March 28, 2013

David Martin and
Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
60 Rice Lane
Beacon Falls, CT 06403
N 41° 27' 20.48"
W 73° 02' 23.52"

EM-SPRINT-006-130401

Dear Mr. Martin and Members of the Siting Council:

On behalf of Sprint Spectrum, SBA Communications is submitting an exempt modification application to the Connecticut Siting council for modification of existing equipment at a tower facility located at 60 Rice Lane, Beacon Falls, CT.

The 60 Rice Lane facility consists of a 160' MONOPOLE Tower owned and operated by SBA Properties, Inc. In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum 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.

As part of Sprint's Network Vision modification project, Sprint desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site along with the required fee of $625.

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

Sprint Spectrum
Equipment Modification

60 Rice Lane, Beacon Falls, CT
Site number CT33XC524

Tower Owner: SBA Properties, Inc.

Equipment Configuration: MONOPOLE Tower

Current and/or approved:
Six (6) CDMA Antennas @ 150.4'
One (1) Mod Cell
Two (2) Battery Cabinets
Six (6) lines of 1-5/8" Coax
One (1) GPS Antenna

Planned Modifications:
Replace Six (6) CDMA Antennas with Three (3) Network Vision Antennas and Six (6) RRHs
Replace Mod Cell & Booster with One (1) MM-BTS Cabinet and install One (1) Fiber Distribution Box within existing lease area
Replace Battery Cabinet with Two (2) BBU Cabinets
Remove existing CDMA Coax Cables and install Three (3) Hybriflex Cables
Remove GPS Antenna and replace with New GPS Antenna

Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed modifications.

Power Density:

The anticipated Maximum Composite contributions from the Sprint facility are 17.905% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 39.965% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
Sprint	17.905%
T-Mobile	3.870%
AT&T	4.400%
Verizon Wireless	10.800%
Clearwire	0.770%
Beacon Hose Co.	2.220%
Total Site MPE %	39.965%

March 28, 2013

COPY

Gerard F. Smith
First Selectman
Town of Beacon Falls
10 Maple Ave.
Beacon Falls, CT 06403

RE: Telecommunications Facility @ 60 Rice Lane, Beacon Falls, CT

Dear Mr. Smith,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum 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 Sprint'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).

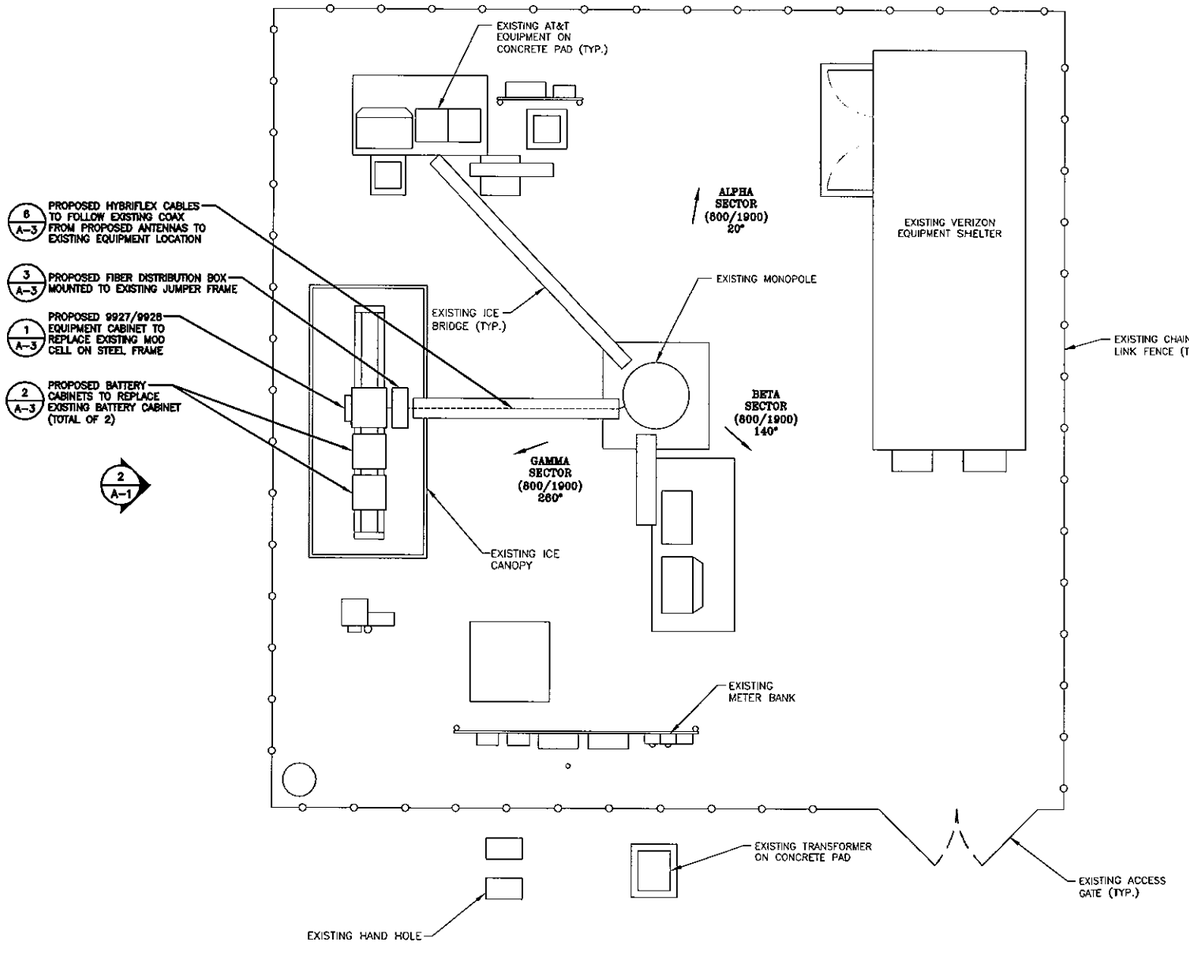
The accompanying letter to the Siting Council fully describes Sprint's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (508) 614-0389.

Thank you,

Rick Woods
SBA Communications Company
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-1691 x 319 + T
508-251-1755 + F
508-614-0389 + C
rwoods@sbasite.com

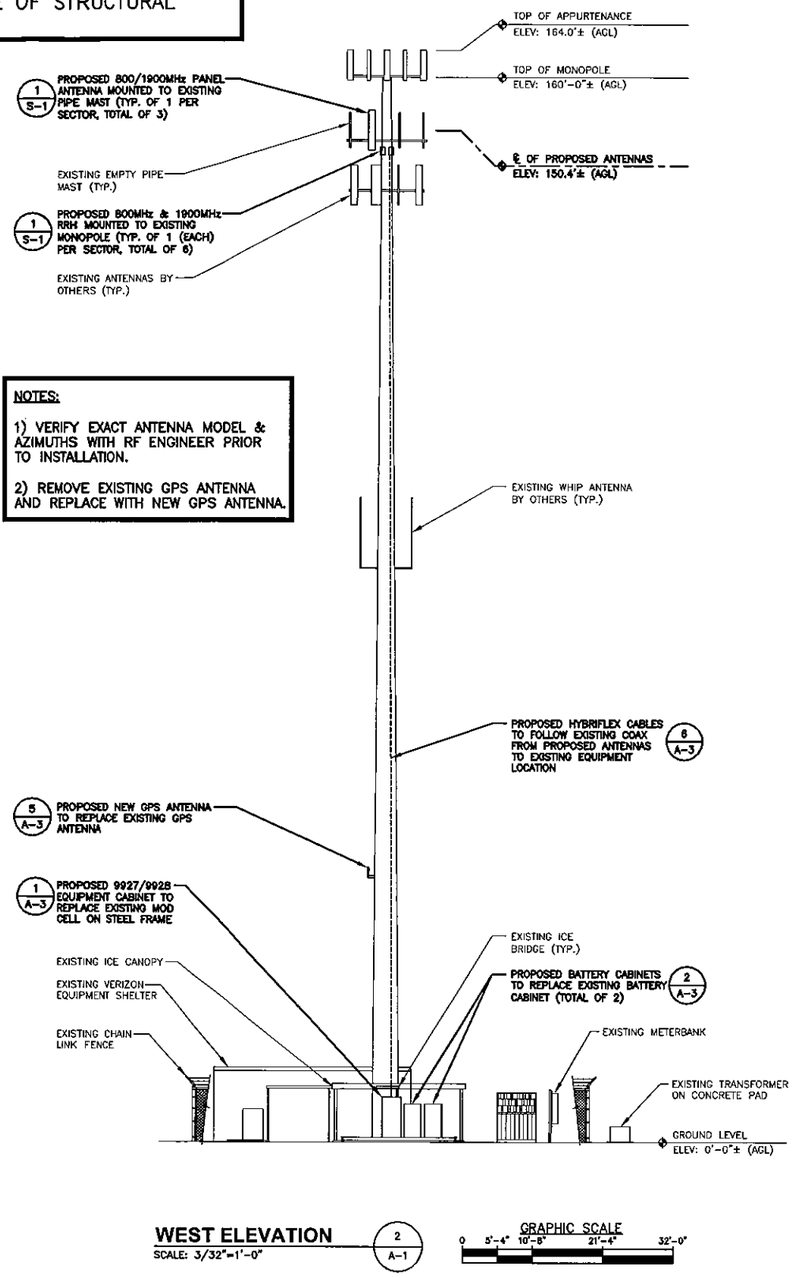
NOTE:

ADDITIONAL TOWER MAPPING AND STRUCTURAL ANALYSIS ARE REQUIRED, BY OTHERS, PRIOR TO CONSTRUCTION. DRAWINGS ARE SUBJECT TO CHANGE PENDING OUTCOME OF STRUCTURAL ANALYSIS.



COMPOUND PLAN 1 A-1
SCALE: 3/16"=1'-0"

GRAPHIC SCALE
0 2'-8" 5'-4" 10'-8" 16'-0"



NOTES:

1) VERIFY EXACT ANTENNA MODEL & AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

2) REMOVE EXISTING GPS ANTENNA AND REPLACE WITH NEW GPS ANTENNA.

WEST ELEVATION 2 A-1
SCALE: 3/32"=1'-0"

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

Sprint VISION
1 INTERNATIONAL BLVD. SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641

SBA
SBA COMMUNICATIONS CORP.
5900 BROKEN SOUND PARKWAY TEL: (561) 226-9523
BOCA RATON, FL 33487-2797 FAX: (561) 226-3572

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

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24173
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY:	KB
APPROVED BY:	DPH

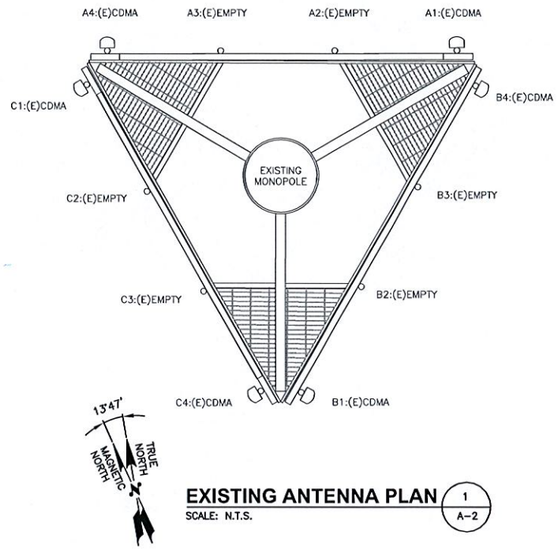
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	04/10/12	ISSUED FOR REVIEW	DR

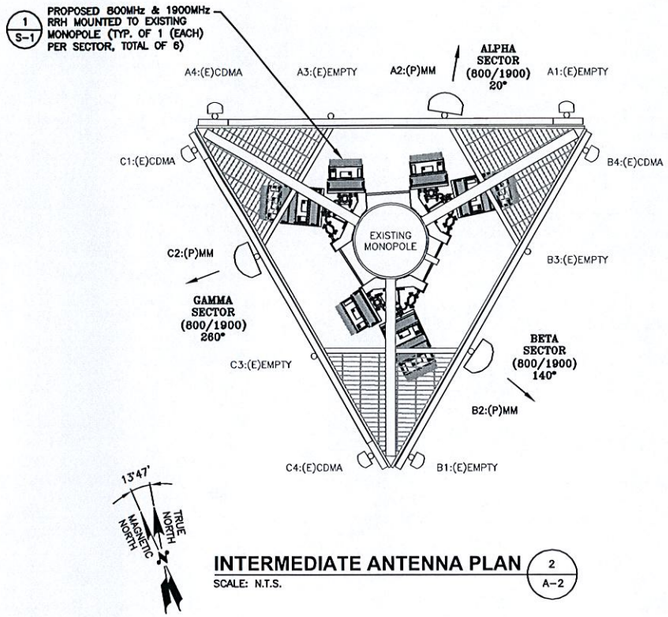
SITE NUMBER:
CT33XC524
SITE NAME:
E. BEACON FALLS/ EDWARDS PROPERTY
SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
COMPOUND PLAN AND ELEVATION

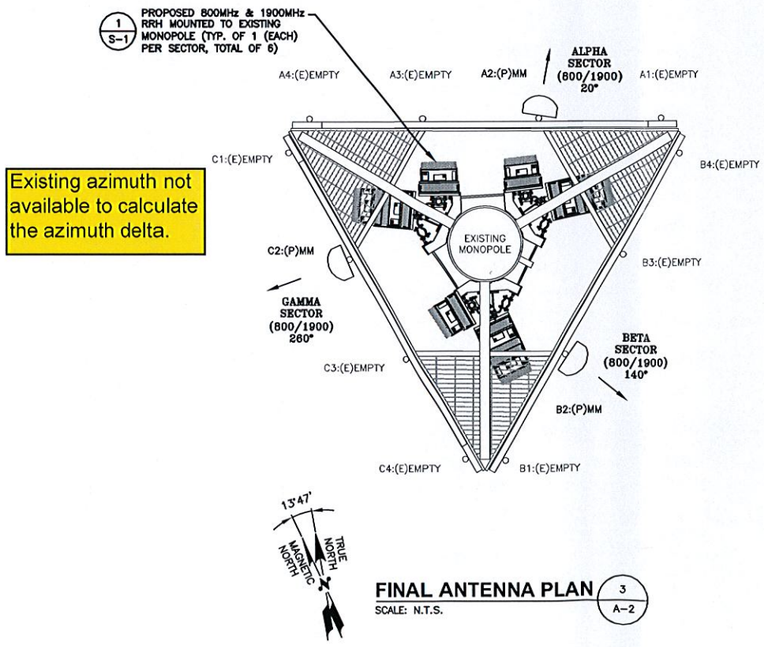
SHEET NUMBER
A-1



EXISTING ANTENNA PLAN (1 / A–2)
SCALE: N.T.S.



INTERMEDIATE ANTENNA PLAN (2 / A–2)
SCALE: N.T.S.



Existing azimuth not available to calculate the azimuth delta.

FINAL ANTENNA PLAN (3 / A–2)
SCALE: N.T.S.

ANTENNA STATUS LEGEND:

(E) – EXISTING

(P) – PROPOSED

EMPTY – ANTENNA PIPE MAST TO REMAIN

CDMA – SPRINT ANTENNA

MM – MULTIMEDIA ANTENNA

Sprint VISION
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641

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5900 BROKEN SOUND PARKWAY
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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: KB

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	04/10/12	ISSUED FOR REVIEW	DR

SITE NUMBER:
CT33XC524

SITE NAME:
E. BEACON FALLS/ EDWARDS PROPERTY

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
ANTENNA SCENARIO & EQUIPMENT LAYOUT

SHEET NUMBER
A–2

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

Structural Analysis for SBA Network Services, Inc.

160' Monopole Tower

SBA Site Name: Beacon Falls
SBA Site ID: CT02049-S
Sprint Site ID: CT33XC524
Sprint Site Name: E. Beacon Falls/Edwards Property

FDH Project Number 12-04772E S3

Analysis Results

Tower Components	92.7 %	Sufficient
Foundation	74.5 %	Sufficient

Prepared By:

Joe W. Fulk, EI
Project Engineer

Reviewed By:

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

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

March 26, 2013

Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures & 2005 Connecticut Building Code

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Beacon Falls, 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* and the *2005 Connecticut Building Code (CBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, soil parameters, foundation dimensions, and member sizes was obtained from:

- ❑ Fred A. Nudd Corp. (Project No. 7342) original design drawings dated January 14, 2000
- ❑ SEA Consultants, Inc. (Ref. No. 99339.02-A) Geotechnical Investigation Report dated August 2, 1999
- ❑ O2 Wireless Solutions (Job No. 2230-022) Monopole Tower Rework Construction Drawings dated May 23, 2002
- ❑ FDH, Inc. (Job No. 09-04127T T1) Steel Data Monopole Tower Report dated May 5, 2009
- ❑ FDH Engineering, Inc. (Project No. 09-04232E S2) Extension & Modification As-Built Drawings for a 150' Monopole dated November 3, 2009
- ❑ FDH Engineering, Inc. (Project No. 09-04232E S2) Post-Construction Inspection Report dated December 28, 2009
- ❑ FDH, Inc. (Job No. 09-04127T T2) TIA Inspection Report dated December 29, 2009
- ❑ FDH Engineering, Inc. (Project No. 12-04772E S3) Modification Drawings for a 160' Monopole dated August 21, 2012
- ❑ SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and the *2005 CBC* is 85 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from Sprint in place at 152 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and the *2005 CBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was constructed per the original design drawings (see Fred A. Nudd Project No. 7342) and utilizing the soil parameters provided (see SEA Ref. No. 99339.02-A), the foundation should have 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 and the *2005 CBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. Proposed coax must be installed inside the monopole shaft.
2. RRU/RRH Stipulation: The proposed equipment may be installed in any arrangement determined by the client.
3. Modification per FDH Engineering, Inc. (Project No. 12-04772E S3) Modification Drawings for a 160' Monopole dated August 21, 2012 must be installed 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	Coax and Lines[1]	Carrier	Mount Elevation (ft)	Mount Type
162.2	(6) Decibel DB846F65ZAXY (6) Antel LPA-185063/8CF (3) Antel BXA-70063/4CF	(18) 1-5/8"	Verizon	160	(1) 14' Low Profile Platform
155	(3) Horizon Duo ODUs (3) Andrew VHLP2.5 Dishes	(3) 1/2"	Clearwire	148.3	(1) 14' Low Profile Platform
152	(3) Kathrein 840 10054 (3) Samsung 26"x14"x9" RRUs	(12) 1-5/8" (6) 5/16" (3) 1/4"	Sprint		
151.9	(4) Decibel DB980H90E-M (5) Decibel 950F85T2E-M				
143.8	(6) Powerwave LGP13907 TMAs	(18) 1-5/8"	T-Mobile	142.2	(1) 15' Low Profile Platform
142.9[2]	(6) EMS FR90-16-04DP (3) RFS APX16DWV-16DWVS-E-A20 (3) Ericsson KRY 112 144/1 TMAs				
135	(6) Ericsson RRUS-11 RRUs (1) Raycap DC6-48-60-18-8F Surge Arrestor	(6) 1-5/8" (6) 1-1/4" (2) WR-VG122ST-BRDA DC Cables	AT&T	135	(1) Collar Mount (Valmont P/N 801068/527286)
132.5[3]	(3) Kathrein 800-10121 (2) KMW AM-X-CD-16-6500T (1) Andrew SBNH-1D6565C (6) Powerwave LGP21901 Diplexers (6) Powerwave LGP21401 TMAs			132.5	(3) T-Arms (Andrew P/N MC-K12M-B)
94.5	(1) Celwave PD1142-1 Omni	(1) 1/2"	Fire Dept.	86.2	(1) 6' Standoff
94.7	(1) 24" x 6" Trombone	(1) 5/8"			(1) 6' Standoff
78.8	(1) 24" x 6" Trombone (Inverted)	(1) 5/8"			
40	(1) GPS	(1) 1/2"	Sprint	39.5	(1) 4' Standoff

1. Coax located inside monopole shaft unless otherwise noted.
2. T-Mobile currently has (6) 1-5/8" coax located on outside of monopole shaft in a single row.
3. The DC cables are installed inside a 3" flex conduit inside of the poles shaft

Proposed Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
152	(3) RFS APXVSPP18-C-A20 (3) ALU 1900 MHz RRUs (3) ALU 800 MHz RRUs (3) ALU 800 MHz Filters (4) RFS ACU-A20-N RETs	(3) 1-1/4"	Sprint	148.3	(1) 14' Low Profile Platform

RESULTS

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

Table 2 - Material Strength

Member Type	Yield Strength
Tower Extension Section	50 ksi
Tower Shaft Sections	45 ksi & 65 ksi
Flange Plates	50 ksi
Flange Bolts	F_u = 120 ksi
Base Plate	50 ksi
Anchor Bolts	F_u = 125 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. **Table 4** displays the maximum foundation reactions. **Table 5** displays the maximum antenna rotations at service wind speeds.

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	160 - 150	Pole	TP16x16x0.25	38.8	Pass
---	150	Flange Bolts	(20) 0.5"Ø on 21" BC	60.6	Pass
---	150	Interior Flange Plate	PL 0.75" thk. x 24"Ø	51.9	Pass
---	150	Exterior Flange Plate	PL 1.25" thk. x 26"Ø	28.8	Pass
L3	150 - 145	Pole	TP24x24x0.25	23.7	Pass
---	145	Flange Bolts	(18) 0.5"Ø. on 27" BC	96.9	Pass
---	145	Flange Plate	PL 0.5" thk. x 30"Ø	67.8	Pass
L4	145 - 115	Pole	TP29.4x24x0.25	80.6	Pass
L5	115 - 95	Pole	TP33x29.4x0.3125	81.6	Pass
L6	95 - 80	Modified Pole	TP35.7x31.475x0.3125 w/ Flat Plate	81.4	Pass
L7	80 - 50	Modified Pole	TP41.1x35.7x0.375 w/ Flat Plate	88.6	Pass
L8	50 - 46	Modified Pole	TP47.22x38.91x0.375 w/ Flat Plate	79.0	Pass
	46 - 16	Modified Pole	TP47.22x38.91x0.375 w/ Flat Plate	88.8	Pass
L9	16 - 0	Modified Pole	TP50.1x45.2829x0.375 w/ Flat Plate	92.7	Pass
		Anchor Bolts	(18) 2"Ø on a 58"Ø BC w/ (3) 1.75"Ø on a 72"Ø BC	81.2	Pass
		Base Plate	PL 1.5" thk. x 63"Ø	68.8	Pass

*Capacities include a 1/3 allowable stress increase for wind.

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis *(TIA/EIA-222-F)**	Original Design *(TIA/EIA-222-F)*
Axial	45 k	---
Shear	37 k	25 k
Moment	3,893 k-ft	2,374 k-ft

*Foundation determined adequate per independent analysis.

Table 5 - Maximum Antenna Rotations at Service Wind Speeds

Centerline Elevation (ft)	Antenna	Tilt (deg)*	Twist (deg)*
155	(3) Andrew VHLP2.5 Dishes	2.7447	0.0062

*Tilt and Twist values to be reviewed by the carrier.

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

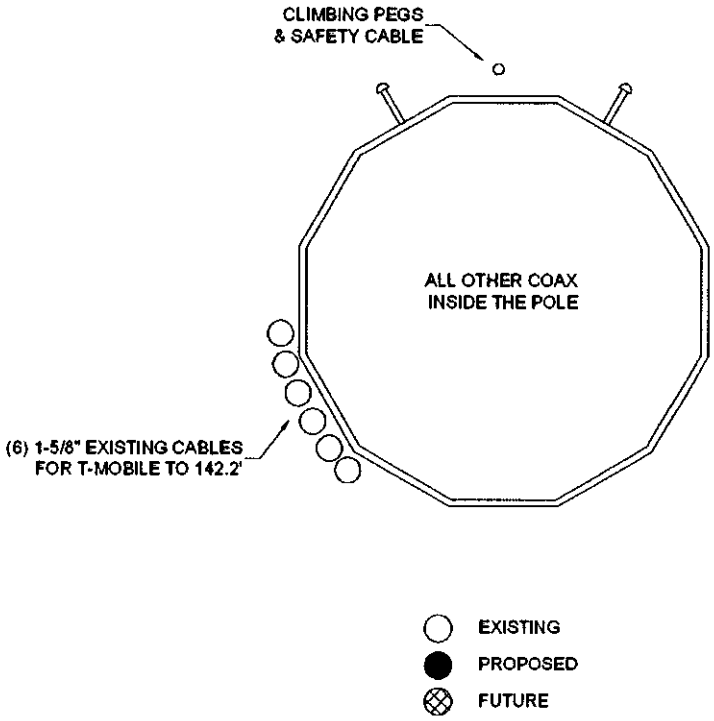
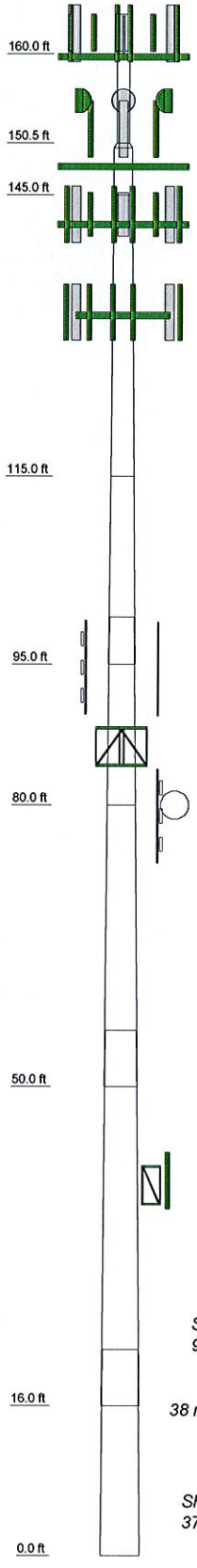
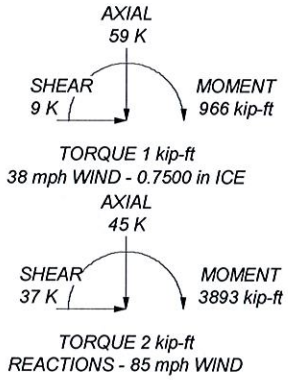


Figure 1 – Assumed Coax Layout

Section	1	2	3	4	5	6	7	8	9
Length (ft)	9.50	5.00	5.00	30.00	20.00	20.00	30.00	40.00	22.00
Number of Sides	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.2500	0.2500	0.3125	0.3125	0.3750	0.3750	0.3750
Socket Length (ft)					5.00		6.00	6.00	
Top Dia (in)		16.0000	16.0000	24.3760	24.3760	30.1382	36.0831	39.7592	45.4906
Bot Dia (in)		15.0000	15.0000	24.3760	30.1382	33.9803	36.0831	41.6158	47.3844
Grade		A500-50			A572-65				
Weight (K)	0.4	0.0	0.3	2.2	2.2	2.3	4.7	7.1	4.3





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(1) Lightning Rod	160	KRY 112 144/1	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	KRY 112 144/1	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	KRY 112 144/1	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	(2) LGP13907 TMA	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	(2) LGP13907 TMA	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	(2) LGP13907 TMA	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	(1) 15' Low Profile Platform MNT	142.2
BXA-70063/4CF w/ Mount Pipe	160	(2) FR90-16-04DP w/Mount Pipe	142.2
BXA-70063/4CF w/ Mount Pipe	160	(2) FR90-16-04DP w/Mount Pipe	142.2
BXA-70063/4CF w/ Mount Pipe	160	(2) FR90-16-04DP w/Mount Pipe	142.2
(1) 14' Low Profile Platform MNT	160	(2) RRUS-11	135
Horizon Duo ODU	148.3	(2) RRUS-11	135
Horizon Duo ODU	148.3	(2) RRUS-11	135
Horizon Duo ODU	148.3	DC6-48-60-18-8F Surge Arrestor	135
(1) 14' Low Profile Platform MNT	148.3	(1) Collar Mount MNT	135
APXVSPP18-C-A20 w/Mount Pipe	148.3	SBNH-1D6565C w/ Mount Pipe	132.5
APXVSPP18-C-A20 w/Mount Pipe	148.3	AM-X-CD-16-65-00T-RET w/ Mount Pipe	132.5
APXVSPP18-C-A20 w/Mount Pipe	148.3		
1900 MHz RRU	148.3	(2) LGP21401 TMA	132.5
1900 MHz RRU	148.3	(2) LGP21401 TMA	132.5
1900 MHz RRU	148.3	(2) LGP21401 TMA	132.5
800 MHz RRU	148.3	(2) LGP21901 Diplexer	132.5
800 MHz RRU	148.3	(2) LGP21901 Diplexer	132.5
800 MHz RRU	148.3	(2) LGP21901 Diplexer	132.5
800 MHz Filter	148.3	(3) T-Arms (Andrew MC-K12M-B)	132.5
800 MHz Filter	148.3	AM-X-CD-16-65-00T-RET w/ Mount Pipe	132.5
800 MHz Filter	148.3		
ACU-A20-N RET	148.3	800 10121 w/ Mount Pipe	132.5
ACU-A20-N RET	148.3	800 10121 w/ Mount Pipe	132.5
(2) ACU-A20-N RET	148.3	800 10121 w/ Mount Pipe	132.5
Pipe Mount	148.3	24" x 6" Trombone	86.2
Pipe Mount	148.3	10' Pipe Mount	86.2
Pipe Mount	148.3	(1) 6' Standoff MNT	86.2
VHLP2.5	148.3	(1) 6' Standoff MNT	86.2
VHLP2.5	148.3	PD1142-1	86.2
VHLP2.5	148.3	24" x 6" Trombone	86.2
APX16DWV-16DWVS-E-A20 W/Mount Pipe	142.2	10' Pipe Mount	86.2
APX16DWV-16DWVS-E-A20 W/Mount Pipe	142.2	(1) 4' Standoff MNT	39.5
APX16DWV-16DWVS-E-A20 W/Mount Pipe	142.2	GPS	39.5

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 New Haven 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 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

FDH Engineering, Inc.
6521 Meridian Drive
Raleigh, NC 27616
Phone: 919-755-1012
FAX: 919-755-1031
Tower Analysis

Job: Beacon Falls, CT02049-S			
Project: 12-04772E S3			
Client: SBA Network Services, Inc.	Drawn by: Joe Fulk	App'd:	
Code: TIA/EIA-222-F	Date: 03/26/13	Scale: NTS	
Path:		Dwg No. E-1	

THE MODIFICATIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC., PROJECT NO. 12-04772E S2 DATED JULY 16, 2012.

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 160' MONOPOLE

SITE NAME:

BEACON FALLS

SITE NUMBER:

CT02049-S

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

COORDINATES:
LATITUDE: 41.4557°
LONGITUDE: -73.0399°

SHEET INDEX

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
N-1	POST CONSTRUCTION INSPECTION NOTES
N-2	GENERAL NOTES
S-1	MODIFICATION SCHEDULE
S-2	FLAT PLATE REINFORCEMENT DETAILS
S-3	FLAT PLATE DETAILS
S-4	ANCHOR ROD INSTALLATION DETAILS I
S-5	ANCHOR ROD INSTALLATION DETAILS II

PREPARED BY:
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PREPARED FOR:
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BOCA RATON, FL 33487
(800) 487-SITE

FOR BID ONLY

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

DRAWN BY:	OP
CHECKED BY:	SMN
ENG APPV'D:	CMM
PROJECT NO:	12-04772E S3

SUBMITTALS

DATE	DESCRIPTION	REV
08/21/12	PRELIMINARY/REVIEW	A

SITE NAME:
BEACON FALLS

SITE NUMBER:
CT02049-S

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

PCI CHECKLIST

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

POST CONSTRUCTION INSPECTION NOTES:

GENERAL

1. 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).
2. 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.
3. ALL PCI'S SHALL BE CONDUCTED BY A PCI INSPECTOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR FDH ENGINEERING, INC.
4. 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).
5. REFER TO CCR-01 : CONTRACTOR CLOSEOUT REQUIREMENTS FOR FURTHER DETAILS AND REQUIREMENTS.

PCI INSPECTOR

1. 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
   - WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
2. 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 PCI'S

1. 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

1. 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
   - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
     - RAW MATERIALS
     - PHOTOS OF ALL CRITICAL DETAILS
     - FOUNDATION MODIFICATIONS
     - WELD PREPARATION
     - BOLT INSTALLATION AND TORQUE
     - FINAL INSTALLED CONDITION
     - SURFACE COATING REPAIR
   - POST CONSTRUCTION PHOTOGRAPHS
     - FINAL INFIELD CONDITION
2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

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SITE NUMBER:
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SITE ADDRESS:
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BEACON FALLS, CT 06403

SHEET TITLE
POST CONSTRUCTION INSPECTION NOTES

SHEET NUMBER
N-1

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. 6521 MERIDIEN DRIVE, RALEIGH NC, 27616, 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.

STEEL:

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATIONS.

   *ALL PLATE STEEL SHALL BE ASTM A572-65 (Fy=65KSI) UNLESS OTHERWISE SPECIFIED.

   *ALL PIPE STEEL SHALL BE ASTM A500 GR. B (Fy=42KSI) UNLESS OTHERWISE SPECIFIED.

   *ALL THREADED ROD SHALL BE WILLIAMS ALL-THREAD BAR ASTM A722 (Fu=150 KSI) UNLESS OTHERWISE SPECIFIED.
2. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-80XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS OTHERWISE NOTED).
3. ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 13 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", SECTION 8.1, UNLESS OTHERWISE SPECIFIED. WHEN "X" TYPE BOLTS ARE USED, CONTRACTOR MAY BE REQUIRED TO STACK ADDITIONAL WASHERS TO OBTAIN PROPER SNUG TIGHT INSTALLATION. ALL NUTS SHALL BE HEAVY HEX UNLESS OTHERWISE NOTED.
4. ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH MULTIPLE COATS OF ZRC COLD GALVANIZING COMPOUND ACHEIVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
5. ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. CONTRACTOR IS REQUIRED TO PROVIDE FDH ENGINEERING, INC. WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.
6. STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.

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.

FABRICATION NOTES:

1. ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
2. NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION.

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.

EPOXY/HILTI NOTES:

1. EPOXY AGENTS SHOULD BE ALLOWED TO CURE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
2. 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 OWNER.
3. 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 PROPER DRILLING, HOLE CLEANING, AND INSTALLATION METHODS FOR THE ADHESIVE ANCHORING SYSTEM AND CONSTRUCTION CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCTED PRIOR TO CREWS STEPPING ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT MANUFACTURER REPRESENTATIVE TO SET UP TRAINING. FDH IS NOT RESPONSIBLE FOR ANY COST OCCURRED FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING.

PULLOUT TESTING OF POST INSTALLED ANCHOR RODS:

1. EPOXY AGENTS SHOULD BE ALLOWED TO CURE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
2. CONTRACTOR SHALL ENSURE THAT CONSTRUCTION DOES NOT GO BEYOND POINT WHERE THE ANCHOR RODS CAN BE EFFECTIVELY TESTED. THE ANCHOR ROD SLEEVES AND TRANSFER PLATES SHOULD BE INSTALLED AFTER PULL-TESTING IS PERFORMED. CONTRUCTION MAY PROCEED AFTER TESTING IS COMPLETED.
3. 50% OF POST INSTALLED ANCHOR RODS SHALL BE TESTED OR A TOTAL OF 4, WHICHEVER IS GREATER.
4. THE ANCHOR ROD SHALL BE TESTED TO A TARGET TENSION OF 80% OF THE MATERIAL MINIMUM YIELD (Fy) STRENGTH ON THE NET AREA THROUGH THREADS. THE TARGET TENSION FOR THIS PULL TEST IS 265K.
5. MAINTAIN COMPLETE LOAD-DISPLACEMENT RECORDS THROUGHOUT THE TEST. LOAD THE ANCHOR IN INCREMENTS OF UP TO 15% OF THE TARGET TENSION.
6. STATIC LOAD TEST SHALL BE PERFORMED PER ASTM E488-96 (REAPPROVED 2003).
7. IF A DISPLACEMENT GREATER THAN 0.010" REMAINS AFTER THE INITIAL TEST CYCLE, ADDITIONAL TEST SHALL BE PERFORMED UP TO A MAXIMUM OF 4 TEST CYCLES TO DETERMINE IF THE MOVEMENT CONTINUES TO ACCUMULATE. INCREMENTAL RESIDUAL MOVEMENT RECORDED FROM EACH TEST CYCLE MUST BE DECREASING IN VALUE AND STABILIZE TO A VALUE NO MORE THAN 0.010", OTHERWISE THE ANCHOR SHALL BE CONSIDERED TO FAIL THE TEST. TOTAL RESIDUAL MOVEMENT SHALL NOT BE GREATER THAN 0.10" OR THE ANCHOR SHALL BE CONSIDERED TO FAIL THE TEST.
8. THIS INFORMATION SHALL BE DOCUMENTED AND INCLUDED IN THE POST MODIFICATION INSPECTION REPORT.
9. CONTACT FDH ENGINEERING, INC. IF ANY OF THE ANCHORS FAIL THE PULL TEST.

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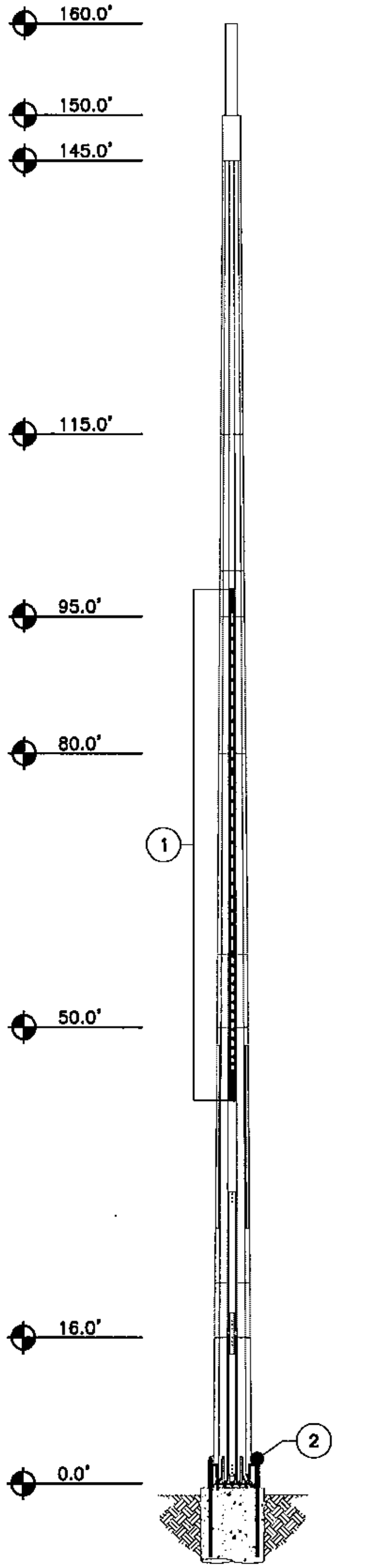
CT02049-S

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-2

LENGTH (FT)	# OF SIDES	THICKNESS (IN)	SOCKET LENGTH (FT)	TOP DIAMETER (IN)	BOT. DIAMETER (IN)	TOWER FINISH
22.00	12	0.3750	N/A	45.2829	50.1000	GALVANIZED
42.00		0.3750	6.00	38.9100	47.2200	
30.00		0.3750	8.00	35.7000	41.1000	
20.00		0.3125	N/A	31.4750	35.7000	
20.00		0.3125	5.00	29.4000	33.0000	
30.00		0.2500	N/A	24.0000	29.4000	
5.00	1	A		B	B	
10.00	1	0.2500		16.0000	16.0000	



TOWER ELEVATION
SCALE: NTS

- 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.

MEMBER SIZE KEY

MARK	SIZE
A	0.2500
B	24.0000

TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BOTTOM ELEV. (FT)	TOP ELEV. (FT)
1	INSTALLATION OF NEW FLAT PLATE REINFORCEMENT. SEE S-2 & S-3 FOR DETAILS.	42.0±	98.0±
2	INSTALLATION OF NEW ANCHOR RODS. SEE S-4 & S-5 FOR DETAILS.	-7.5±	2.0±

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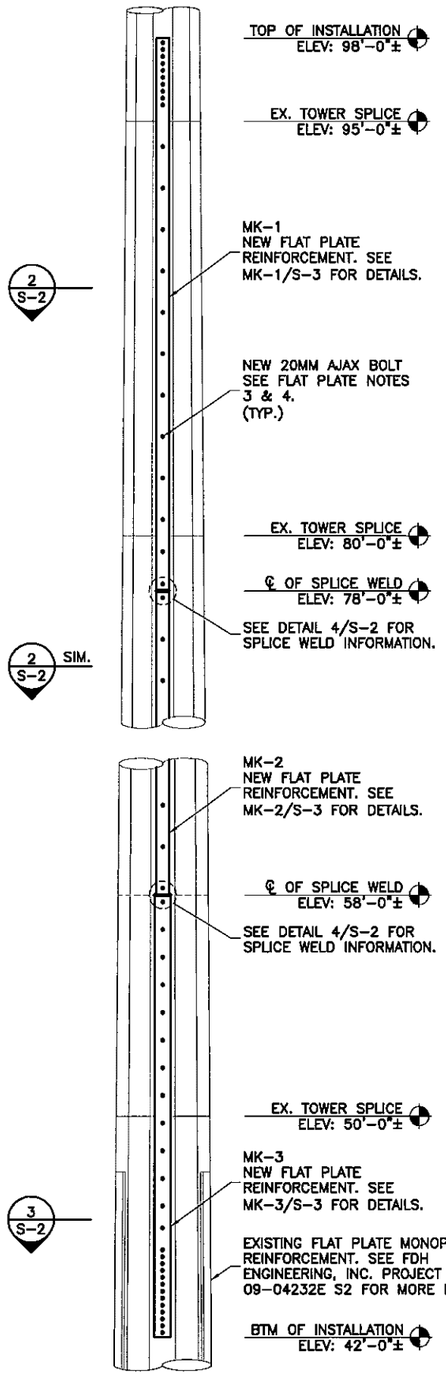
SHEET TITLE
MODIFICATION SCHEDULE

SHEET NUMBER
S-1



FLAT PLATE REINFORCEMENT LAYOUT
ELEVATION VIEW

1 / S-2 ELEVATION
SCALE: 3/16" = 1'-0"

NEW FLAT PLATE REINFORCEMENT NOTES:

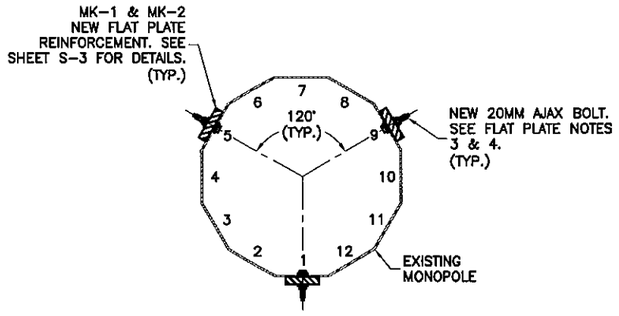
1. CONTRACTOR TO FIELD VERIFY PROPOSED LOCATION OF FLAT PLATE TO ENSURE THAT PROPER SPACING CAN BE MET.
2. CONTRACTOR TO REPLACE AND/OR RELOCATE ANY CLIMBING PEGS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE.
3. ALL AJAX CONNECTIONS TO USE HIGH TENSILE SLEEVE PROVIDED BY MANUFACTURER. AJAX BOLT ASSEMBLY TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. SEE AJAX BOLT ASSEMBLY DETAIL 5/S-2.
4. ALL SHEAR SLEEVES TO BE HOT DIPPED GALVANIZED PRIOR TO INSTALLATION.

CONSTRUCTION NOTES:

1. CONTRACTOR TO FIELD VERIFY PROPOSED FLAT PLATE LAYOUT PRIOR TO CONSTRUCTION. IF ISSUES ARE PRESENT IN THE FIT OF THE FLAT PLATE, CONTRACTOR TO CONTACT ENGINEER OF RECORD OR FDH ENGINEERING PROJECT MANAGER PRIOR TO PROCEEDING WITH PROPOSED MODIFICATION OR FABRICATION.

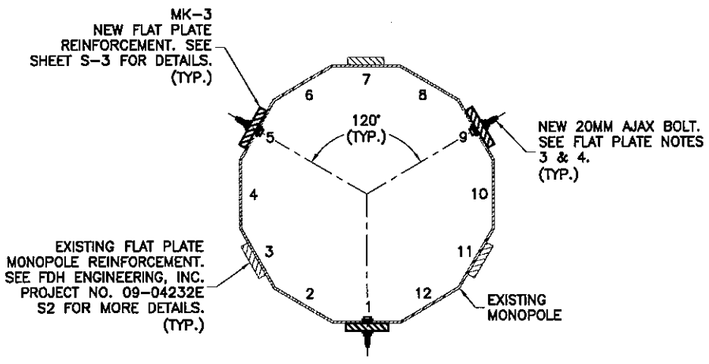
FLAT PLATE INSTALLATION SCHEDULE

PART #	QTY.	DESCRIPTION	ELEVATION
MK-1	3	FLAT PLATE REINFORCEMENT	78'-0"± TO 98'-0"±
MK-2	3	FLAT PLATE REINFORCEMENT	58'-0"± TO 78'-0"±
MK-3	3	FLAT PLATE REINFORCEMENT	42'-0"± TO 58'-0"±
--	186	20MM AJAX BOLTS	VARIES
ALL NEW FLAT PLATE STEEL TO HAVE Fy=65 KSI			



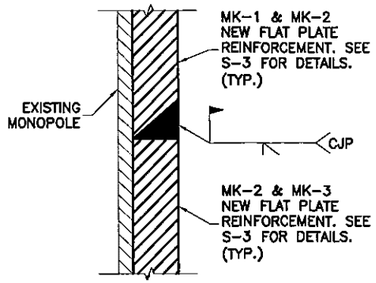
NEW FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

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



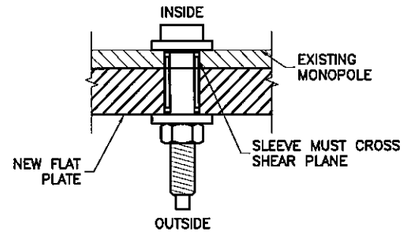
NEW FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

3 / S-2 SECTION
SCALE: 1/2" = 1'-0"



SPLICE WELDING
ELEVATION VIEW

4 / S-2 SECTION
NTS



AJAX BOLT ASSEMBLY
PLAN VIEW

5 / S-2 DETAIL
NTS

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FOR BID ONLY

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

DRAWN BY:	OP
CHECKED BY:	SMN
ENG APPV'D:	CMM
PROJECT NO:	12-04772E S3

SUBMITTALS

DATE	DESCRIPTION	REV
08/21/12	PRELIMINARY/REVIEW	A

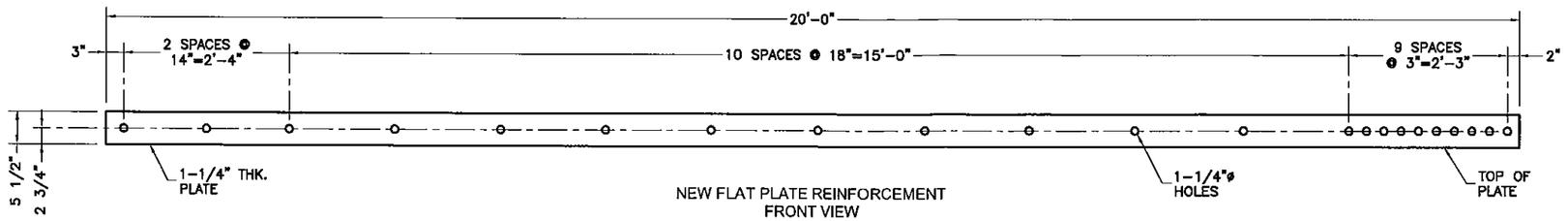
SITE NAME:
BEACON FALLS

SITE NUMBER:
CT02049-S

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
FLAT PLATE REINFORCEMENT DETAILS

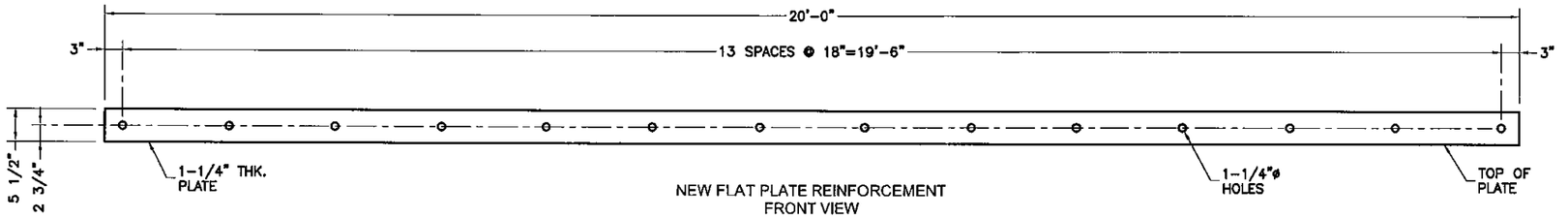
SHEET NUMBER
S-2



NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

MK-1 / S-3 **DETAIL**

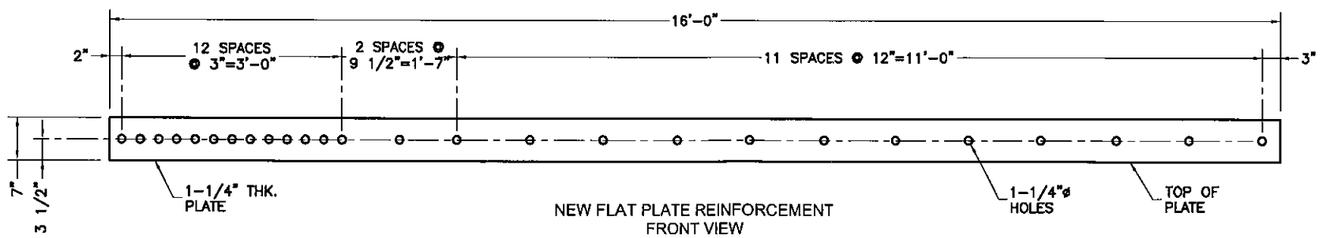
SCALE: 1/2" = 1'-0"



NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

MK-2 / S-3 **DETAIL**

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



NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

MK-3 / S-3 **DETAIL**

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

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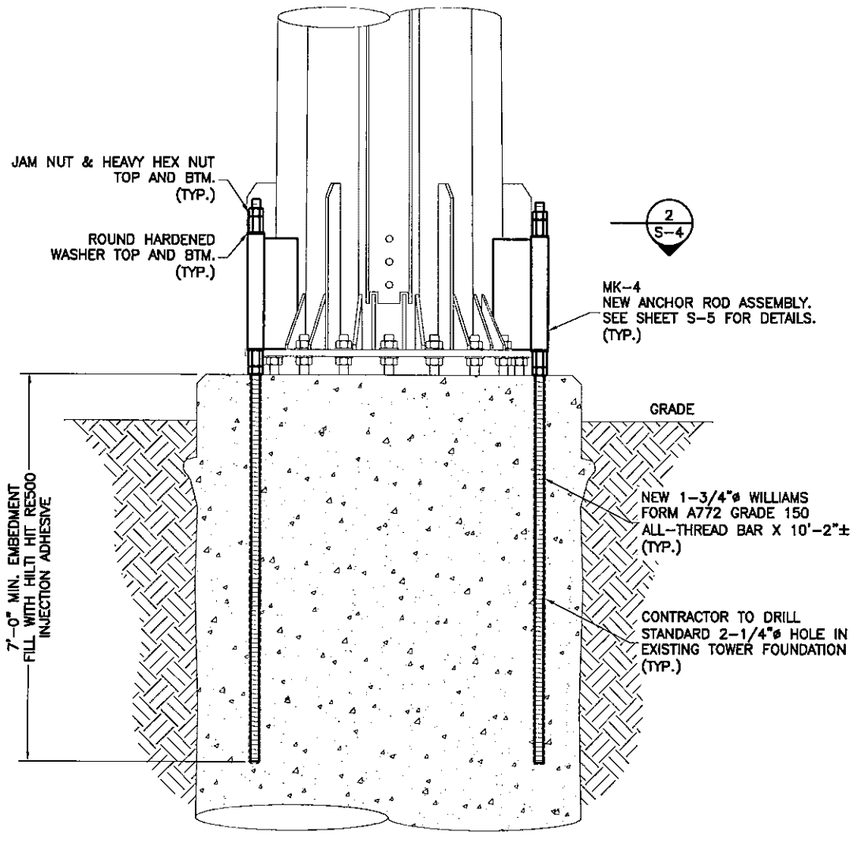
SHEET TITLE
FLAT PLATE
DETAILS

SHEET NUMBER
S-3

CONTRACTOR TO PROVIDE PHOTOS OF THE ANCHOR ROD HOLES TO FDH CONSTRUCTION MANAGER PRIOR TO INSTALLING NEW ANCHOR RODS. PHOTOS MUST SHOW THE DEPTH AND DIAMETER OF ANCHOR ROD HOLES.

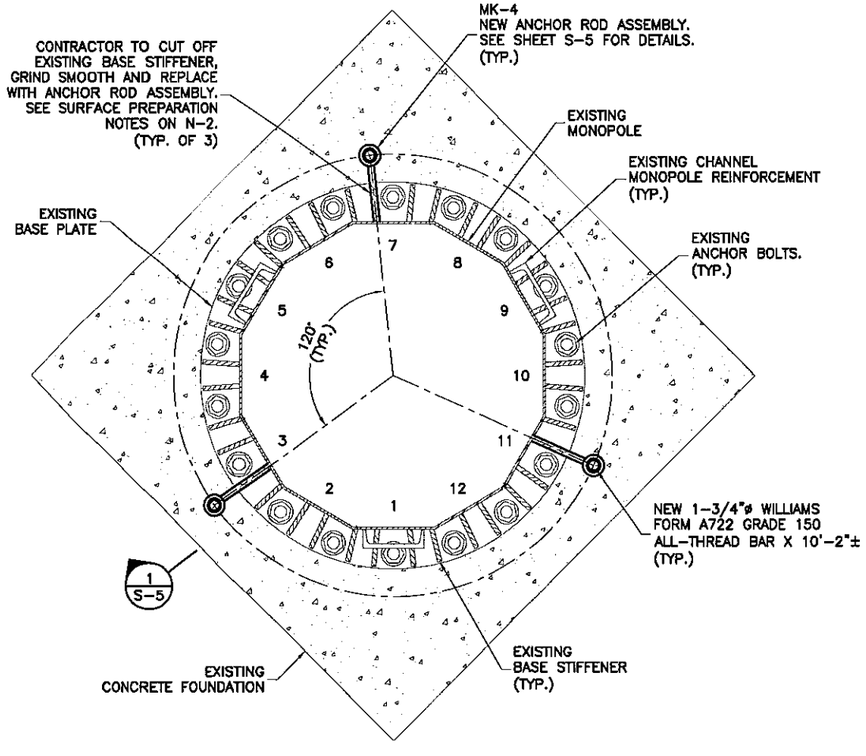
PISTON PLUGS TO BE USED IN ALL INJECTION ADHESIVE APPLICATIONS

ANCHOR ROD MATERIAL LIST			
PART. NO	QTY.	DESCRIPTION	ELEVATION
MK-4	3	ANCHOR ROD ASSEMBLY	0'-0"± TO 2'-0"±
–	3	NEW 1-3/4"ø WILLIAMS FORM A722 GRADE 150 ALL-THREAD BAR X 10'-2"±	-7'-6"± TO 2'-8"±
–	6	ROUND HARDENED WASHER	–
–	6	HEAVY HEX NUT	–
–	6	JAM NUT	–



ANCHOR ROD LAYOUT
FRONT VIEW

1 S-4 ELEVATION
SCALE: 3/8" = 1'-0"



ANCHOR ROD LAYOUT
PLAN VIEW

2 S-4 SECTION
SCALE: 1/2" = 1'-0"

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SUBMITTALS		
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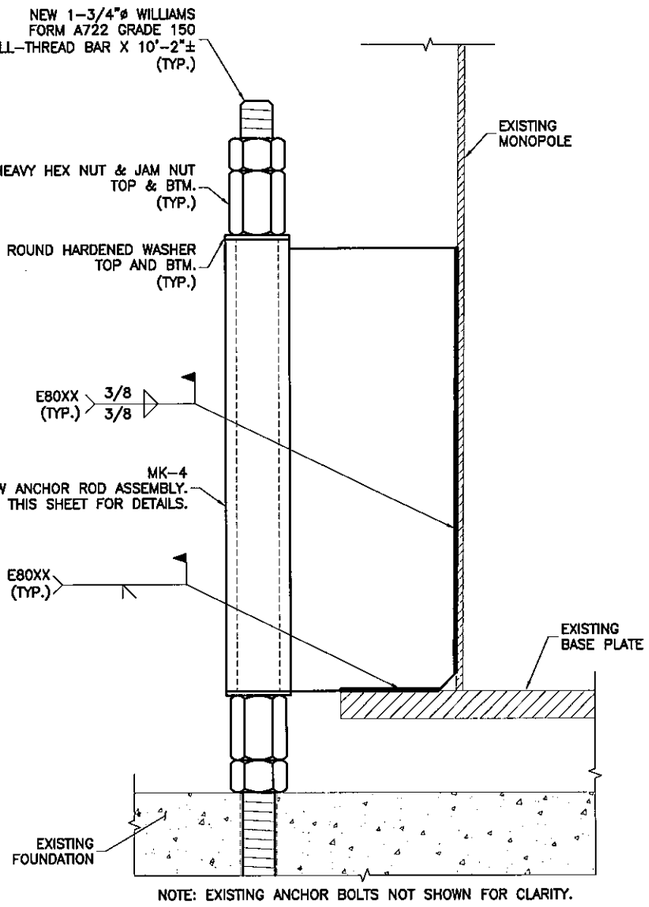
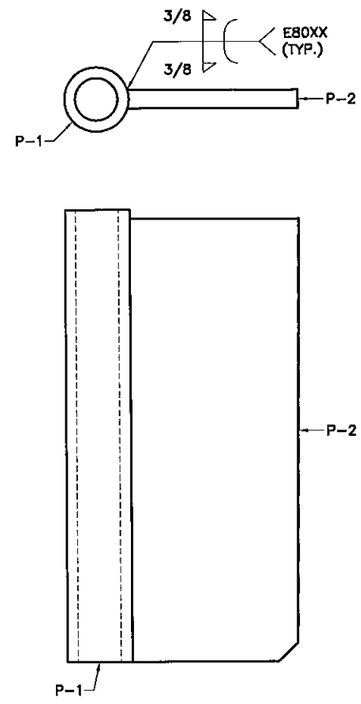
SHEET TITLE
ANCHOR ROD INSTALLATION DETAILS I

SHEET NUMBER
S-4



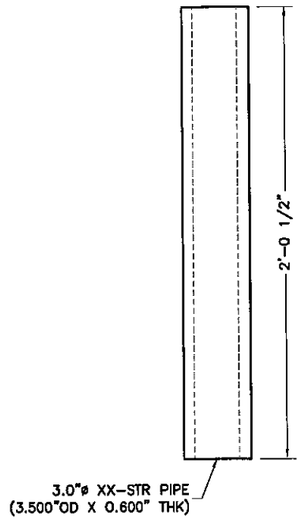
ANCHOR ROD ASSEMBLY WELD DETAIL
ELEVATION VIEW

1 / S-5 ELEVATION
SCALE: 1-1/2" = 1'-0"



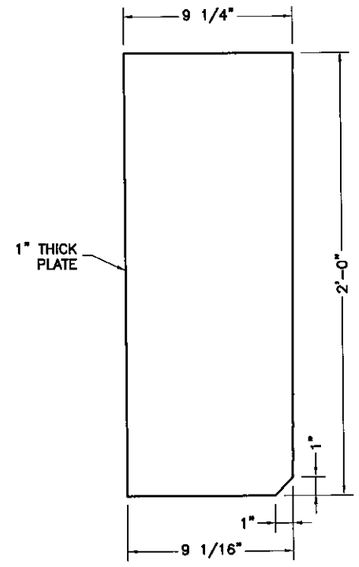
ANCHOR ROD ASSEMBLY
TOP & SIDE VIEW

MK-4 / S-5 SECTION
SCALE: 1-1/2" = 1'-0"



ANCHOR ROD SLEEVE
SIDE VIEW

P-1 / S-5 DETAIL
SCALE: 1-1/2" = 1'-0"



TRANSFER PLATE
SIDE VIEW

P-2 / S-5 DETAIL
SCALE: 1-1/2" = 1'-0"

MATERIAL LIST (MK-4)

PART. NO.	QTY.	DESCRIPTION
P-1	3	ANCHOR ROD SLEEVE
P-2	3	TRANSFER PLATE

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SHEET TITLE
ANCHOR ROD
INSTALLATION DETAILS II

SHEET NUMBER
S-5