension (%)	Temp. (F)	Guy tension (kips)	Guy tension (kN)	Time For 10 Pulses (Seconds)
7%	0	6.24	27.75	6.56
	10	6.13	27.26	6.62
	20	6.02	26.78	6.68
	30	5.91	26.30	6.74
	40	5.80	25.81	6.81
	50	5.69	25.33	6.87
	60	5.59	24.85	6.94
	70	5.48	24.36	7.01
	80	5.37	23.88	7.08
	90	5.26	23.40	7.15
	100	5.15	22.91	7.22

PULSE CHARTS

1 ANCHORS "A", "B", & "C"
 S-8 NTS

THE CONTRACTOR SHALL CLEARLY LABEL ALL GUYWIRES AT GUY ANCHORS INDICATING THE PERCENT BREAKING STRENGTH TO WHICH THE GUY WIRES ARE TENSIONED. CONTACT TOWER OWNER FOR PREFERRED LABELING PROCEDURE.

ANCHOR DROPOFFS AND RADII MAY VARY. CONTRACTOR TO PERFORM SITE VISIT PRIOR TO MATERIAL ORDERS.


PREPARED BY:



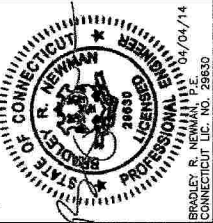
101 WESMONT DRIVE
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ENGINEERING INNOVATION

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BRADLEY R. NEWMAN
PROFESSIONAL ENGINEER
CONNECTICUT LIC. NO. 20630

DATE: 04/29/14
DESCRIPTION: CONSTRUCTION
REV: B

DATE: 04/29/14
DESCRIPTION: CONSTRUCTION
REV: B

DATE	DESCRIPTION	REV
04/29/14	CONSTRUCTION	B

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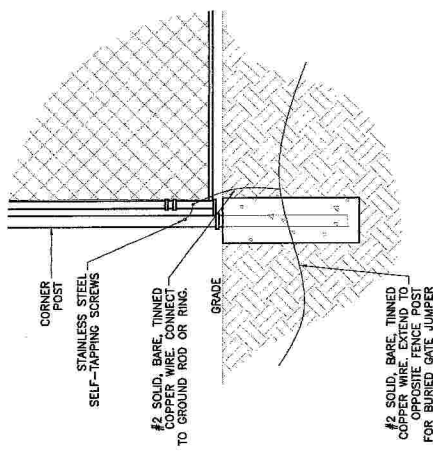
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MIDDLETOWN 2, CT

SITE NUMBER:
CT113064-A-05

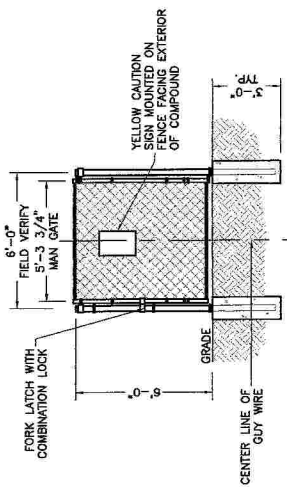
SITE ADDRESS:
67 FAIRCHILD ROAD
MIDDLETOWN, CT 06457

SHEET TITLE
FENCE
DETAILS

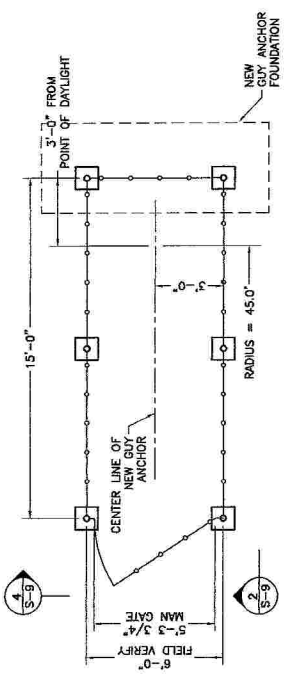
SHEET NUMBER
S-9



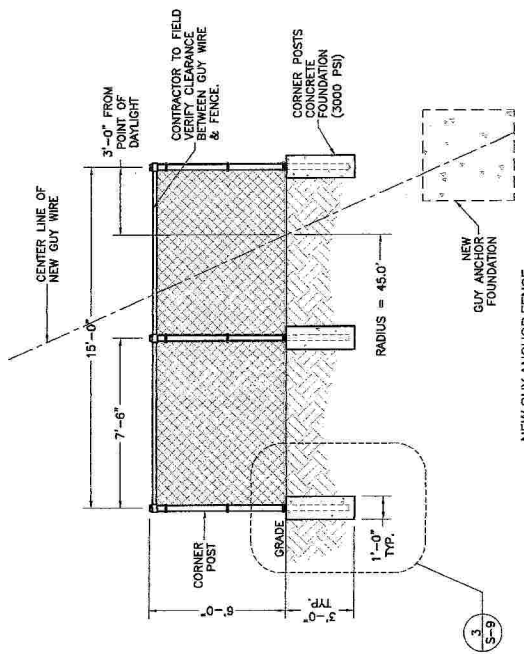
NEW GUY ANCHOR FENCE
3 FOUNDATION DETAIL
S-9 NTS



NEW GUY ANCHOR FENCE
4 FRONT ELEVATION
S-9 NTS



NEW GUY ANCHOR FENCE (3 LOCATIONS)
1 PLAN VIEW
S-9 NTS



NEW GUY ANCHOR FENCE
2 SIDE ELEVATION
S-9 NTS



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for
SBA Network Services, Inc.**

130' Monopole Tower

**SBA Site Name: Middletown 2
SBA Site ID: CT13064-A-05
AT&T Site Name: Middletown
AT&T Site ID: CT2547**

FDH Project Number 1423HD1400

Analysis Results

Tower Components	97.0%	Sufficient
Foundation	57.9%	Sufficient

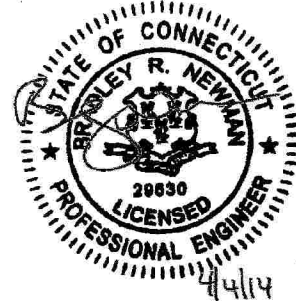
Prepared By:

David Zambrano, EI
Project Engineer

Reviewed By:

Bradley R. Newman, PE
Senior Project Engineer
CT PE License No. 29630

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(919) 755-1012
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April 4, 2014

Prepared pursuant to ANSI/TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas and 2005 Connecticut State Building Code

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Middletown, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G* and *2005 Connecticut State Building Code (CSBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, geotechnical data, and member sizes was obtained from:

- Radian Communication Services (File No. 060-3494) original design drawings dated December 15, 2006
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The *basic design wind speed* per the *ANSI/TIA-222-G* standard and *2005 CSBC* is 110 mph without ice and 50 mph with 3/4" radial ice. Ice is considered to increase in thickness with height. Furthermore, this structure was analyzed as a Class II structure with Exposure Category C, Topographical Factor of 1, and Spectral Response Accelerations of $S_5 = 0.236$ and $S_1 = 0.062$.

Note: Per Section 2.7.3 of the *ANSI/TIA-222-G* standard, the seismic/earthquake loading effects can be ignored if spectral response acceleration at short periods (S_5) is less than or equal to 1.00. The tower's location mandates a design S_5 of less than 1.00, thus seismic loading was not considered as part of the analysis of this structure.

Conclusions

With the existing and proposed antennas from AT&T in place at 130 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standard and *2005 CSBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Radian File No. 060-3494) and the proposed modifications have been correctly installed (see FDH Engineering, Inc. Project No. 1423HD1400), the foundations should have the necessary capacity to support both the proposed and existing 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 *ANSI/TIA-222-G* standard and *2005 CSBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed feed lines must be installed inside the monopole shaft.
2. The proposed TMAs should be installed directly behind the existing and/or proposed antennas
3. RRU/RRH Stipulation: The equipment may be installed in any arrangement determined by the client.
4. Modifications outlined in FDH Engineering, Inc. (Project No. 1423HD1400) Modification Drawings for a 130' Monopole dated April 4, 2014 must be correctly installed in order for this analysis to be valid.

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 the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
130	(9) Powerwave P65-16-XLH-RR (6) Powerwave TT19-08BP111-001 TMAs (6) Powerwave 7010 RETs (6) Ericsson RRUS-11 RRUs	(18) 1-5/8"	AT&T	129	(1) Low-Profile Platform
120	(6) RFS APXV86-906515	(12) 1-5/8"	Nextel	120	(6) Pipe Mounts
111.5	(3) Andrew CBC721-DF	(12) 1-5/8"	Verizon	110	(3) T-Arms
110.5	(3) Antel BXA-70063-6CF-2 (3) Antel BXD-63606380CF				
108.5	(3) Andrew CBC721-DF				
99.5	(3) APXV18-206517S	(6) 1-5/8"	Pocket	99.5	(3) Pipe Mounts
94	(1) 14" x 6.5" x 6" Surge Protector	(3) 5/16 (2) 1/2 (3) 5/8 (3) 1/4	Clearwire	94	Direct Mount
91	(3) Kathrein 840 10054 (3) Samsung RASSPI-2213-RRH			89.5	(3) T-Arms
90.8	(1) Andrew VHLP2-18-DW1				
90.7	(1) VHLP800-11-DW1				

Proposed Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
130	(3) Powerwave P65-16-XLH-RR (9) CCI HPA-65R-BUU-H6 (3) CCI DTMABP7819VG12A-BP TMAs (6) Ericsson RRUS-11 RRUs (6) Ericsson RRUS-12 RRUs (3) Ericsson RRUS-32 RRUs (3) Ericsson RRUS-E2 RRUs (6) Ericsson A2 Modules (3) Raycap DC6-48-60-18-8F Surge Arrestors	(6) 1-5/8" (1) 1.496" Fiber (6) 0.645" Power	AT&T	129	(1) 12.5' Platform w/ Handrails [Commscope P/N MTC3607R]

RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Upper Flange Plate	50 ksi
Guy Lugs	65 ksi
Flange Bolts	$F_u = 150$ ksi
Lower Flange Plate	36 ksi
Inner Anchor Bolts	$F_u = 125$ ksi
Outer Anchor Rods	$F_u = 100$ ksi
Base Plate	50 ksi

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. *Note: Capacities up to 100% are considered acceptable.* **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	130 - 120	Pole	TP18x18x0.25	51.9	Pass
	120	Upper Flange Plate	PL 31.5"Ø x 1" thick	95.1	Pass
		Flange Bolts	(6) 1" Ø on a 28.25"Ø BC	91.3	Pass
		Lower Flange Plate	PL 31.5"Ø x 1" thick	95.1	Pass
L2	120 - 87.42	Pole	TP29.89x21.74x0.1875	75.7	Pass
	107.25	Guy Wire Connection	(3) 42" Lugs, (6) 7/8" Wires	97.0	Pass
L3	87.42 - 43.3367	Pole	TP36.31x28.5352x0.25	42.1	Pass
L4	43.3367 - 8.0833	Pole	TP42.5x35.0541x0.312	31.0	Pass
	8.0833 - 0	Modified Pole	TP42.5x35.0541x0.3125 w/ Flat Plate Modifications	22.3	Pass
		Inner Anchor Bolts	(14) 1.5"Ø on a 47.25"Ø BC	11.3	Pass
	0	Outer Anchor Rods	(4) 2.25"Ø on a 56.75"Ø BC	17.9	Pass
		Base Plate	PL 51.75"Ø x 1.5" thick	10.2	Pass

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis* (ANSI/TIA-222-G)			Original Design (ANSI/TIA-222-G)		
	Horizontal	Vertical	Moment	Horizontal	Vertical	Moment
Base	6	173 k	623 k-ft	20 k	39 k	1,864 k-ft
Anchors	36	84 k	---	---	---	---

* Foundations determined to be adequate per independent analysis.

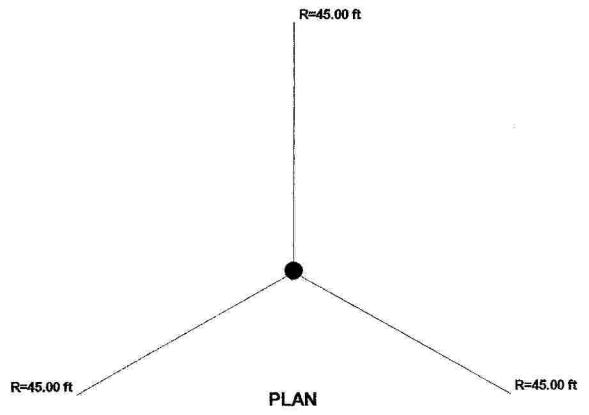
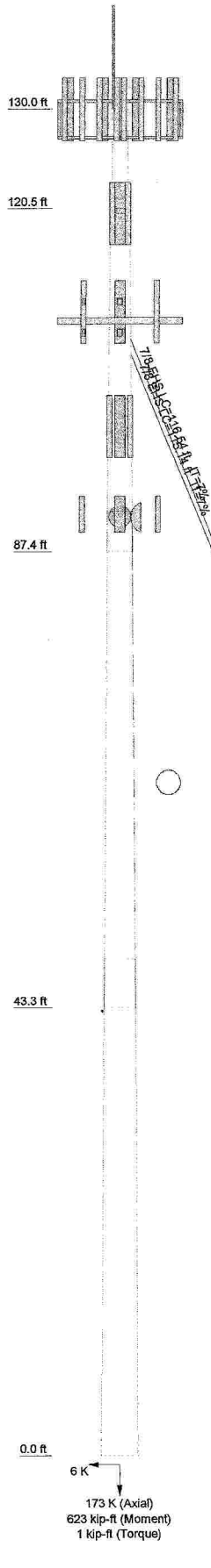
GENERAL COMMENTS

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.

Section	1	2	3	4	5
Length (ft)	9.50	0.50	32.58	48.00	48.00
Number of Sides	1	1	18	18	18
Thickness (in)	0.2500	0.2500	0.1875	0.2500	0.3125
Socket Length (ft)	0.2500	0.2500	3.92	4.67	35.0541
Top Dia (in)	18.0000	18.0000	21.7400	28.5562	42.5000
Bot Dia (in)	18.0000	18.0000	29.8900	36.3100	42.5000
Grade	A500-50	A500-50	A500-50	A572-65	A572-65
Weight (K)	0.5	0.0	1.7	4.2	6.2



DESIGNED APPURTENANCE LOADING

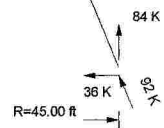
TYPE	ELEVATION	TYPE	ELEVATION
Lighting Rod	130	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXD-63606380CF W/ Mount Pipe	110
DTMABP7819VG12A TMA	129	BXD-63606380CF W/ Mount Pipe	110
DTMABP7819VG12A TMA	129	CBC721-DF	110
DTMABP7819VG12A TMA	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-12	129	CBC721-DF	110
(2) RRUS-12	129	CBC721-DF	110
(2) RRUS-12	129	(3) T-Arms	110
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-E2	129	14" x 6.5" x 6" Surge Protector	94
RRUS-E2	129	VHLP2-18-DW1	90
RRUS-E2	129	VHLP800-11-DW1	90
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
DC6-48-60-18-8F	129	(3) T-Arms	89.5
DC6-48-60-18-8F	129	840 10054 w/ Mount Pipe	89.5
DC6-48-60-18-8F	129	840 10054 w/ Mount Pipe	89.5
(1) Platform w/ Handrails MNT [Commscope P/N MTC3607]	129	840 10054 w/ Mount Pipe	89.5
Kicker Support [Commscope P/N MTC3237]	129		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 110 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 97%



ALL REACTIONS ARE FACTORED

<p>FDH Engineering, Inc. 6521 Meridien Drive, Suite 107 Raleigh, NC 27616 Phone: (919) 755-1012 FAX: (919) 755-1031</p>	<p>Job: Middletown - CT13064-A-05</p>
	<p>Project: 1423HD1400</p>
	<p>Client: SBA Network Services, Inc. Drawn by: David Zambrano App'd:</p>
	<p>Code: TIA-222-G Date: 04/04/14 Scale: NTS</p>
	<p>Path: _____ Dwg No. E-1</p>



Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

April 23, 2014

Mayor Daniel T. Drew
City of Middletown
Municipal Bldg., 245 DeKoven Drive
Middletown, CT 06457

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 50 Fairchild Road, Middletown (Owner, SBA)

Dear Mayor Drew:

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 enclosed Notice fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine
Real Estate Consultant

Enclosure



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for
SBA Network Services, Inc.**

130' Monopole Tower

**SBA Site Name: Middletown 2
SBA Site ID: CT13064-A-05
AT&T Site Name: Middletown
AT&T Site ID: CT2547**

FDH Project Number 1423HD1400

Analysis Results

Tower Components	97.0%	Sufficient
Foundation	57.9%	Sufficient

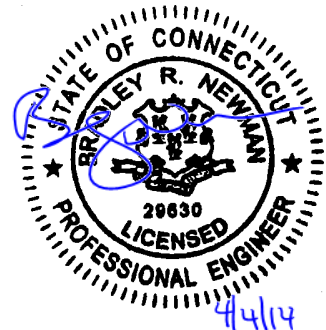
Prepared By:

David Zambrano, EI
Project Engineer

Reviewed By:

Bradley R. Newman, PE
Senior Project Engineer
CT PE License No. 29630

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
(919) 755-1012
info@fdh-inc.com



April 4, 2014

Prepared pursuant to ANSI/TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas and 2005 Connecticut State Building Code

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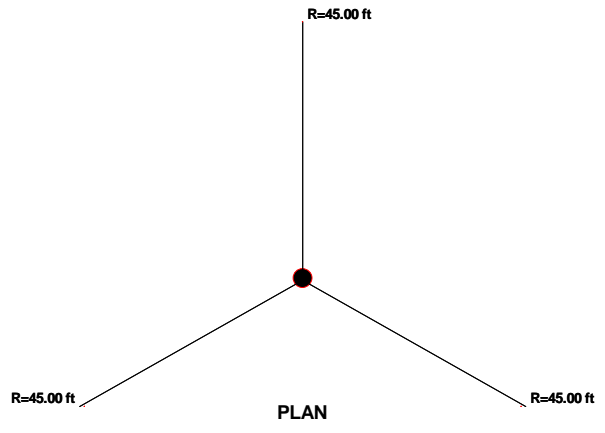
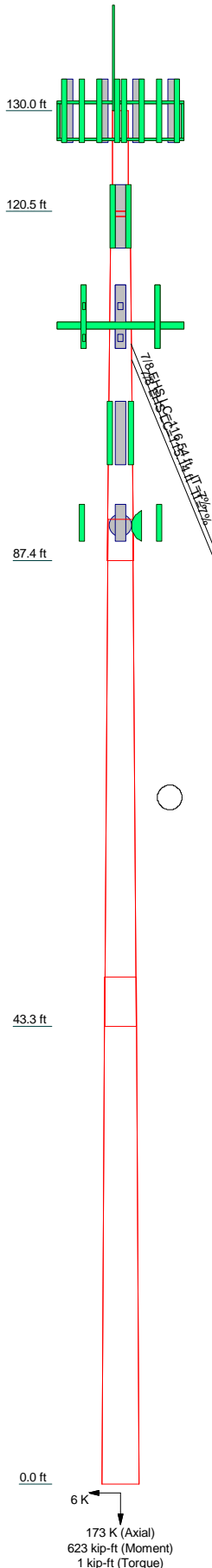
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APPENDIX

Section	1	2	3	4	5
Length (ft)	9.50	0.50	32.58	48.00	48.00
Number of Sides	1	1	18	18	18
Thickness (in)	0.2500	0.2500	0.1875	0.2500	0.3125
Socket Length (ft)	0.2500	0.2500	3.92	4.67	0.3125
Top Dia (in)	18.0000	18.0000	21.7400	28.5352	35.0541
Bot Dia (in)	18.0000	21.7400	29.8900	36.3100	42.5000
Grade	A500-50	A500-50	A500-50	A572-65	A572-65
Weight (K)	0.5	0.0	1.7	4.2	6.2



DESIGNED APPURTENANCE LOADING

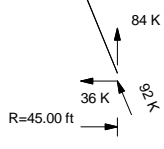
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	130	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	(2) APXV86-906515 W/ Mount Pipe	120
P65-16-XLH-RR W/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXA-70063-6CF-2 w/ Mount Pipe	110
(3) HPA-65R-BUU-H6 w/ Mount Pipe	129	BXD-63606380CF W/ Mount Pipe	110
DTMABP7819VG12A TMA	129	BXD-63606380CF W/ Mount Pipe	110
DTMABP7819VG12A TMA	129	BXD-63606380CF W/ Mount Pipe	110
DTMABP7819VG12A TMA	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-11	129	CBC721-DF	110
(2) RRUS-12	129	CBC721-DF	110
(2) RRUS-12	129	CBC721-DF	110
(2) RRUS-12	129	CBC721-DF	110
(2) RRUS-12	129	(3) T-Arms	110
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-32	129	APXV18-206517S W/Mount Pipe	99.5
RRUS-E2	129	1'4" x 6.5" x 6" Surge Protector	94
RRUS-E2	129	VHLP2-18-DW1	90
RRUS-E2	129	VHLP800-11-DW1	90
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
RRUS A2 MODULE	129	RASSPI-2213-RRH	89.5
DC6-48-60-18-8F	129	(3) T-Arms	89.5
DC6-48-60-18-8F	129	840 10054 w/ Mount Pipe	89.5
DC6-48-60-18-8F	129	840 10054 w/ Mount Pipe	89.5
(1) Platform w/ Handrails MNT [Commscope P/N MTC3607]	129	840 10054 w/ Mount Pipe	89.5
Kicker Support [Commscope P/N MTC3237]	129		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 110 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 97%



ALL REACTIONS ARE FACTORED

<p>FDH Engineering, Inc. 6521 Meridien Drive, Suite 107 Raleigh, NC 27616 Phone: (919) 755-1012 FAX: (919) 755-1031</p>	<p>Job: Middletown - CT13064-A-05</p>		
	<p>Project: 1423HD1400</p>		
	<p>Client: SBA Network Services, Inc.</p>	<p>Drawn by: David Zambrano</p>	<p>App'd:</p>
	<p>Code: TIA-222-G</p>	<p>Date: 04/04/14</p>	<p>Scale: NTS</p>
<p>Path:</p>		<p>Dwg No. E-1</p>	