



SBA

July 9, 2014

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

RE: Notice of Exempt Modification
1428 Monroe Turnpike
Monroe, CT 06468
Sprint Site #: NV2.5_CT23XC314
N 41° 22' 35.27"
W 73° 11' 11.56"

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 1428 Monroe Turnpike, Monroe, CT.

The 1428 Monroe Turnpike facility consists of a 159' MONOPOLE Tower owned and operated by SBA Infrastructure, LLC. 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



SBA

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 overall height of the 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 the new equipment cabinets.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. The changes in radio frequency power density 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, SBA Communications on behalf of Sprint Spectrum, respectfully submits that he 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 (508) 251-0720 x 3804 with any questions you may have concerning this matter.

Thank you,



Kri Pelletier
SBA Communications Corporation
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbsite.com



**Sprint Spectrum
Equipment Modification**

1428 Monroe Turnpike, Monroe, CT 06468
Site number CT23XC314

Tower Owner: SBA Infrastructure, LLC

Equipment Configuration: MONOPOLE Tower

Current and/or approved:

- (3) RFS APXVSPP18-C-A20
- (3) Alcatel Lucent 1900 MHz RRHs
- (3) Alcatel Lucent 800 MHz RRHs
- (3) Alcatel Lucent 800 MHz Filters
- (4) RFS ACU-A20-N
- (3) 1-1/4" Fiber

Planned Modifications:

- (3) RFS APXVTM14-C-I20
- (3) RFS APXVSPP18-C-A20
- (3) Alcatel Lucent 1900 MHz RRHs
- (3) Alcatel Lucent 800 MHz RRHs
- (3) Alcatel Lucent 800 MHz Filters
- (4) RFS ACU-A20-N
- (3) TD-RRH8x20-25
- (4) 1-1/4" Fiber

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 10.653% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 61.043% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
Sprint	10.653%
AT&T	7.360%
T-Mobile	4.580%
Verizon Wireless	35.120%
Town of Monroe	3.330%
Total Site MPE %	61.043%



July 9, 2014

Mr. John M. Kimball
523 Pepper Street
Monroe, CT 06468

RE: Telecommunications Facility @ 1428 Monroe Turnpike, Monroe, CT 06468

Dear Mr. Kimball,

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) 251-0720 x 3804.

Thank you,

A handwritten signature in black ink, appearing to read "Kri Pelletier", is written over a horizontal line.

Kri Pelletier
SBA Communications Company
33 Boston Post Road West, Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbsite.com



July 9, 2014

Mr. Steve Vavrek
First Selectman
Town of Monroe
Monroe Town Hall
7 Fan Hill Road
Monroe, CT 06468

RE: Telecommunications Facility @ 1428 Monroe Turnpike, Monroe, CT 06468

Dear Mr. Vavrek,

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) 251-0720 x 3804.

Thank you,

A handwritten signature in black ink, appearing to read "Kri Pelletier", is written over a light blue horizontal line.

Kri Pelletier
SBA Communications Company
33 Boston Post Road West, Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbsite.com



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

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

159' Monopole Tower

**SBA Site Name: Monroe Turnpike
SBA Site ID: CT13055-A-02
Sprint Site ID: CT23XC314**

FDH Project Number 1467DV1400

Analysis Results

Tower Components	99.8%	Sufficient
Foundation	49.9%	Sufficient

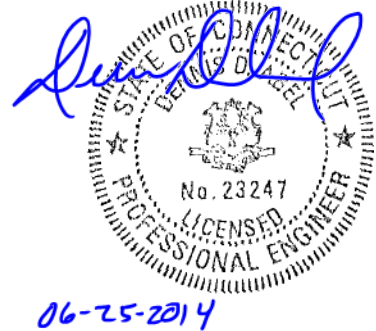
Prepared By:

Andrew Reynolds, EI
Project Engineer

Reviewed By:

Dennis D. Abel, PE
Director - Structural Engineering
CT PE License No. 23247

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



June 25, 2014

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY3

 Conclusions.....3

 Recommendations3

APPURTENANCE LISTING4

RESULTS5

GENERAL COMMENTS6

LIMITATIONS.....6

APPENDIX7

EXECUTIVE SUMMARY

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

- Sabre Communications Corporation (Job No. 04-05018) Stamped Permit Drawings dated August 18, 2003
- Clarence Welti Associates, Inc. (Tower CT54XC771) Geotechnical Study dated April 25, 2003
- FDH, Inc. (Job No. 08-07120T) TIA Inspection Report dated August 22, 2008
- FDH Engineering, Inc. (Project No. 14252L1400) Modification Drawings for a 159' Monopole dated March 28, 2014
- FDH Engineering, Inc. (Project No. 1467DV1400) Modification Drawings for a 159' Monopole dated June 25, 2014
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and the *2005 CSBC* 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 151 ft and 50 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and the *2005 CSBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was constructed per the original design drawings (see Sabre Job No. 04-05018), and given the existing soil parameters (see Clarence Welti Associates, Inc. Tower CT54XC771), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

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

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards and the *2005 CSBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax should be installed inside the pole's shaft.
2. RRU/RRH Stipulation: The proposed equipment may be installed in any configuration determined by the client.
3. The modifications outlined in FDH Engineering, Inc. (Project No. 14252L1400) Modification Drawings for a 159' Monopole dated March 28, 2014 must be correctly installed for this analysis to be valid.
4. The modifications outlined in FDH Engineering, Inc. (Project No. 1467DV1400) Modification Drawings for a 159' Monopole dated June 25, 2014 must be correctly 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	(3) Powerwave 7770 (3) Powerwave P65-16-XLH-RR (6) Powerwave LGP21401 (6) Ericsson RRUS-11 (1) Raycap DC6-48-60-18-8F	(6) 1-5/8" (1) 0.393" Fiber (1) 0.645" DC	New Cingular	159	(1) 12.5' Low Profile Platform
	(1) Decibel DB404-B	(1) 7/8"	Town		
151	(3) RFS APXVSP18-C-A20 (3) Alcatel Lucent 1900 MHz RRHs (3) Alcatel Lucent 800 MHz RRHs (3) Alcatel Lucent 800 MHz Filters (4) RFS ACU-A20-N	(3) 1-1/4" Fiber	Sprint	149	(1) 12.5' Low Profile Platform
142.5	(12) EMS FR65-17-04DP (6) Remec S20057A1	(12) 1-1/4"	T-Mobile	140	(1) 12.5' Low Profile Platform
131	(3) Kathrein 742 213_2110_P45_02.0 (3) Antel BXA-70063/6CF (3) Antel BXA-171063-12BF (6) Antel LPA-80063-6CF (3) Alcatel Lucent RRH2x40-AWS (6) RFS FD9R6004/2C-3L (1) RFS DB-T1-6Z-8AB-0Z	(12) 1-5/8" (1) 1-5/8" Fiber	Verizon	130	(1) 12.5' Low Profile Platform
110 ²	(1) Sinclair SCL329-HL	(1) 7/8"	Town	110	(1) 4' Standoff
80 ²	(1) Sinclair SCL329-HL	(1) 7/8"		80	(1) 4' Standoff
50 ³	(1) Decibel 26DB GPS	(1) 1/2"	Sprint	47	(1) 4' Standoff

1. Feedlines installed inside the pole's shaft unless otherwise noted.
2. Town has (2) 7/8" coax installed outside the pole's shaft in a single row to 110 ft and 80 ft.
3. Sprint has (1) 1/2" coax installed outside the pole's shaft to 47 ft.

Proposed Carrier Final Configuration:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
151	(3) RFS APXVTM14-C-I20 (3) RFS APXVSP18-C-A20 (3) Alcatel Lucent 1900 MHz RRHs (3) Alcatel Lucent 800 MHz RRHs (3) Alcatel Lucent 800 MHz Filters (4) RFS ACU-A20-N (3) TD-RRH8x20-25	(4) 1-1/4" Fiber	Sprint	149	(1) 12.5' 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 Shaft Sections	65 ksi
Base Plate	60 ksi
Anchor Bolts	75 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	159 - 149	Pole	TP14.93x12x0.1875	37.1	Pass
L2	149 - 119.5	Pole	TP29.64x13.969x0.3125	98.6	Pass
	119.5 - 97.5	Modified Pole	TP29.64x13.969x0.3125 w/ Flat Plate	99.6	Pass
L3	97.5 - 47.75	Modified Pole	TP43.6x27.9166x0.375 w/ Flat Plate	94.4	Pass
L4	47.75 - 15	Modified Pole	TP56.84x41.189x0.375	93.1	Pass
	15 - 0	Pole	TP56.84x41.189x0.375	99.8	Pass
---	0	Anchor Bolt Modifications	(3) 2.25" Ø on 71" BC	86.0	Pass
		Anchor Bolts	(14) 2.25" Ø on 64" BC	87.1	Pass
		Base Plate	PL 70" Ø x 2.25" Thk.	63.8	Pass

*Capacities include a 1/3 allowable stress increase for wind per TIA/EIA-222-F standards.

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis* (TIA/EIA-222-F)	Original Design (TIA/EIA-222-F)
Axial	41 k	41 k
Shear	34 k	31 k
Moment	3,897 k-ft	3,665 k-ft

*Foundation 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

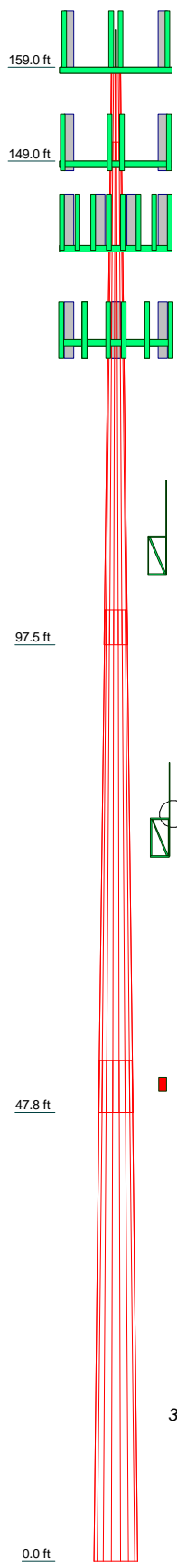
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided 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.

APPENDIX



Figure 1 – Feed Line Layout

Section	1	2	3	4
Length (ft)	10.00	53.50	53.50	53.25
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.3125	0.3750	0.3750
Socket Length (ft)	2.00	3.75	5.50	41.2377
Top Dia (in)	12.0000	13.9690	27.9166	56.8400
Bot Dia (in)	14.9300	29.8400	43.8000	
Grade		A572-65	A572-65	A572-65
Weight (K)	0.3	3.9	7.7	10.5



DESIGNED APPURTENANCE LOADING

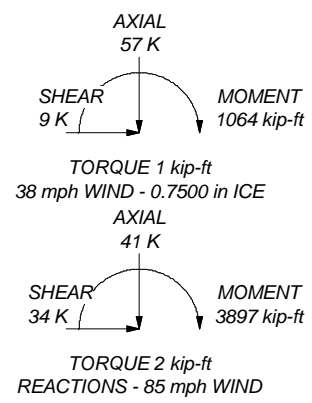
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	159	Empty Mount Pipe	149
7770.00 w/Mount Pipe	159	Empty Mount Pipe	149
7770.00 w/Mount Pipe	159	Empty Mount Pipe	149
7770.00 w/Mount Pipe	159	(1) 12.5' Low Profile Platform	149
P65-16-XLH-RR w/Mount Pipe	159	(4) FR65-17-04DP w/Mount Pipe	140
P65-16-XLH-RR w/Mount Pipe	159	(4) FR65-17-04DP w/Mount Pipe	140
P65-16-XLH-RR w/Mount Pipe	159	(4) FR65-17-04DP w/Mount Pipe	140
(2) LGP21401 TMA	159	(2) S20057A1	140
(2) LGP21401 TMA	159	(2) S20057A1	140
(2) LGP21401 TMA	159	(2) S20057A1	140
(2) RRUS-11	159	(1) 12.5' Low Profile Platform	140
(2) RRUS-11	159	742 213 w/ Mount Pipe	130
(2) RRUS-11	159	742 213 w/ Mount Pipe	130
DC6-48-60-18-8F	159	742 213 w/ Mount Pipe	130
(1) 12.5' Low Profile Platform	159	BXA-70063/6CF w/ Mount Pipe	130
DB404-B	159	BXA-70063/6CF w/ Mount Pipe	130
APXVSP18-C-A20 w/Mount Pipe	149	BXA-70063/6CF w/ Mount Pipe	130
APXVSP18-C-A20 w/Mount Pipe	149	BXA-171063-12BF w/ Mount Pipe	130
APXVSP18-C-A20 w/Mount Pipe	149	BXA-171063-12BF w/ Mount Pipe	130
APXVTM14-C-I20 w/ Mount Pipe	149	BXA-171063-12BF w/ Mount Pipe	130
APXVTM14-C-I20 w/ Mount Pipe	149	(2) LPA-80063/6CF w/ Mount Pipe	130
APXVTM14-C-I20 w/ Mount Pipe	149	(2) LPA-80063/6CF w/ Mount Pipe	130
1900 MHz RRH	149	(2) LPA-80063/6CF w/ Mount Pipe	130
1900 MHz RRH	149	(2) FD9R6004/2C-3L Diplexer	130
800 MHz RRH	149	(2) FD9R6004/2C-3L Diplexer	130
800 MHz RRH	149	RRH2X40-AWS	130
800 MHz RRH	149	RRH2X40-AWS	130
800 MHz Filter	149	RRH2X40-AWS	130
800 MHz Filter	149	DB-T1-6Z-8AB-0Z	130
800 MHz Filter	149	(1) 12.5' Low Profile Platform	130
ACU-A20-N RET	149	SCL329-HL Omni	110
ACU-A20-N RET	149	(1) 4' Standoff	110
(2) ACU-A20-N RET	149	SCL329-HL Omni	80
TD-RRH8x20-25	149	(1) 4' Standoff	80
TD-RRH8x20-25	149	Decibel 26DB GPS	47
TD-RRH8x20-25	149	(1) 4' Standoff	47

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield 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 Meridien Drive, Suite 107
 Raleigh, NC 27616
 Phone: 9197551012
 FAX: 9197551031

Job: **Monroe Turnpike, CT13055-A-02**
 Project: **1467DV1400**
 Client: **SBA Network Services, Inc.** Drawn by: **Andrew Reynolds** App'd:
 Code: **TIA/EIA-222-F** Date: **06/25/14** Scale: **NTS**
 Path: _____ Dwg No. **E-1**

(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#:	
Site Name: <i>Monroe Turnpike</i>	
App #:	

Monopole Base Reaction Forces			
TIA Revision:	F	<--Pull Down	
Unfactored DL Axial, PD:	41	kips	
Unfactored WL Axial, PW:	0	kips	
Unfactored WL Shear, V:	34	kips	
Unfactored WL Moment, M:	3897	ft-kips	

Load Factor	Shaft Factored Loads		
1.20	1.2D+1.6W, Pu:	49.2	kips
0.90	0.9D+1.6W, Pu:	36.9	kips
1.35	Vu:	45.9	kips
	Mu:	5260.95	ft-kips

Enter Load Factors Below:		
For P (DL)	1.2	<---- Enter Factor
For P,V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data		
Base PL Dist. Above Pier:	0	in
Pier Dist. Above Grade:	12	in
Pad Bearing Depth, D:	5.5	ft
Pad Thickness, T:	2	ft
Pad Width=Length, L:	25.5	ft
Pier Cross Section Shape:	Round	<--Pull Down
Enter Pier Diameter:	7	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	38.48	ft^2
Pier Height:	4.50	ft
Soil (above pad) Height:	3.50	ft

1.2D+1.6W Load Combination, Bearing Results:

(No Soil Wedges) [Reaction+Conc+Soil]	725.57	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	5513.52	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 = 7.60 ft
 Orthogonal qu= 2.76 ksf
 qu/φ*qn Ratio= **15.34% Pass**

Diagonal Direction:

ecc2 = (0.707M1)/P1 = 5.37 ft
 Diagonal qu= 3.33 ksf
 qu/φ*qn Ratio= **18.51% Pass**

<-- Press Upon Completing All Input

Soil Parameters		
Unit Weight, γ:	160.0	pcf
Ultimate Bearing Capacity, qn:	24.00	ksf
Strength Reduct. factor, φ:	0.75	
Angle of Friction, Φ:	0.0	degrees
Undrained Shear Strength, Cu:	10.00	ksf
Allowable Bearing: φ*qn:	18.00	ksf
Passive Pres. Coeff., Kp	1.00	

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(w/ Soil Wedges) [Reaction+Conc+Soil]	544.18	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	848.51	ft-kips

Orthogonal ecc3 = M2/P2 = 1.56 ft
 Ortho Non Bearing Length,NBL= **3.12 ft**
 Orthogonal qu= 1.04 ksf
 Diagonal qu= 1.00 ksf

Forces/Moments due to Wind and Lateral Soil		
Minimum of (φ*Ultimate Pad Passive Force, Vu):	45.9	kips
Pad Force Location Above D:	1.00	ft
φ(Passive Pressure Moment):	45.78	ft-kips
Factored O.T. M(WL), "1.6W":	5559.3	ft-kips
Factored OT (MW-Msoil), M1	5513.52	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	0.00	ft
Sum of Soil Wedges Wt:	0.00	kips
Soil Wedges ecc, K1:	0.00	ft
Ftg+Soil above Pad wt:	563.6	kips
Unfactored (Total ftg-soil Wt):	563.64	kips
1.2D. No Soil Wedges.	725.57	kips
0.9D. With Soil Wedges	544.18	kips

Max Reaction Moment (ft-kips) so that qu=φ*qn = 100% Capacity Rating

Actual M:	3897.00		
M Orthogonal:	7810.49	49.89%	Pass
M Diagonal:	7810.49	49.89%	Pass

Resistance due to Cohesion (Vertical)		
φ*(1/2*Cu)(Total Vert. Planes)	416.55	kips
Cohesion Force Eccentricity, K2	12.44	ft



Anchor Rod Design

Site Name:	
Job No.:	
Elevation:	
	Input Cells in Yellow

*Note: Use Anchor Rod Transfer Plate Design Tab in Conjunction

Legend
Input
Output/Notes

Code (F or G):	F	Pull Down
Anchor Bolts (Yes or No)	Yes	Pull Down
P (from RISA)	41	kips
V (from RISA)	34	kips
M (from RISA)	3897	ft-kips

Existing Rods		
y	32	in
No. Bolts	14	
BC	64	in
I	28528.64	in ⁴
Bolt Grade	A615-75	Pull Down
Thread Form	Non-Upset	-
d (in)	2.25	Pull Down
Ag	3.98	in ²
Ae	3.25	in ²
Fy	75	ksi
Fu	100	ksi

New Rods		
y new	35.5	in
No. Bolts new	3	
BC new	71	in
I new	6,130	in ⁴
Bolt Grade	A193 B7	Pull Down
Thread Form	Non-Upset	Pull Down
d new (in)	2.25	Pull Down
Ag new	3.98	in ²
Ae new	3.25	in ²
Fy new	105	ksi
Fu new	125	ksi

- From CAD

Req'd Embedment Length for New Rods		
f _c , caisson's concrete strength	4000	psi
f _y , rebar yield strength	60000	psi
d _b , diameter of vertical rebar	1.128	in
vertical rebar cage BC ø	75.875	in
vertical rebar top cover distance	6	in
τ, Ultimate Hilti Bond Resistance	1.8	ksi

****Note For New Anchor Rods:****
Williams Bars (Upset)
 A722 (F_y=127.7 ksi, F_u=150 ksi)
 A615-75 (F_y=75 ksi, F_u=100 ksi)

ltot	34658.2863	in ⁴
------	------------	-----------------

T	169.434	kips
V	2.000	kips

Tnew	188.229	kips
Vnew	2.000	kips

l _d (vertical rebar dev. Length)	32.103	in
l _{dH} (Hilti dev. length)	76.630	in
G/1.5	1.625	in

Total Embed. Length of New Bolts	76.63	in
	6.39	ft

Capacity (%)				Pullout Test Value
Tn/Ω	194.5	kips	OK	87.11
Tn/Ω, new	218.9	kips	OK	85.99
øTn	260	kips		
øTn, new	325	kips		

Bearing Strength Check of Anchor Rod Pipe Sleeve		
New Anchor Rod Diameter	2.25	in
Selected Pipe Sleeve Area	7.64	in ²
Selected Pipe Sleeve F _y	42	ksi
Rn/Ω (Rev F) or øRn (Rev G)	385.06	k
% Capacity (Analysis)	48.88%	OK
% Capacity (Design)	56.85%	OK

Equations:

$$T = (M^*y^*Ag)/ltot - P^*(Ag/Atotal)$$

$$Tn/\Omega = 0.33^*Fu^*Ag^*(4/3)$$

$$= 0.8^*Fu^*Ae \text{ (anchor bolts only)} \quad \phi Tn = 0.75^*Fu^*Ae \text{ (non anchor bolts)}$$

$$I = (No. Bolts/8)^*BC^{2^*}Ag$$

Notes:

*Ag and Ae are taken from AISC 13th Ed. Manual (pg. 7-83)

*I calc. will only work for symmetric bolt group, otherwise use CAD

Equivalent BC		
No. Existing Rebar		
Existing Rebar BC		in
Area rebar		in ²
Irebar	0	in ⁴
ltot	6,130	in ⁴
Equivalent Area	3.980	in ²
Equivalent BC	64.086	in
Total Area	11.94	in ²

(assuming new bolts are reinforcement)

Interaction Equation Checks (Rev. G: Section 4.9.9)			(works for Rev F also)
Detail Type (hover for detail)	d	Pull Down	
η	0.5		
l _{av} , for Detail Type d only	2.25	in	(top of concrete to bottom of leveling nut)
øRnt	194.5	kips	
øRnv	119.4	kips	
øRnm	94.922	kip-in	
Mu	2.925	kip-in	
(Pu+Vu/η)/øRnt < 1?	0.892	OK	
(Vu/øRnv) ² + ((Pu/øRnt)+(Mu/øRnm)) ²	0.814	OK	(only applicable for Detail Type d)

$$l_{d} = [(f_y^*\psi_t\psi_s\psi_e\lambda)/(20^*\sqrt{f_c})]^*d_b \quad \text{PER ACI 12.2.2}$$

$$l_{dH} = (\phi Tn^*FS)/(\tau^*\pi^*d_{new})$$

See Worksheet "New (Design Procedure)"

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

Project No.	
Site Name: <i>Monroe Turnpike</i>	
Site ID:	
Pole Manufacturer:	<i>Other</i>

Reactions		
Moment:	3216	ft-kips
Axial:	41	kips
Shear:	34	kips

Anchor Rod Data

Qty:	14	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	64	in

If No stiffeners, Criteria: **AISC ASD** <-Only Applicable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension: 169.4 Kips
 Allowable Tension: 195.0 Kips
 Anchor Rod Stress Ratio: 86.9% **Pass**

Rigid
Service ASD
F _t *ASIF

Plate Data

Diam:	70	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	12.89	in

Base Plate Results

Base Plate Stress: 38.3 ksi
 Allowable Plate Stress: 60.0 ksi
 Base Plate Stress Ratio: 63.8% **Pass**

Flexural Check

Rigid
Service ASD
0.75*F _y *ASIF
Y.L. Length: 29.41

Stiffener Data (Welding at both sides)

Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, fb/Fb+(fv/Fv)^2: n/a
 Plate Tension+Shear, ft/Ft+(fv/Fv)^2: n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results

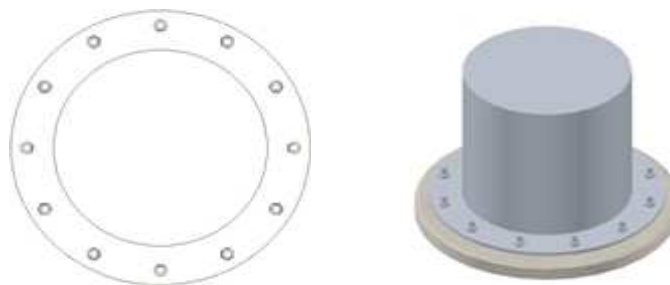
Pole Punching Shear Check: n/a

Pole Data

Diam:	56.84	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor

ASIF:	1.333
-------	-------



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes



FDH Engineering, Inc., 6521 Meridien Dr. Raleigh, NC, 27616, Ph. 919.755.1012, Fax 919.755.1031

Eccentric Weld Check

Site Name:	
Job No. :	
Elevation:	

Legend
Input
Output
Notes

Code	G	F or G
------	---	--------

Pu	325	k
----	-----	---

Eccentric Weld Properties		
Weld Size	9	No. of 1/16ths (whole number)
L _{weld}	18	in
e _x	7.08	in
a	0.393333	use in Table 8-4, pg 8-66 AISC
C	2.688667	From Table 8-4, pg. 8-66 AISC
C1	1.03	70 ksi weld = 1, 80 ksi = 1.03

Check Eccentric Weld		
Pu	325.00	k
ΦRn	336.47	k
%Capacity	96.59%	Pass

RADIO FREQUENCY FCC REGULATORY COMPLIANCE
MAXIMUM PERMISSIBLE EXPOSURE (MPE) ASSESSMENT

Sprint Existing Facility

Site ID: CT23XC314

Sisters of Holy Name / C.A.T.

1428 Monroe Turnpike
Monroe, CT 06468

May 20, 2014

EBI Project Number: 62143081

May 20, 2014

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT23XC314 - Sisters of Holy Name / C.A.T.

Site Total: 61.043% - MPE % in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 1428 Monroe Turnpike, Monroe, CT, for the purpose of determining whether the radio frequency (RF) exposure levels from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band (850 MHz Band) is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 1428 Monroe Turnpike, Monroe, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

- 1) 3 channels in the 1900 MHz Band were considered for each sector of the proposed installation.
- 2) 1 channel in the 800 MHz Band was considered for each sector of the proposed installation
- 3) 2 channels in the 2500 MHz Band were considered for each sector of the proposed installation.
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications was used in this direction.

- 6) The antennas used in this modeling are the RFS APXVSPP18-C-A20 and the RFS APXVTMM-C-120. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. The RFS APXVTMM-C-120 has a 15.9 dBd gain value at its main lobe at 2500 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario
- 7) The antenna mounting height centerline for the proposed antennas is **151 feet** above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT23XC314 - Sisters of Holy Name / C.A.T.
Site Address	1428 Monroe Turnpike, Monroe, CT 06468
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	151	145	1/2 "	0.5	3	1042.6805	1.78288%
1a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	151	145	1/2 "	0.5	3	195.44744	0.58941%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	151	145	1/2 "	0.5	3	390.89489	1.17882%
Sector total Power Density Value:																3.551%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	151	145	1/2 "	0.5	3	1042.6805	1.78288%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	151	145	1/2 "	0.5	3	195.44744	0.58941%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	151	145	1/2 "	0.5	3	390.89489	1.17882%
Sector total Power Density Value:																3.551%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	151	145	1/2 "	0.5	3	1042.6805	1.78288%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	151	145	1/2 "	0.5	3	195.44744	0.58941%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	151	145	1/2 "	0.5	3	390.89489	1.17882%
Sector total Power Density Value:																3.551%

Site Composite MPE %	
Carrier	MPE %
Sprint	10.653%
AT&T	7.360%
T-Mobile	4.580%
Verizon Wireless	35.120%
Town of Monroe	3.330%
Total Site MPE %	61.043%

Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public Maximum Permissible Exposure (MPE) to radio frequency energy.

The anticipated Maximum Composite contributions from the Sprint facility are **10.653% (3.551% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

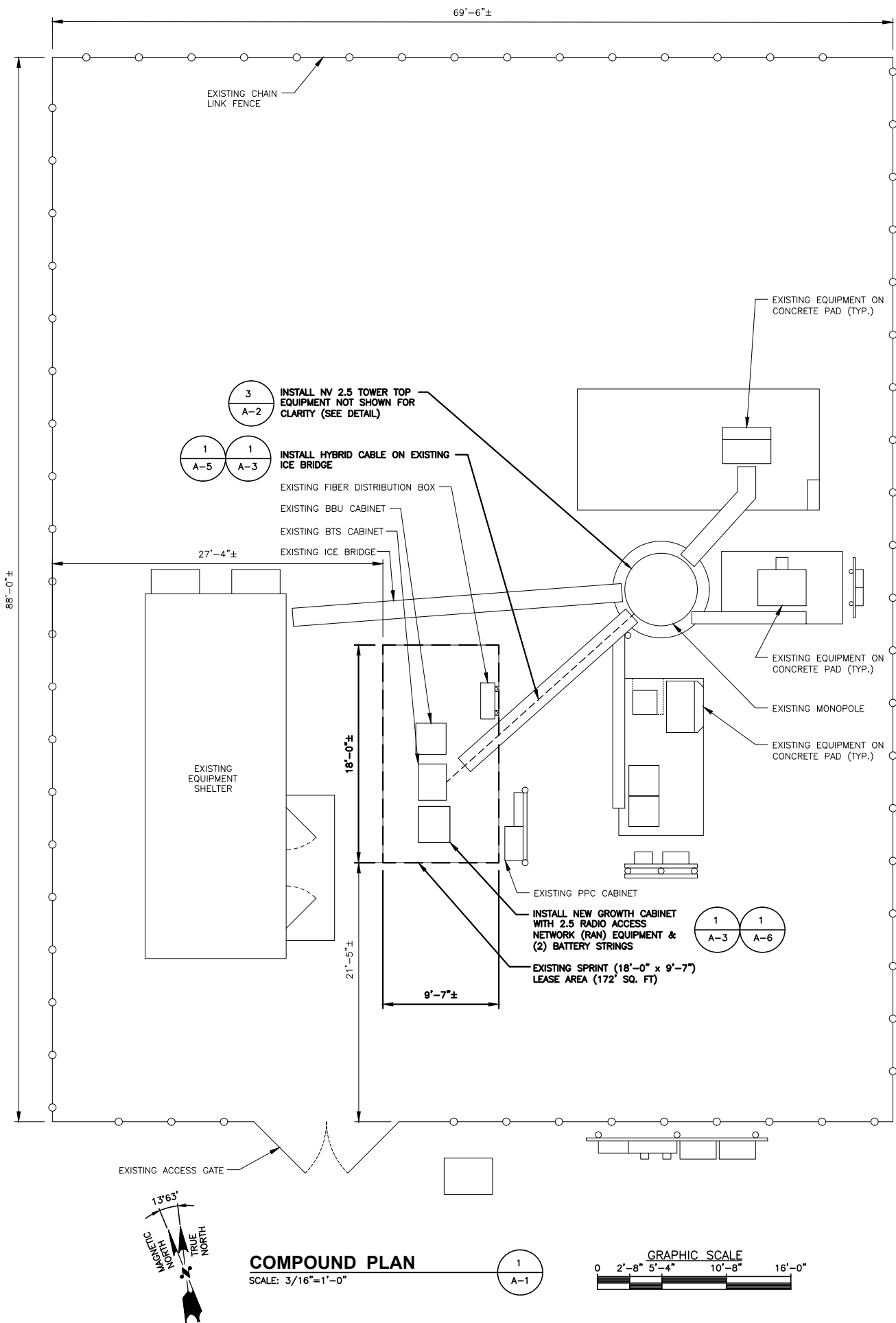
The anticipated composite MPE value for this site assuming all carriers present is **61.043%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



RAN EQUIPMENT PHOTO DETAIL 2
SCALE: N.T.S. A-1

Sprint

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

SBA

SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

Hudson Design Group

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845 TEL: (978) 557-5553
FAX: (978) 336-5584



Daniel P. Hamm

CHECKED BY: KB

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	05/21/14	ISSUED FOR CONSTRUCTION	SF
0	05/09/14	ISSUED FOR CONSTRUCTION	SF

SITE NUMBER:
CT23XC314-B

SITE NAME:
SISTERS OF HOLY
NAME/C.A.T.
SITE ADDRESS:
1428 MONROE TURNPIKE
MONROE, CT 06468

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

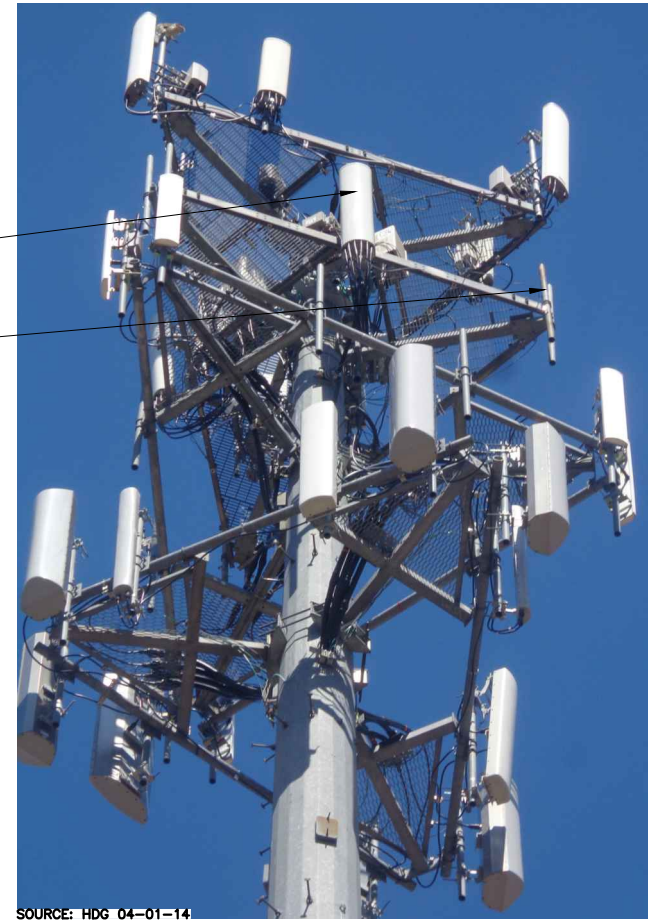
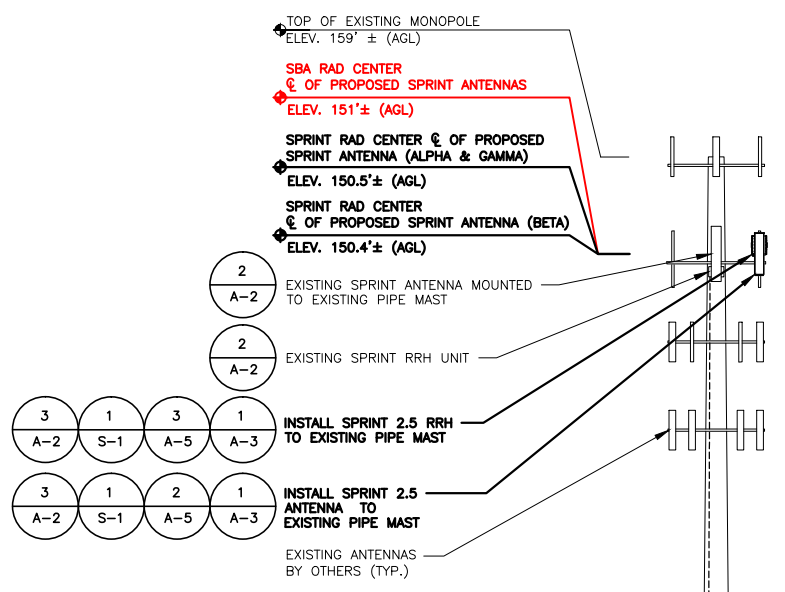
Daniel P. Hamm

SPECIAL CONSTRUCTION NOTE:
SPRINT TOWER TOP WORK IS CONTINGENT ON THE FOLLOWING:
• COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS (PROVIDED BY TOWER OWNER).
• COMPLETION OF AN ANTENNA/RRH MOUNT STRUCTURAL ASSESSMENT (PROVIDED BY A&E VENDOR).
• GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS AND ASSESSMENT.
• SBA COMMUNICATIONS CORPORATION SHALL PROVIDE WRITTEN ACCEPTANCE/APPROVAL FOR THE COMPLETION OF ALL TOWER/FOUNDATION STRUCTURAL MODIFICATIONS INCLUDING (AS NECESSARY) CONTROLLED CONSTRUCTION INSPECTIONS, SHOP-DRAWING APPROVALS, MATERIALS TEST RESULTS, AND FINAL ENGINEER'S AFFIDAVIT.

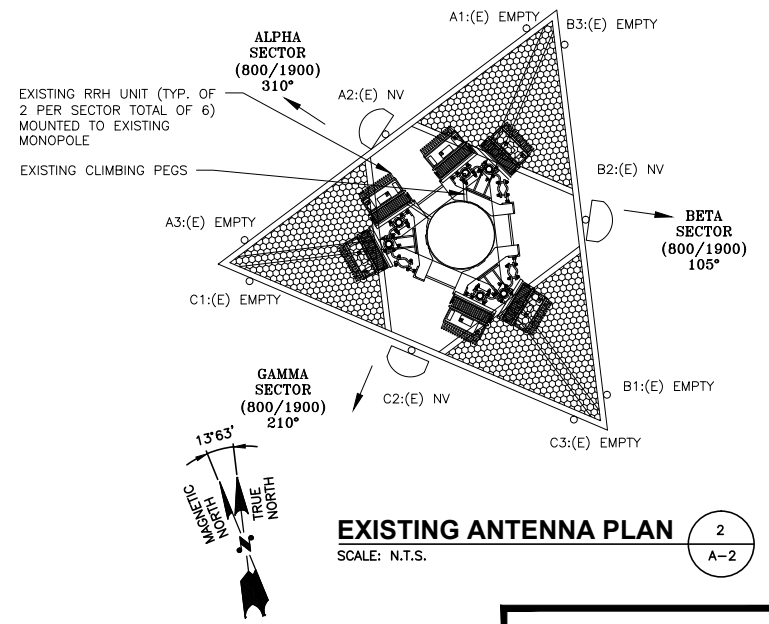
NOTE:
EXISTING AZIMUTHS FROM EXISTING FINAL CD DATED 06/08/12

NOTE:
SPRINT RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED COLLOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE SPRINT NV 2.5 RFDS.

SPECIAL CONSTRUCTION NOTE:
THE SPRINT NETWORK VISION 2.5 GHz TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT, AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.



EXISTING PARTIAL ELEVATION PHOTO DETAIL
SCALE: N.T.S.



SPECIAL WORK NOTE:
JUMPERS FROM 2.5 RRH TO 2.5 ANTENNA CAN NOT EXCEED 15'. NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY DISCREPANCY.

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

ANTENNA STATUS LEGEND:

EMPTY - EMPTY PIPE

(E) - EXISTING

(P) - INSTALL

NV - SPRINT ANTENNA MODEL APXVSP18-C-A20

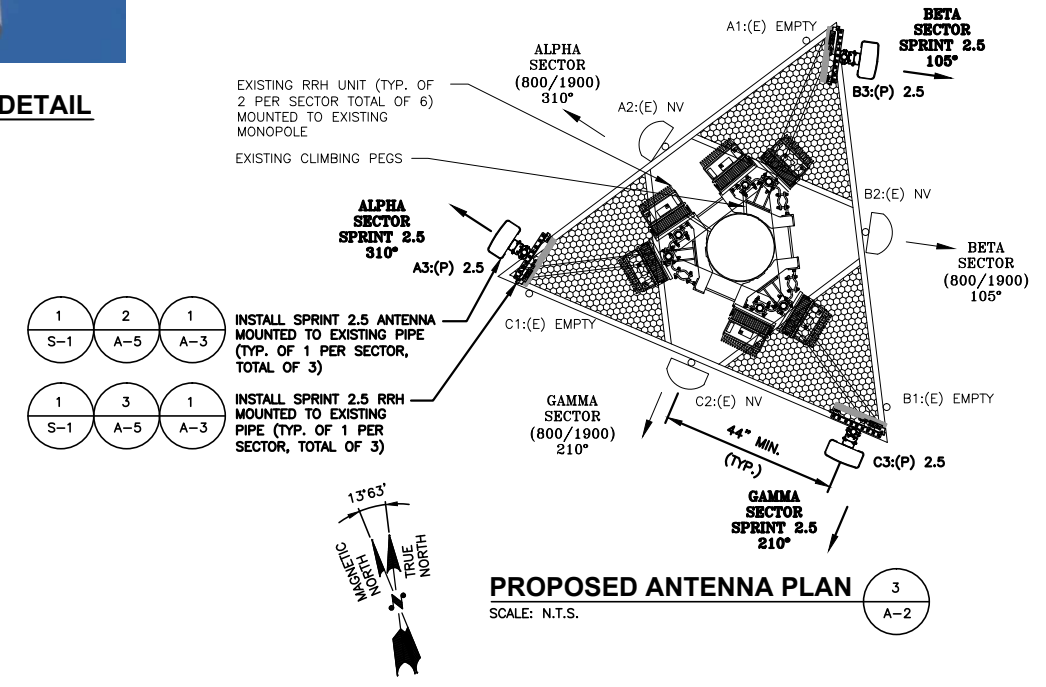
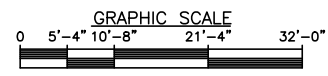
2.5 - SPRINT ANTENNA

1 A-3 1 A-5 INSTALL HYBRID CABLE INSIDE EXISTING MONOPOLE

NOTES:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

GROUND LEVEL
ELEV. 0.0' ± (AGL)

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



CHECKED BY: KB

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	05/21/14	ISSUED FOR CONSTRUCTION	SF
0	05/09/14	ISSUED FOR CONSTRUCTION	SF

SITE NUMBER:
CT23XC314-B

SITE NAME:
SISTERS OF HOLY NAME/C.A.T.

SITE ADDRESS:
1428 MONROE TURNPIKE
MONROE, CT 06468

SHEET TITLE
ELEVATION AND ANTENNA PLANS

SHEET NUMBER
A-2

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
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
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.

PREPARED BY:




6521 MERIDIEN DRIVE
 RALEIGH, NC 27616
 PHONE: 919-755-1012
 FAX: 919-755-1031

ENGINEERING INNOVATION

PREPARED FOR:



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



06/25/14

DENNIS D. ABEL, P.E.
 CONNECTICUT LIC. NO. 23247

DRAWN BY: AEW
 CHECKED BY: AWR
 ENG APPVD: DDA
 PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
 MONROE, CT 06468**

SHEET TITLE

**POST CONSTRUCTION
 INSPECTION NOTES**

SHEET NUMBER

N-1

GENERAL NOTES:

- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.

CONTRACTOR QUALIFICATION NOTES:

- 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 STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
- 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.
- 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.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE TIA-1019-A STANDARD.

JOB SITE SAFETY & NOTES:

- 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.

STEEL:

- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATIONS.
*ALL FLAT PLATE STEEL SHALL BE ASTM A572-65 (Fy=65KSI) UNLESS OTHERWISE SPECIFIED.
*ALL THREADED ROD SHALL BE ASTM A193-B7 (Fy=105KSI) UNLESS OTHERWISE SPECIFIED.
*ALL PIPE STEEL SHALL BE ASTM A500 GR. B (Fy=42KSI) UNLESS OTHERWISE SPECIFIED.
- 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).
- 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.
- 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 ACHIEVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
- 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.
- STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.

MISC. NOTES:

- 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.
- CONTRACTOR FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

- 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.
- NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION.

SUBSTITUTES AND/OR EQUALS:

- 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.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

- CONTRACTOR TO USE ZINGA OR ZRC COLD GALVANIZATION COMPOUNDS OR APPROVED EQUIVALENT.
- PREPARE RUSTED/CORRODED SURFACE FOR TREATMENT ACCORDING TO MANUFACTURE'S RECOMMENDATIONS.
- CONTRACTOR TO APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURER'S RECOMMENDATION. DRYING AND CURING TIMES MUST BE UTILIZED PER MANUFACTURER'S RECOMMENDATION.
- APPLY ALL COATINGS BY BRUSH IN CALM WIND CONDITIONS. THE USE OF AEROSOL IS NOT PERMITTED.
- IF THE TOWER IS PAINTED, BRUSH PAINT ALL TREATED AREAS TO MATCH TOWER AFTER COLD GALVANIZATION COMPOUND IS ALLOWED TO CURE.

NEW FLAT PLATE REINFORCEMENT NOTES:

- CONTRACTOR TO FIELD VERIFY PROPOSED LOCATION OF FLAT PLATE TO ENSURE THAT PROPER SPACING CAN BE MET.
- CONTRACTOR TO REPLACE AND/OR RELOCATE ANY CLIMBING PEGS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE.
- 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.
- ALL SHEAR SLEEVES TO BE HOT DIPPED GALVANIZED PRIOR TO INSTALLATION.
- PRIOR TO FLAT PLATE INSTALLATION, SLIP JOINTS MUST BE TIGHTENED WITH A MINIMUM JACKING FORCE OF 6000 LBS.
- NEW FLAT PLATES TO BE INSTALLED ON THE CENTER OF PROPOSED SIDE UNLESS OTHERWISE NOTED.
- EXISTING COAX BANDS TO BE REPLACED AFTER FLAT PLATE INSTALLATION. NEW FLAT PLATE TO BE INSTALLED BENEATH EXISTING COAX BANDS.

CONSTRUCTION NOTES:

- 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.

WELDING NOTES:

- 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.
- 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.
- CONTRACTOR RESPONSIBLE FOR TEMPORARY HEAT SHIELDING AS REQUIRED DURING WELDING.
- CONTRACTOR RESPONSIBLE FOR VIEWING EXISTING TOWER FOR LOOSE AND FLAMMABLE MATERIAL PRIOR TO WELDING FLAT PLATE.
- ALL WELDS TO BE VISUALLY INSPECTED BY A CERTIFIED WELD INSPECTOR PER AWS D1.1.

PRETENSION BOLTS:

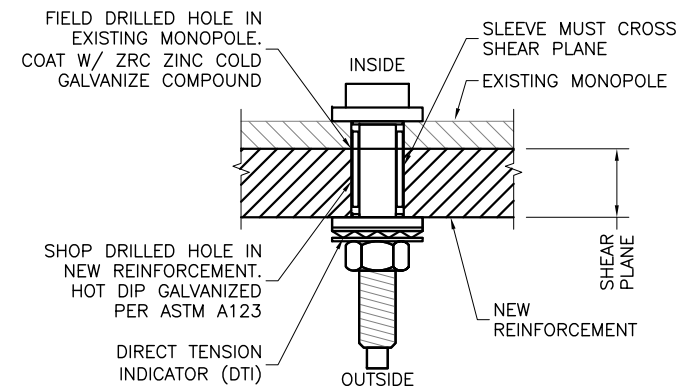
- ALL DIRECT TENSION INDICATOR (DTI) WASHERS SHALL BE THE "SQUIRTER@STYLE" AS MANUFACTURED BY:
APPLIED BOLTING TECHNOLOGY PRODUCTS, INC.
1413 ROCKINGHAM ROAD
BELLOWS FALLS, VERMONT 05101, USA
PHONE: 1-800-552-1999
WEBSITE: WWW.APPLIEDBOLTING.COM

- USE DIRECT TENSION INDICATOR (DTI) WASHERS COMPATIBLE WITH 3/4" NOMINAL A325 BOLTS FOR THE AJAX M20 BOLTS. DTI'S SHALL NOT BE HOT-DIP GALVANIZED. DTI'S SHALL BE MECHANICALLY GALVANIZED (MG) BY THE COLD MECHANICAL PROCESS ONLY AS PROVIDED BY THE DTI MANUFACTURER.
- USE HARDENED WASHER FOR A 3/4" NOMINAL BOLT BETWEEN THE TOP OF DIRECT TENSION INDICATOR (DTI) WASHER AND THE NUT OF THE AJAX M20 BOLT. HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A MINIMUM HARDNESS OF RE 38 OR HIGHER. THE HARDENED WASHERS SHALL BE MECHANICALLY GALVANIZED BY COLD MECHANICAL PROCESS. ALTERNATIVELY, CORRECTLY MADE HOT DIP GALVANIZED HARDENED FLAT WASHERS HAVING A MINIMUM HARDNESS OF RC 38 CAN BE USED; CONTRACTOR SHALL PROVIDE DOCUMENTATION OF WASHER SPECIFICATION AND HARDNESS.
- CONTRACTOR SHALL FOLLOW DTI MANUFACTURER'S INSTRUCTION FOR INSTALLATION, LUBRICATION, TIGHTENING AND INSPECTION.

INSPECTION REQUIRED: ALL AJAX BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", DEC. 32, 2009, BY A QUALIFIED BOLT INSPECTOR. DURING INSTALLATION, THE BOLT INSPECTOR SHALL VERIFY AND DOCUMENT THE SHOP-DRILL AND FIELD-DRILLED HOLE SIZES; THE INSTALLATION OF THE AJAX BOLT ASSEMBLY, INCLUDING THE SHEAR SLEEVE PLACEMENT AND NUT LUBRICATION AND CONTRACTOR'S TENSIONING PROCEDURE. IN ADDITION, ALL AJAX BOLTS AND DTI'S SHALL BE VISUALLY INSPECTED ACCORDING TO THE DTI MANUFACTURER'S INSTRUCTIONS. THE BOLT INSPECTOR SHALL PROVIDE PHOTO DOCUMENT OF ALL BOLTS AFTER TIGHTENING CLEARLY SHOWING THE CONDITION OF THE DTI'S.

SURFACE PREPARATION:

- 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.
- AFTER NEW STEEL INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF ZRC OR ZINGA COLD GALVANIZATION COMPOUND PER MANUFACTURER'S SPECIFICATIONS.



AJAX BOLT ASSEMBLY
SCALE: NTS

PREPARED BY:

6521 MERIDIEN DRIVE
RALEIGH, NC 27616
PHONE: 919-755-1012
FAX: 919-755-1031

ENGINEERING INNOVATION

PREPARED FOR:

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

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

06/25/14

DRAWN BY:	AEV
CHECKED BY:	AWR
ENG APPVD:	DDA
PROJECT NO:	1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
GENERAL NOTES I

SHEET NUMBER
N-2

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. CONSTRUCTION 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 TARGET TENSION FOR THIS PULL TEST IS 190K.
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.
10. 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.
11. 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.

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.

TRANSFER STIFFENER NOTES:

1. INSIDE POLE SHAFT TO BE SPRAYED WITH (2) COATS COLD GALVANIZATION PAINT WHERE ALL WELDED CONNECTIONS ARE PERFORMED.
2. AFTER STIFFENER INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF COLD GALVANIZATION PAINT THEN FINISH WITH (1) COAT OF COLD GALVANIZATION SPRAY.
3. CONTRACTOR TO VERIFY LOCATION OF ENTRY PORTHOLES PRIOR TO BASE PLATE STIFFENER INSTALLATIONS.

PREPARED BY:




6521 MERIDIEN DRIVE
RALEIGH, NC 27616
PHONE: 919-755-1012
FAX: 919-755-1031

ENGINEERING INNOVATION

PREPARED FOR:



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



06/25/14
DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY: AEV
CHECKED BY: AWR
ENG APPVD: DDA
PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

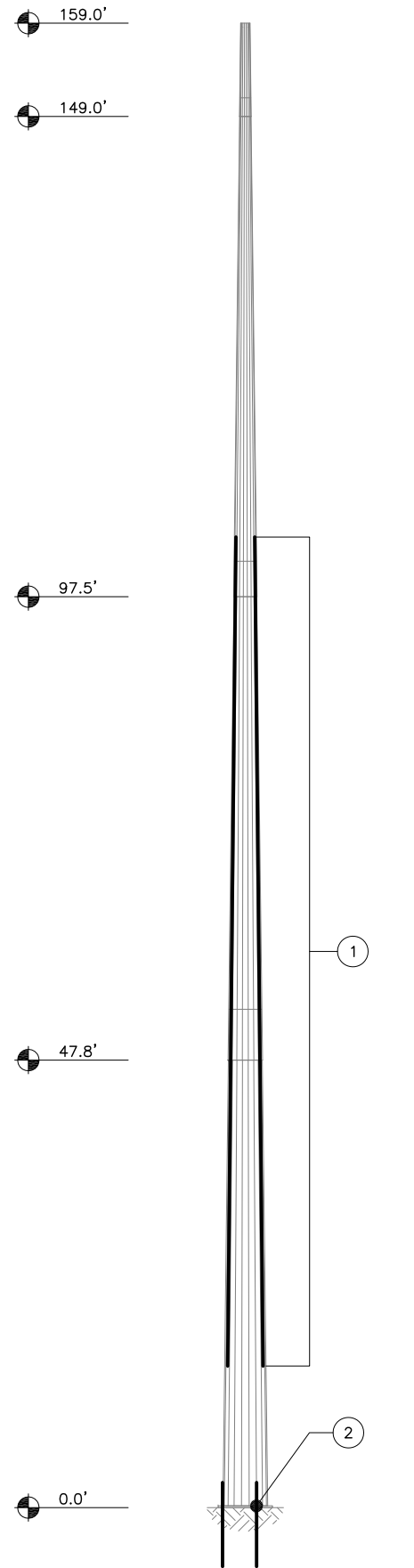
SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
GENERAL NOTES II

SHEET NUMBER
N-3

LENGTH (FT)	53.25	53.50	53.50	10.00
# OF SIDES			18	
THICKNESS (IN)	0.3750	0.3750	0.3125	0.1875
SOCKET LENGTH (FT)	N/A	5.50	3.75	2.00
TOP DIAMETER (IN)	41.2377	27.9166	13.9690	12.0000
BOT. DIAMETER (IN)	56.8400	43.6000	29.6400	14.9300



TOWER ELEVATION
SCALE: NTS

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS.
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT (UNLESS NOTED OTHERWISE). 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.
- COAX GRAPHICS NOT SHOWN FOR CLARITY. SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING COAX CONFIGURATION.


TOWER MODIFICATION SCHEDULE			
NO.	TYPE OF MODIFICATION	BOTTOM ELEV. (FT)	TOP ELEV. (FT)
1	INSTALLATION OF NEW FLAT PLATE REINFORCEMENT. SEE S-2 THROUGH S-4 DETAILS.	15.0±	103.9±
2	INSTALLATION OF NEW ANCHOR RODS. SEE S-5 & S-6 FOR DETAILS.	-7.1±	2.5±
TOWER FINISH: GALVANIZED			

PREPARED BY:

FDH
 ENGINEERING INNOVATION
 6521 MERIDIEN DRIVE
 RALEIGH, NC 27616
 PHONE: 919-755-1012
 FAX: 919-755-1031

PREPARED FOR:

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


 DENNIS D. ABEL, P.E.
 CONNECTICUT LIC. NO. 23247
 06/25/14

DRAWN BY: AEV
 CHECKED BY: AWR
 ENG APPVD: DDA
 PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

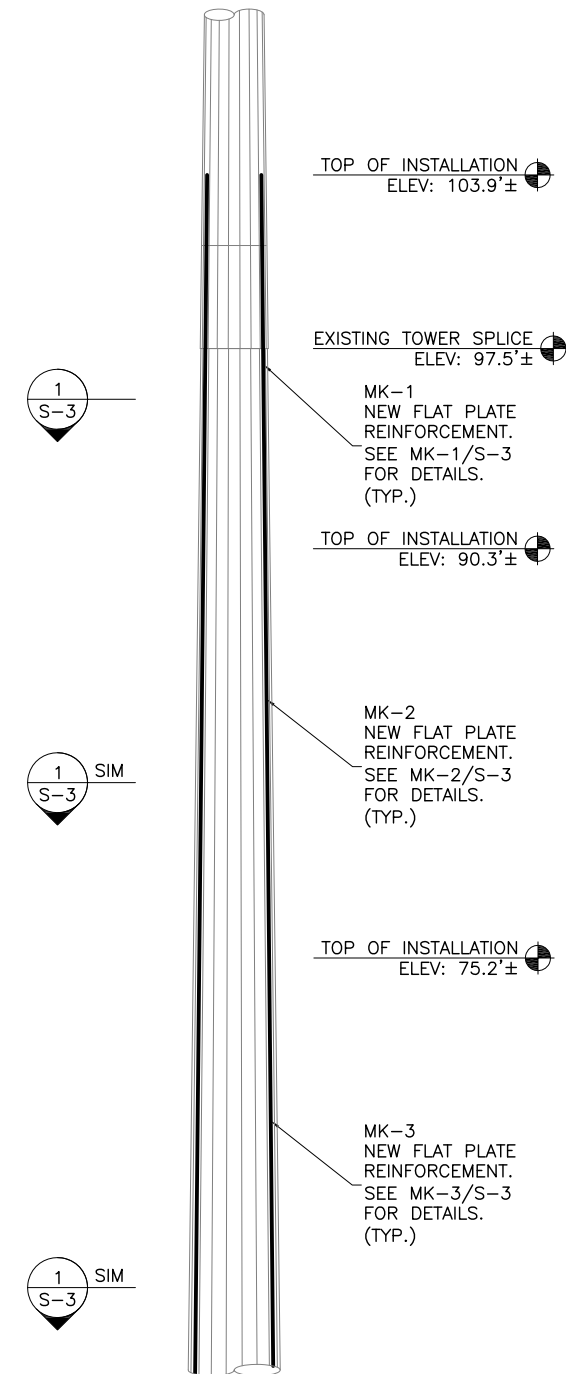
SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

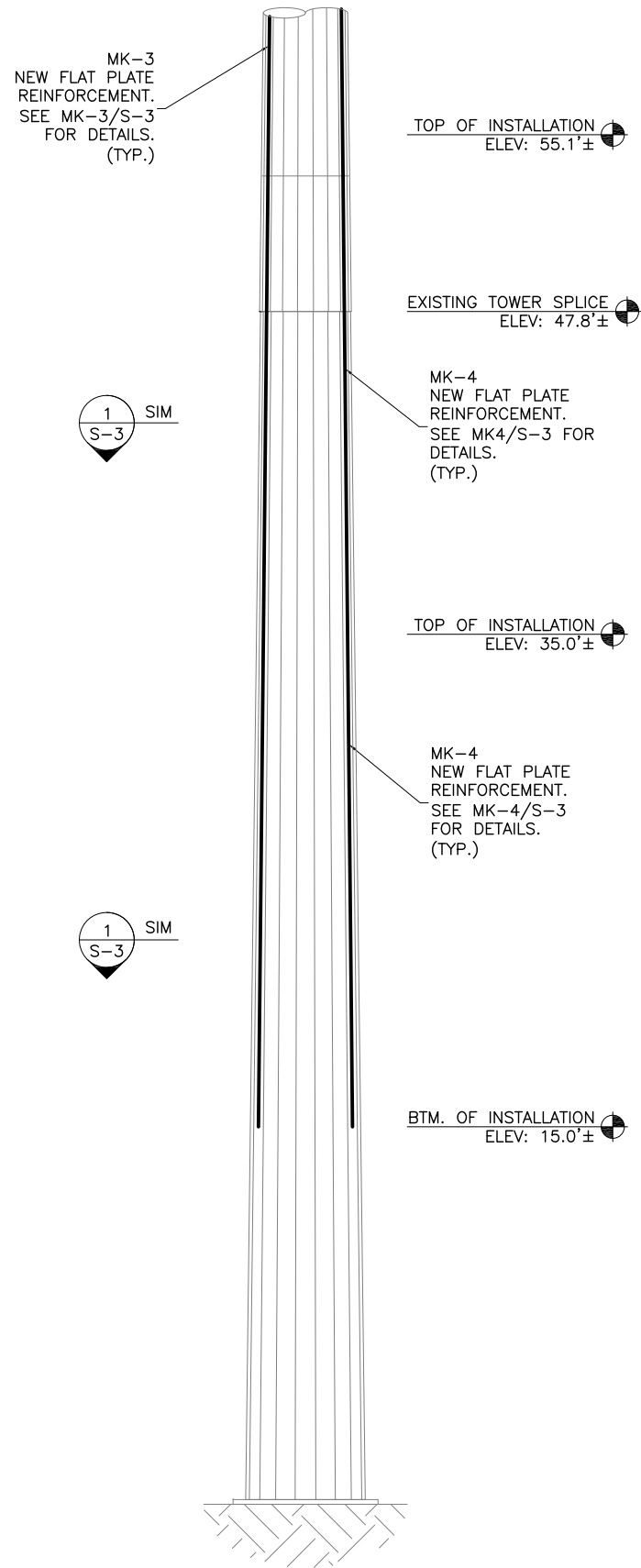
SHEET TITLE
MODIFICATION SCHEDULE

SHEET NUMBER
S-1



FLAT PLATE REINFORCEMENT LAYOUT
ELEVATION VIEW

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



FLAT PLATE REINFORCEMENT LAYOUT
ELEVATION VIEW

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

FLAT PLATE INSTALLATION SCHEDULE

PART #	QTY.	DESCRIPTION	ELEVATION	FLATS
MK-1	3	FLAT PLATE REINFORCEMENT	90'-4"± TO 103'-10"±	2 - 8 - 14
SP-1	3	SPLICE PLATE	90'-3"	2 - 8 - 14
MK-2	3	FLAT PLATE REINFORCEMENT	75'-3"± TO 90'-3"±	2 - 8 - 14
SP-2	3	SPLICE PLATE	75'-2"	2 - 8 - 14
MK-3	3	FLAT PLATE REINFORCEMENT	55'-2"± TO 75'-2"±	2 - 8 - 14
SP-3	3	SPLICE PLATE	55'-1"	2 - 8 - 14
MK-4	3	FLAT PLATE REINFORCEMENT	35'-1"± TO 55'-1"±	2 - 8 - 14
SP-4	3	SPLICE PLATE	35'-0"	2 - 8 - 14
MK-4	3	FLAT PLATE REINFORCEMENT	15'-0"± TO 35'-0"±	2 - 8 - 14
-	270	20MM AJAX BOLTS	VARIES	-

PREPARED BY:
FDH
 6521 MERIDIEN DRIVE
 RALEIGH, NC 27616
 PHONE: 919-755-1012
 FAX: 919-755-1031
ENGINEERING INNOVATION

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

06/25/14
 DENNIS D. ABEL, P.E.
 CONNECTICUT LIC. NO. 23247

DRAWN BY: AEW
 CHECKED BY: AWR
 ENG APPVD: DDA
 PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

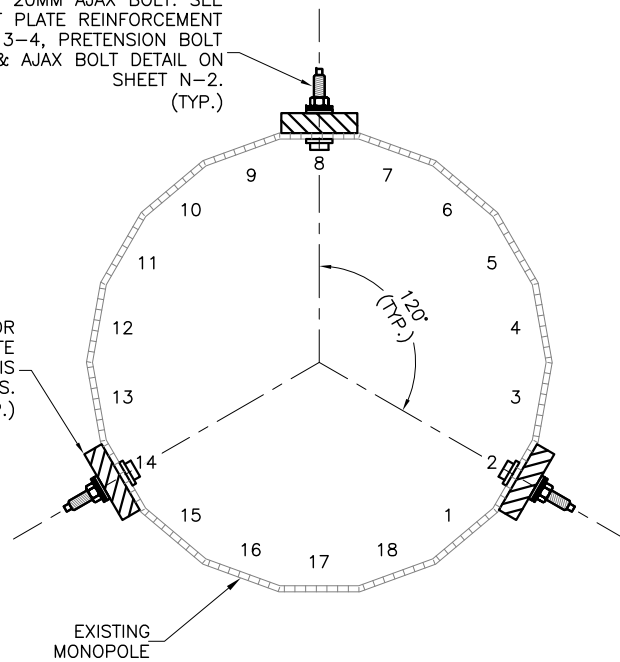
SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
**FLAT PLATE INSTALLATION
DETAILS I**

SHEET NUMBER
S-2

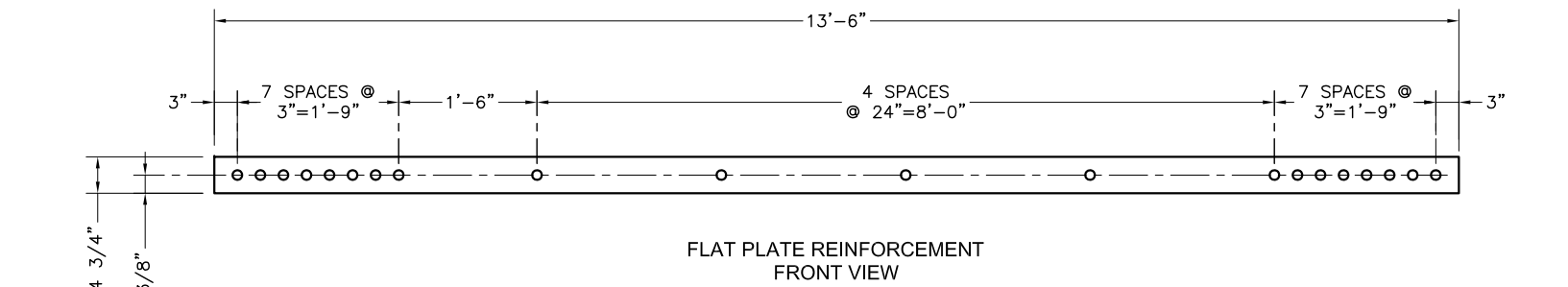
NEW 20MM AJAX BOLT. SEE
FLAT PLATE REINFORCEMENT
NOTES 3-4, PRETENSION BOLT
NOTES & AJAX BOLT DETAIL ON
SHEET N-2.
(TYP.)

MK-1, MK-2, MK-3, OR
MK-4. NEW FLAT PLATE
REINFORCEMENT. SEE THIS
SHEET FOR DETAILS.
(TYP.)



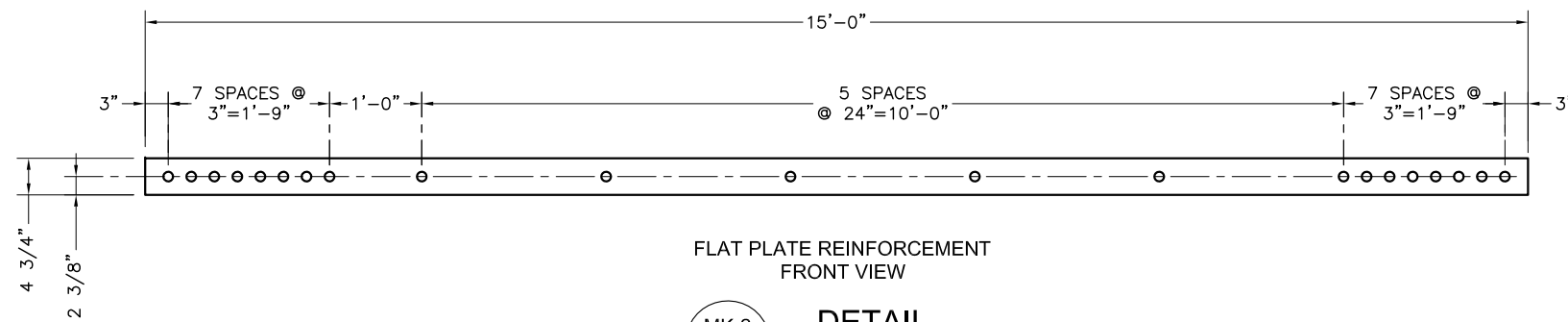
FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

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



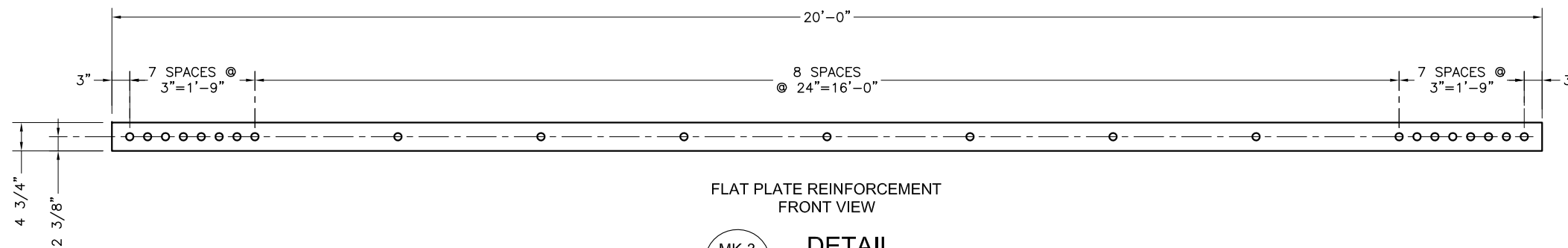
FLAT PLATE REINFORCEMENT
FRONT VIEW

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



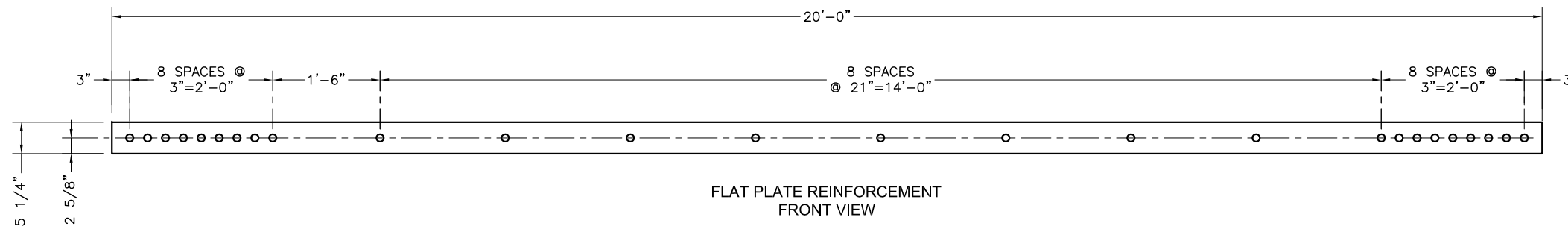
FLAT PLATE REINFORCEMENT
FRONT VIEW

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



FLAT PLATE REINFORCEMENT
FRONT VIEW

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



FLAT PLATE REINFORCEMENT
FRONT VIEW

MK-4
S-3
DETAIL
SCALE: 1/2" = 1'-0"

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

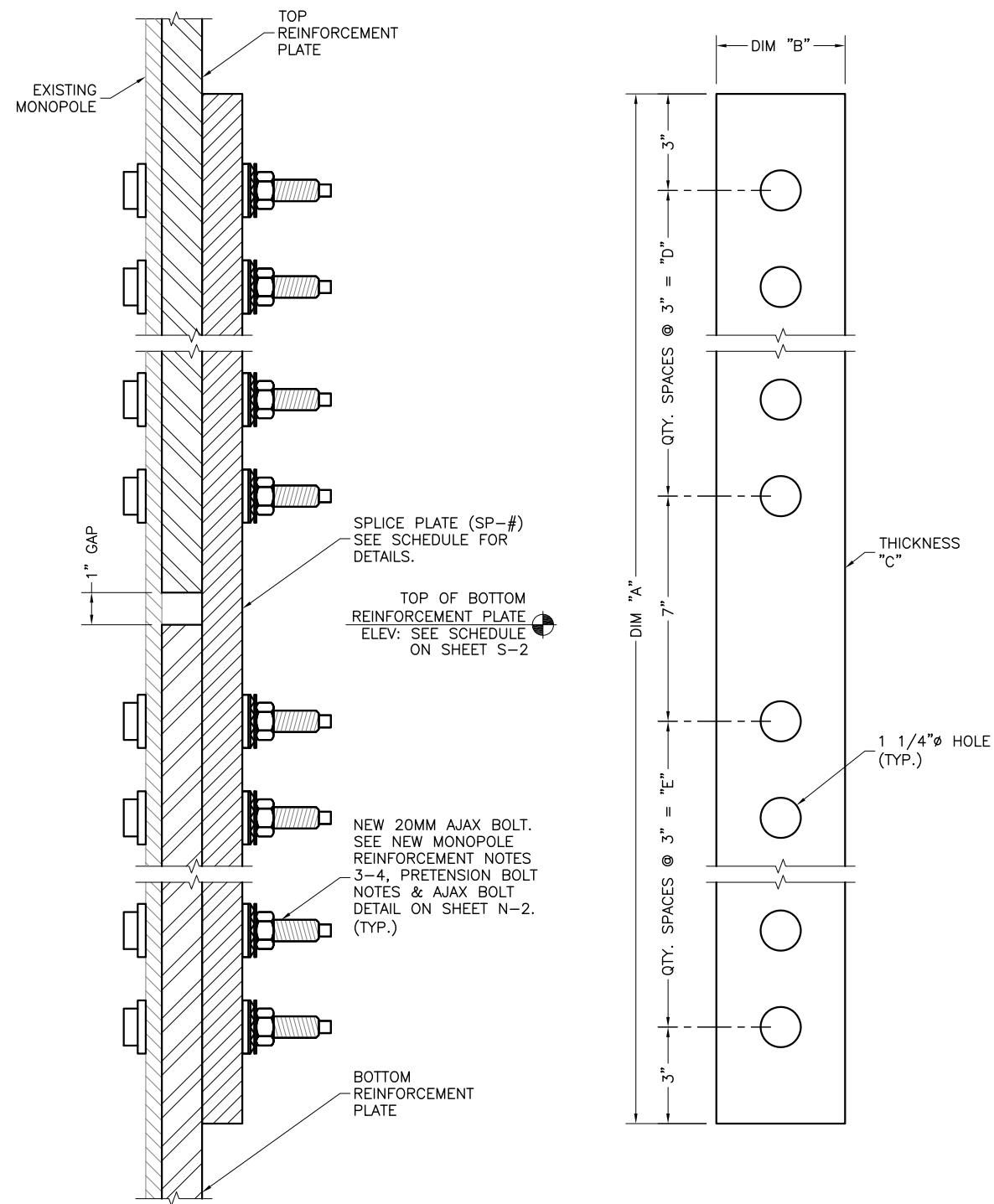
SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
**FLAT PLATE INSTALLATION
DETAILS II**

SHEET NUMBER
S-3



SPLICE PLATE ASSEMBLY
FRONT AND SIDE VIEW

1
S-4

DETAIL
NTS

SPLICE PLATE FABRICATION SCHEDULE

PART NO.	QUANTITY	DIMENSION "A"	DIMENSION "B"	THICKNESS "C"	QTY. SPACES @ 3" = "D"	QTY. SPACES @ 3" = "E"	TOP/BTM. REINF. PLATE
SP-1	3	4'-7"	4 3/4"	1 1/4"	7 SPACES @ 3" = 1'-9"	7 SPACES @ 3" = 1'-9"	MK-1 / MK-2
SP-2	3	4'-7"	4 3/4"	1 1/4"	7 SPACES @ 3" = 1'-9"	7 SPACES @ 3" = 1'-9"	MK-2 / MK-3
SP-3	3	4'-10"	4 3/4"	1 1/4"	7 SPACES @ 3" = 1'-9"	8 SPACES @ 3" = 2'-0"	MK-3 / MK-4
SP-4	3	5'-1"	5 1/4"	1 1/4"	8 SPACES @ 3" = 2'-0"	8 SPACES @ 3" = 2'-0"	MK-4 / MK-4

PREPARED BY:
FDH
6521 MERIDIAN DRIVE
RALEIGH, NC 27616
PHONE: 919-755-1012
FAX: 919-755-1031
ENGINEERING INNOVATION

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

Dennis D. Abel
DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247
06/25/14

DRAWN BY: AEW
CHECKED BY: AWR
ENG APPVD: DDA
PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
**SPLICE PLATE
FABRICATION DETAILS**

SHEET NUMBER
S-4

- 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.
- PULL TEST SHOULD BE PERFORMED PER PULL TEST NOTES ON SHEET N-3. THE TARGET TENSION OF THIS PULL TEST IS 190K.


ANCHOR ROD MATERIAL LIST			
PART. NO	QTY.	DESCRIPTION	ELEVATION
MK-5	3	ANCHOR ROD ASSEMBLY	0'-0"± TO 1'-6"±
-	3	NEW 2 1/4"Ø (2 1/4" O.D.) THREADED ROD x 9'-1/2"	-7'-1"± TO 2'-6 1/2"±
-	6	ROUND HARDENED WASHER	-
-	9	HEAVY-HEX NUT	-

PREPARED BY:

FDH
 ENGINEERING INNOVATION
 6521 MERIDEN DRIVE
 RALEIGH, NC 27616
 PHONE: 919-755-1012
 FAX: 919-755-1031

PREPARED FOR:

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


 DENNIS D. ABEL, P.E.
 CONNECTICUT LIC. NO. 23247
 06/25/14

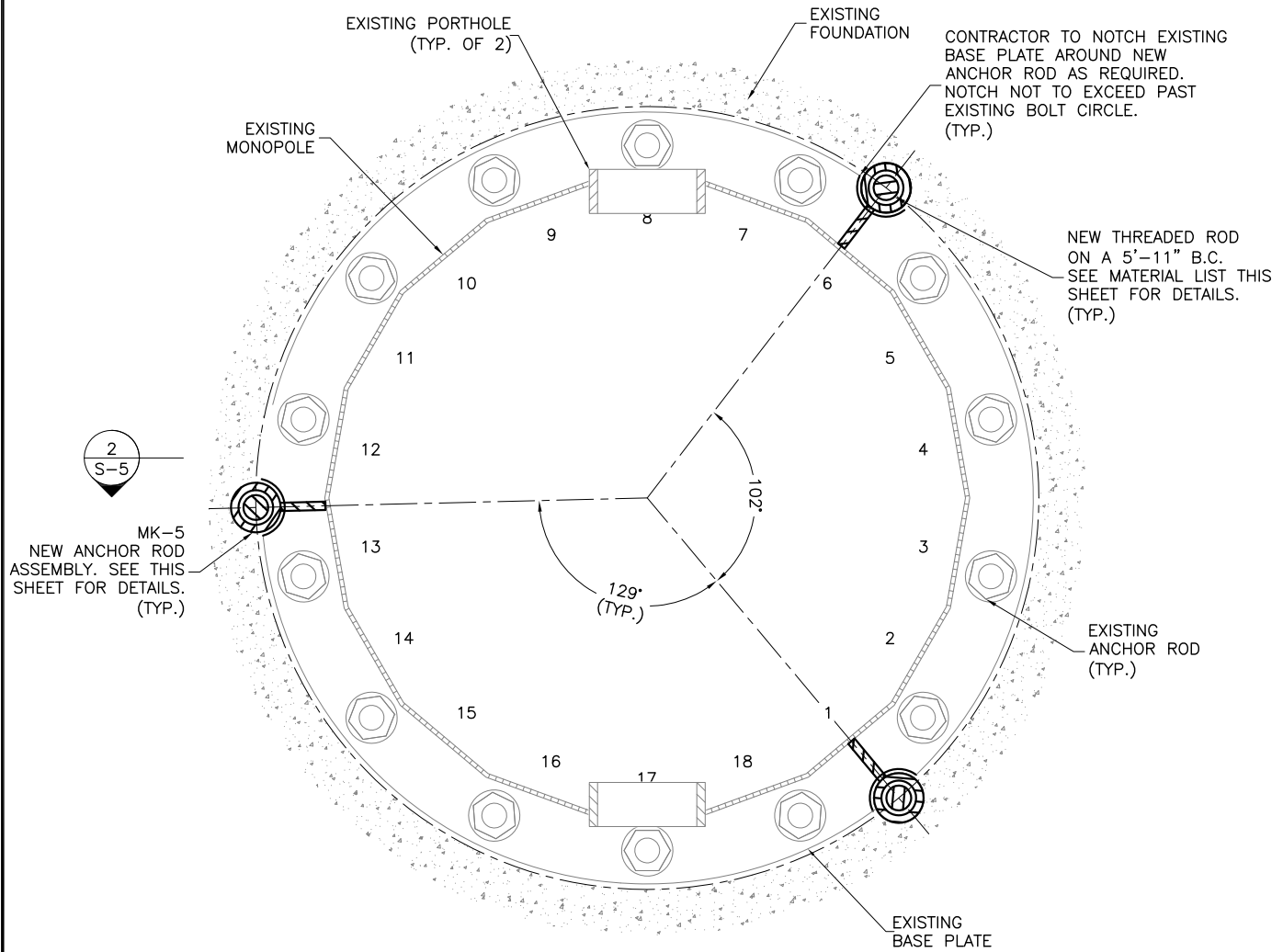
DRAWN BY: AEV
 CHECKED BY: AWR
 ENG APPVD: DDA
 PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

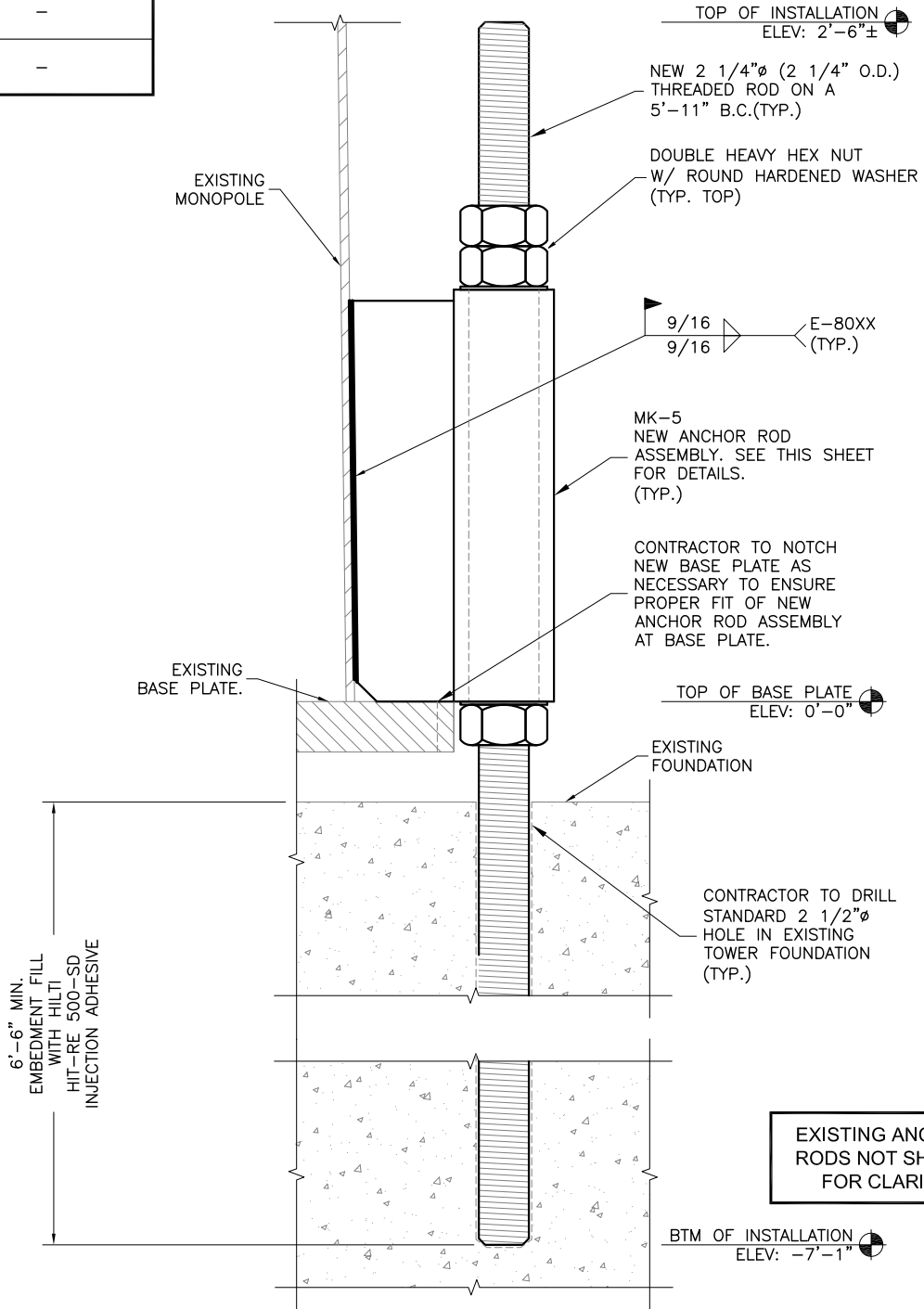
SITE NAME:
MONROE TURNPIKE
 SITE NUMBER:
CT13055-A-02
 SITE ADDRESS:
 1428 MONROE TURNPIKE
 MONROE, CT 06468

SHEET TITLE
 ANCHOR ROD
 INSTALLATION DETAILS I
 SHEET NUMBER
S-5



ANCHOR ROD INSTALLATION LAYOUT SECTION VIEW

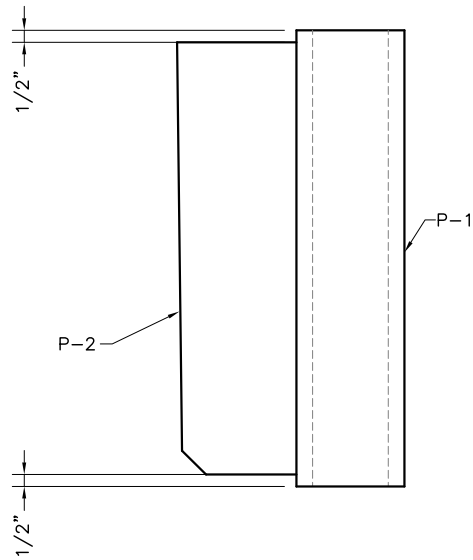
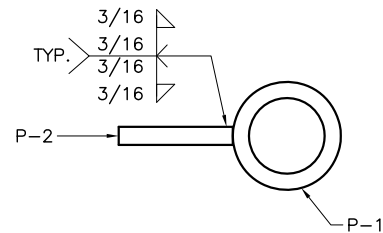
SECTION
 SCALE: 3/4" = 1'-0"



ANCHOR ROD ASSEMBLY WELD DETAIL ELEVATION VIEW

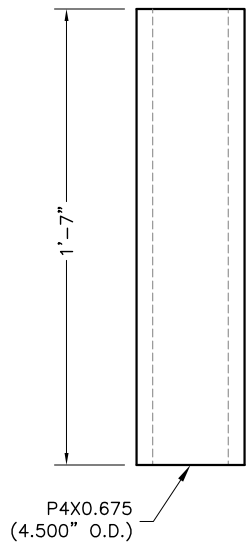
ELEVATION
 NTS

MATERIAL LIST (MK-5)		
PART. NO.	QTY.	DESCRIPTION
P-1	3	P4x0.675 (4.500"O.D.) ANCHOR ROD SLEEVE
P-2	3	TRANSFER PLATE



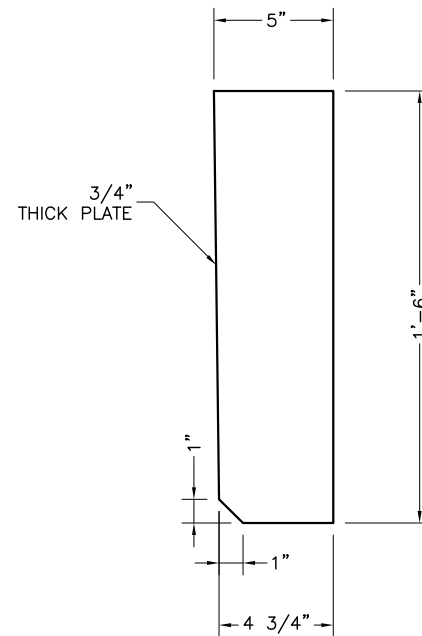
ANCHOR ROD ASSEMBLY
TOP & SIDE VIEW

MK-5 SECTION
S-6 SCALE: 1 1/2" = 1'-0"



ANCHOR ROD SLEEVE
SIDE VIEW

P-1 DETAIL
S-6 SCALE: 1 1/2" = 1'-0"



TRANSFER PLATE
SIDE VIEW

P-2 DETAIL
S-6 SCALE: 1 1/2" = 1'-0"

PREPARED BY:
FDH 6521 MERIDIEN DRIVE
RALEIGH, NC 27616
PHONE: 919-755-1012
FAX: 919-755-1031
ENGINEERING INNOVATION

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

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247
06/25/14

DRAWN BY: AEW
CHECKED BY: AWR
ENG APPVD: DDA
PROJECT NO: 1467DV1400

SUBMITTALS		
DATE	DESCRIPTION	REV
06/25/14	CONSTRUCTION	0

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF FDH ENGINEERING, INC. IS PROHIBITED.

SITE NAME:
MONROE TURNPIKE

SITE NUMBER:
CT13055-A-02

SITE ADDRESS:
**1428 MONROE TURNPIKE
MONROE, CT 06468**

SHEET TITLE
**ANCHOR ROD
INSTALLATION DETAILS II**

SHEET NUMBER
S-6