Robinson+Cole

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Also admitted in Massachusetts

November 19, 2014

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

Re: **Notice of Exempt Modification – Facility Modification**
246 East Franklin Street, Danielson (Killingly), Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the top of the existing 155-foot tower at 246 East Franklin Street in Danielson, Connecticut (the Property"). The tower is owned by SBA. The Council approved Cellco's use of this tower in 1999. Cellco now intends to modify its facility by replacing nine (9) of its existing antennas with three (3) model BXA-70080-4BF, 850 MHz antennas; three (3) model HBXX-6517DS, 1900 MHZ antennas; and three (3) model HBXX-6517DS, 2100 MHZ antennas, at the same level on the tower. Cellco also intends to install six (6) remote radio heads ("RRHs"), three behind its new 1900 MHz antennas and three behind its new 2100 MHz antennas, and one (1) HYBRIFLEX™ antenna cable. Included in Attachment 1 are specifications for Cellco's new antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Sean Hendricks, Town Manager for the Town of Killingly. A copy of this letter is also being sent to Charles R. Hutchins, the owner of the Property.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be installed on Cellco's existing antenna platform at the top of the 155-foot tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included in Attachment 2.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The tower and its foundation, with certain modifications described in Modification Drawings dated July 8, 2014, can support Cellco's proposed modifications. (*See* Structural Analysis and July 8, 2014 Modification Drawings included in Attachment 3).

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Sean Hendricks, Killingly Town Manager
Charles R. Hutchins
Sandy M. Carter

ATTACHMENT 1

BXA-70080-4BF-EDIN-X

X-Pol | FET Panel | 80° | 12.0 dBd

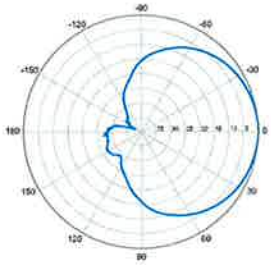
Replace 'X' with desired electrical downtilt.

Antenna is also available with N connector(s). Replace 'EDIN' with 'N' in the model number when ordering.

Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	82°	80°
Vertical beamwidth	17°	15°
Gain	11.5 dBd (13.6 dBi)	12.0 dBd (14.1 dBi)
Electrical downtilt (X)	0, 2, 4, 6, 8, 10, 12, 14	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-11.8 dB	-13.1 dB
Front-to-back ratio (+/-30°)	-30.3 dB	-36.7 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with N connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or N / Female / Bottom	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1125 x 204 x 150 mm	44.3 x 8.0 x 5.9 in
Depth with z-brackets	190 mm	7.5 in
Weight without mounting brackets	4.5 kg	9.8 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.23 m^2 Side: 0.17 m^2	Front: 2.5 ft^2 Side: 1.8 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 330 N Side: 279 N	Front: 74 lbf Side: 63 lbf

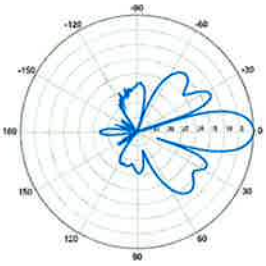
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting & Downtilt Bracket Kit	36210006	40-115 mm 1.57-4.5 in	4.1 kg 9 lbs
Concealment Configurations	For concealment configurations, order BXA-70080-4BF-EDIN-X-FP		

BXA-70080-4BF-EDIN-X



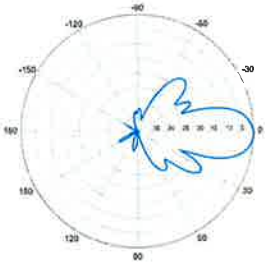
Horizontal | 750 MHz

BXA-70080-4BF-EDIN-0

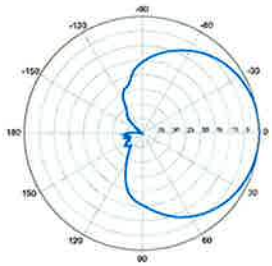


0° | Vertical | 750 MHz

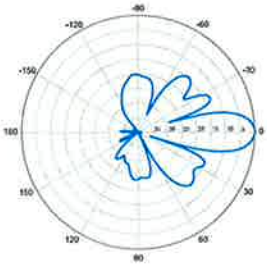
BXA-70080-4BF-EDIN-2



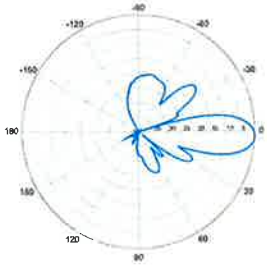
2° | Vertical | 750 MHz



Horizontal | 850 MHz



0° | Vertical | 850 MHz

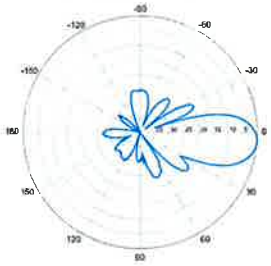


2° | Vertical | 850 MHz

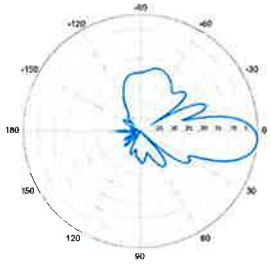
BXA-70080-4BF-EDIN-X

X-Pol | FET Panel | 80° | 12.0 dBd

BXA-70080-4BF-EDIN-4

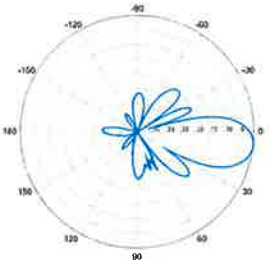


4° | Vertical | 750 MHz

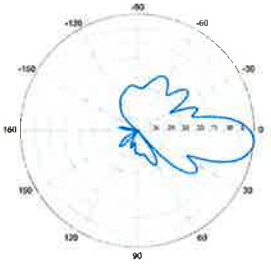


4° | Vertical | 850 MHz

BXA-70080-4BF-EDIN-6

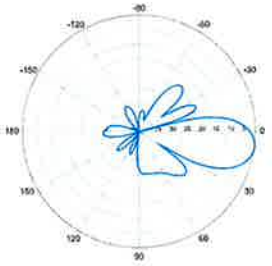


6° | Vertical | 750 MHz

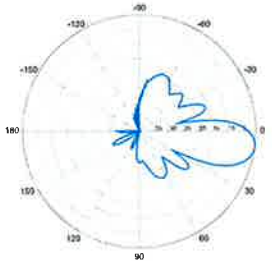


6° | Vertical | 850 MHz

BXA-70080-4BF-EDIN-8

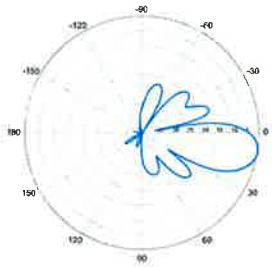


8° | Vertical | 750 MHz

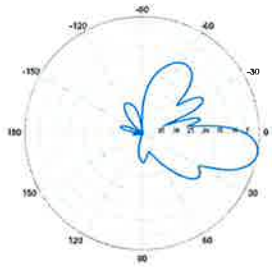


8° | Vertical | 850 MHz

BXA-70080-4BF-EDIN-10

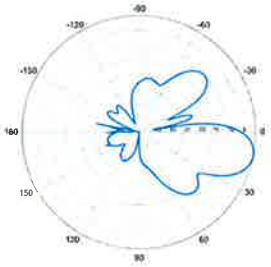


10° | Vertical | 750 MHz

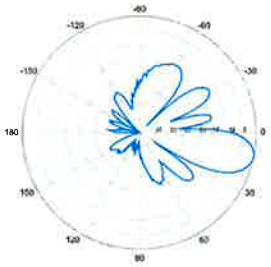


10° | Vertical | 850 MHz

BXA-70080-4BF-EDIN-12

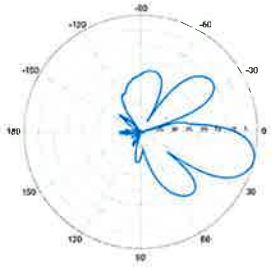


12° | Vertical | 750 MHz

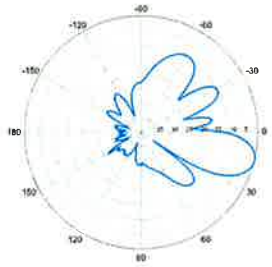


12° | Vertical | 850 MHz

BXA-70080-4BF-EDIN-14



14° | Vertical | 750 MHz



14° | Vertical | 850 MHz

Product Specifications

COMMSCOPE®

HBXX-6517DS-VTM

Andrew® Quad Port Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY ANDREW.

Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	18.5	18.6	18.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 18.4 3 ° | 18.7 6 ° | 18.4	0 ° | 18.4 3 ° | 18.7 6 ° | 18.5	0 ° | 18.7 3 ° | 18.9 6 ° | 18.6
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	25	26	26
CPR at Boresight, dB	22	23	22
CPR at Sector, dB	10	10	9
Isolation, dB	30	30	30
VSWR | Return Loss, dB	1.4 | 15.6	1.4 | 15.6	1.4 | 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°

**Values calculated using NGMN Alliance N-P-BASTA v9.6*

Mechanical Specifications

Color | Radome Material	Light gray | PVC, UV resistant
Connector Interface | Location | Quantity	7-16 DIN Female | Bottom | 4
Wind Loading, maximum	668.0 N @ 150 km/h 150.2 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph
Antenna Dimensions, L x W x D	1903.0 mm x 305.0 mm x 166.0 mm | 74.9 in x 12.0 in x 6.5 in
Net Weight	19.5 kg | 43.0 lb
Model with factory installed AISG 2.0 RET	HBXX-6517DS-A2M

PCS RF MODULES
RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

		RRH2x60
RF Output Power		2x60W
Instantaneous Bandwidth		20MHz
Transmitter		2 TX
Receiver	1900 HW version	2 Branch RX – LA6.0.1
	1900A HW version	4 Branch RX – LR13.3
Features		AISG 2.0 for RET/TMA
		Internal Smart Bias-T
Power		-48VDC
CPRI Ports		2 CPRI Rate 3 Ports
External Alarms		4 External User Alarms
Monitor Ports		TX
Environmental		GR487 Compliance
RF Connectors		7/16 DIN (top mounted)

** Not a Verizon Wireless deployed product

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NEW PCS RF MODULES FOR VZW
RRH2X60 - HW CHARACTERISTICS

LR14.3

	RRH2x60
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC
	Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w)x 9.4" (d)**
Weight	55lb**

**- Includes solar shield but not mounting brackets (8 lbs.)

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ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET

RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.

A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

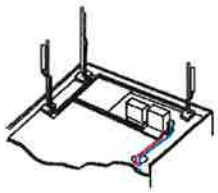
EASY INSTALLATION

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

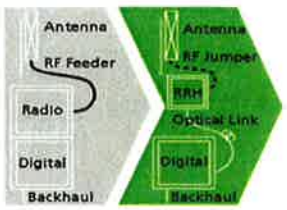
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

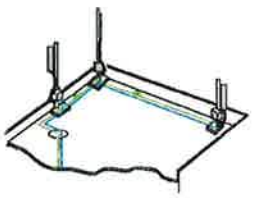
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

Alcatel·Lucent

AT THE SPEED OF IDEAS™

Product Data Sheet HB158-1-08U8-S8J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²/8AWG		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-93-638 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

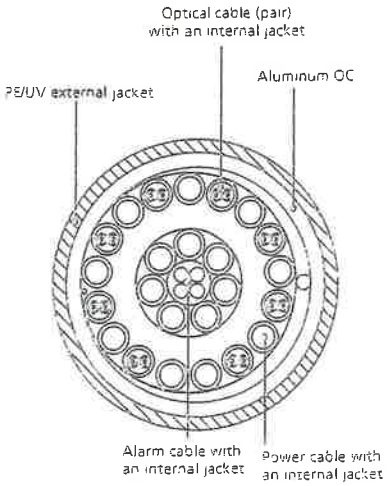


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Danielson								
Tower Height: 155ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T UMTS	2	565	127	0.0252	880	0.5867	4.29%	
*AT&T UMTS	2	875	127	0.0390	1900	1.0000	3.90%	
*AT&T GSM	1	283	127	0.0063	880	0.5867	1.08%	
*AT&T GSM	4	525	127	0.0468	1900	1.0000	4.68%	
*AT&T LTE	1	1771	127	0.0395	734	0.4893	8.07%	
*MetroPCS	3	443.61	117	0.0350	2140	1.0000	3.50%	
*Sprint CDMA/LTE	3	693	147	0.0346	1900	1.0000	3.46%	
*Sprint CDMA/LTE	1	390	147	0.0065	850	0.5667	1.15%	
*Sprint CDMA/LTE	2	693	147	0.0231	2500	1.0000	2.31%	
*V'Stream	2	449	137	0.0172	1930	1.0000	1.72%	
Verizon PCS	**15**	**1517**	**155**	**0.3406**	**1970**	**1.0000**	**34.06%**	
Verizon Cellular	**9**	**220**	**155**	**0.0296**	**869**	**0.5793**	**5.12%**	
Verizon AWS	**1**	**2613**	**155**	**0.0391**	**2145**	**1.0000**	**3.91%**	
Verizon 700	**1**	**685**	**155**	**0.0103**	**698**	**0.4973**	**2.06%**	
								79.29%
* Source: Siting Council								

ATTACHMENT 3

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

Structural Analysis for SBA Network Services, Inc.

155' Monopole

SBA Site Name: Danielson
SBA Site ID: CT00302-S-01
Verizon Site ID: Danielson NE

FDH Project Number 146DSB1400 (R2)

Analysis Results

Tower Components	94.1%	Sufficient
Foundation	59.1%	Sufficient

Prepared By:

Anjali Guli, EI
Project Engineer

Reviewed By:

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

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

STATE OF CONNECTICUT BRADLEY R. NEWMAN 29630 LICENSED PROFESSIONAL ENGINEER

11/11/14

November 11, 2014

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

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Danielson, 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, geotechnical data, foundation dimensions, and member sizes was obtained from:

- Fred A. Nudd Corporation (Project No. 6410) Design of 155' Monopole dated October 27, 1998
- Jaworksi Geotech, Inc. (Project No. C98423G) Geotechnical Evaluation dated October 14, 1998
- Vertical Structures, Inc. (Job No. TA2009-007-021) 2009 Modifications Tower Rework For A 155' Nudd M-200 Monopole dated July 16, 2009
- Vertical Structures, Inc. (Job No. TA2008-007-031) 2008 Modifications Tower Rework For A 155' Nudd M-200 Monopole dated November 10, 2008
- Vertical Structures, Inc. (Job No. 2002-007-001) 2002 Modifications Tower Rework For A 155' Monopole dated October 7, 2002
- FDH Engineering, Inc. (Project No. 12-01571E S4) Modification Drawings for a 155' Monopole dated January 23, 2013
- FDH, Inc. (Project No. 1301411700) Modification Inspection Report dated July 23, 2013
- FDH, Inc. (Job No. 1301411700) TIA Inspection Report dated July 25, 2013
- FDH Engineering, Inc. (Project No. 1466VA1400) Modification Drawings for a 155' Monopole dated July 8, 2014
- 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 1" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from Verizon in place at 155 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. 6410) and using the existing soil parameters (see Jaworksi Geotech, Inc. Project No. C98423G), the foundation should have the necessary capacity to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

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

Recommendations

To ensure the requirements of the *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. The proposed feed lines should be installed inside of the monopole's shaft.
2. RRU/RRH Stipulation: The proposed equipment may be installed in any arrangement as determined by the client.
3. Modifications outlined in FDH Engineering, Inc. (Project No. 1466VA1400) Modification Drawings for a 155' Monopole dated July 8, 2014 must be correctly installed in order for this analysis to be valid.

APPURTENANCE LISTING

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

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Feed Lines[1]	Carrier	Mount Elevation (ft)	Mount Type
155	(3) Antel BXA-70063/6CF (6) Antel LPA-80080/4CF (3) Antel BXA-171085/12BF (6) RFS FD9R6004/2C-3L Diplexers	(12) 1-5/8"	Verizon	155	(1) 14' Low Profile Platform
147	(3) RFS APXVSPP18-C-A20 (3) RFS APXVTM14-C-I20 (3) ALU TD-RRH8x20-25 RRHs (3) ALU 1900 MHz RRHs (3) ALU 800 MHz RRHs (3) ALU 800 MHz Filters (4) RFS ACU-A20-N RETs	(4) 1-1/4"	Sprint	147.5	(1) 14' Low Profile Platform
137	(6) Dapa 59212	(6) 1-5/8"	T-Mobile	137	(1) 14' Low Profile Platform
127	(6) Powerwave 7770.00 (3) KMW AM-X-CD-17-65-00T (6) Powerwave LGP21401 TMAs (6) Powerwave LGP21903 Diplexers	(12) 1-5/8" (2) 3/4" DC (1) 7/16" Fiber	New Cingular	125	(1) 14' Low Profile Platform
125	(6) Ericsson RRUS-11 RRUs (1) Raycap DC2-48-60-18-8F Surge Arrestor				(1) Universal Ring Mount (Part No. LWRM)
117	(6) Kathrein 742 351	(12) 1-5/8" (1) 3/8"	Metro PCS	117	(3) 12' T-Frames
35	(1) Decibel DB589 Omni	(2) 7/8"	American Messaging	31	(1) Standoff

1. Feed lines installed inside the monopole shaft unless otherwise noted.

Proposed Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
155	(3) Antel BXA-70063/6CF (3) Antel BXA-70080/4BF (6) Commscope HBXX-6517DS-A2M (3) Alcatel Lucent RRH_2x60-AWS (3) Alcatel Lucent RRH_2x60-PCS (6) RFS FD9R6004/2C-3L Diplexers (1) RFS DB-T1-6Z-8AB-0Z Distribution Box	(12) 1-5/8" (1) 1-5/8" Fiber	Verizon	155	(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 Shaft Sections	53 ksi & 50 ksi
Base Plate	36 ksi
Anchor Bolts	90 ksi & 105 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	155 - 115	Pole	TP33.925x26.125x0.25	74.5	Pass
L2	115 - 100	Modified Pole	TP36.474x32.45x0.25	92.3	Pass
L3	100 - 70	Modified Pole	TP41.57x36.474x0.3125	92.1	Pass
L4	70 - 36	Modified Pole	TP47.358x39.9258x0.375	94.1	Pass
L5	36 - 0	Modified Pole	TP53.9x45.4932x0.4331	92.3	Pass
-	0	Anchor Bolts	(18) 2" Ø on 61" Ø BC	81.0	Pass
			(6) 2" Ø on 69" BC	88.2	Pass
-	0	Base Plate	67" Ø x 1.75" thk.	36.3	Pass
-	0	Base Stiffeners	6" x 0.75"	86.9	Pass

* Capacities include 1/3 allowable stress increase 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	55 k	29 k
Shear	42 k	38 k
Moment	4,388 k-ft	3,559 k-ft

*Foundation determined to be adequate per independent analysis.

GENERAL COMMENTS

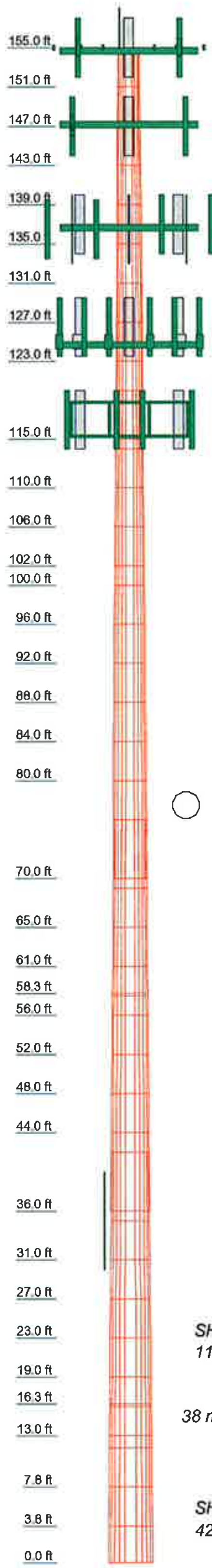
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading 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

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	4.00	12	[illegible]		[illegible]	[illegible]	A36M-50	0.3
2	4.00	12	[illegible]		[illegible]	[illegible]		0.3
3	4.00	12	[illegible]		[illegible]	[illegible]		0.3
4	4.00	12	[illegible]		[illegible]	[illegible]		0.3
5	4.00	12	[illegible]		[illegible]	[illegible]		0.3
6	4.00	12	[illegible]		[illegible]	[illegible]		0.3
7	4.00	12	[illegible]		[illegible]	[illegible]		0.3
8	4.00	12	0.2500		31.5850	32.3650		0.3
9	[illegible]	12	0.2500	5.00	32.3650	33.9250		0.7
10	[illegible]	12	[illegible]		[illegible]	[illegible]		0.8
11	4.00	12	[illegible]		[illegible]	[illegible]		0.5
12	4.00	12	[illegible]		[illegible]	[illegible]		0.6
13	4.00	12	[illegible]		[illegible]	[illegible]		0.6
14	2.00	12	[illegible]		[illegible]	[illegible]		0.3
15	4.00	12	[illegible]		[illegible]	[illegible]		0.7
16	4.00	12	[illegible]		[illegible]	[illegible]	A36M-53	0.7
17	4.00	12	[illegible]		[illegible]	[illegible]		0.7
18	4.00	12	[illegible]		[illegible]	[illegible]		0.8
19	4.00	12	[illegible]		[illegible]	[illegible]		0.8
20	[illegible]	12	0.4525	6.00	39.8713	41.5700		2.0
21	[illegible]	12	[illegible]		[illegible]	[illegible]		1.6
22	4.00	12	[illegible]		[illegible]	[illegible]		0.9
23	4.00	12	[illegible]		[illegible]	[illegible]		0.9
24	[illegible]	12	[illegible]		[illegible]	[illegible]		0.7
[illegible]	2.00	12	[illegible]		[illegible]	[illegible]		0.6
27	4.00	12	[illegible]		[illegible]	[illegible]		1.2
28	4.00	12	[illegible]		[illegible]	[illegible]		1.2
29	4.00	12	[illegible]		[illegible]	[illegible]		1.2
30	[illegible]	12	0.6100	6.00	45.8716	47.3580		2.6
31	[illegible]	12	[illegible]		[illegible]	[illegible]		2.4
32	4.00	12	[illegible]		[illegible]	[illegible]		1.4
33	4.00	12	[illegible]		[illegible]	[illegible]		1.4
34	4.00	12	[illegible]		[illegible]	[illegible]		1.4
35	4.00	12	[illegible]		[illegible]	[illegible]		1.4
36	[illegible]	12	[illegible]		[illegible]	[illegible]		1.0
37 / 38	[illegible]	12	[illegible]		[illegible]	[illegible]		1.00
39	[illegible]	12	[illegible]		[illegible]	[illegible]		0.5
40	[illegible]	12	[illegible]		[illegible]	[illegible]		1.5
41	4.00	12	[illegible]		[illegible]	[illegible]		1.5
42	3.75	12	[illegible]		[illegible]	[illegible]		1.4
								37.7



DESIGNED APPURTENANCE LOADING

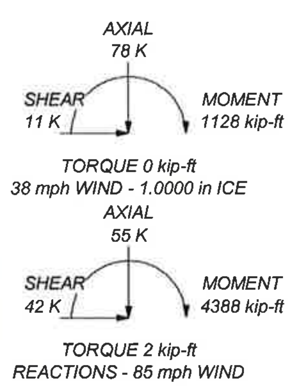
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	155	800 MHz Filter	147.5
GPS	155	(2) ACU-A20-N RET	147.5
4.5' x 1.64" Pipe Mount	155	ACU-A20-N RET	147.5
BXA-70063/6CF w/ Mount Pipe	155	ACU-A20-N RET	147.5
BXA-70063/6CF w/ Mount Pipe	155	14.5' Low Profile Platform	147.5
BXA-70063/6CF w/ Mount Pipe	155	(2) 59212 w/ Mount Pipe	137
BXA-70080/4CF w/ Mount Pipe	155	RR90-17-02DP w/Mount Pipe	137
BXA-70080/4CF w/ Mount Pipe	155	RR90-17-02DP w/Mount Pipe	137
BXA-70080/4CF w/ Mount Pipe	155	Empty Mount Pipe	137
(2) HBXX-6517DS-A2M w/ Mount Pipe	155	(2) Empty Mount Pipe	137
(2) HBXX-6517DS-A2M w/ Mount Pipe	155	(2) Empty Mount Pipe	137
(2) HBXX-6517DS-A2M w/ Mount Pipe	155	14.5' Low Profile Platform	137
RRH-2x60-AWS	155	(2) 7770.00 w/Mount Pipe	125
RRH-2x60-AWS	155	(2) 7770.00 w/Mount Pipe	125
RRH-2x60-AWS	155	(2) 7770.00 w/Mount Pipe	125
RRH-2x60-PCS	155	AM-X-CD-17-65-00T-RET w/ Mount Pipe	125
RRH-2x60-PCS	155	AM-X-CD-17-65-00T-RET w/ Mount Pipe	125
RRH-2x60-PCS	155	AM-X-CD-17-65-00T-RET w/ Mount Pipe	125
(2) FD9R6004/2C-3L Diplexer	155	(2) LGP21401 TMA	125
(2) FD9R6004/2C-3L Diplexer	155	(2) LGP21401 TMA	125
(2) FD9R6004/2C-3L Diplexer	155	(2) LGP21401 TMA	125
DB-T1-6Z-8AB-0Z Distribution Box	155	(2) LGP21903 Diplexer	125
14.5' Low Profile Platform	155	(2) LGP21903 Diplexer	125
APXVSPP18-C-A20 w/Mount Pipe	147.5	(2) LGP21903 Diplexer	125
APXVSPP18-C-A20 w/Mount Pipe	147.5	(2) RRUS-11	125
APXVSPP18-C-A20 w/Mount Pipe	147.5	(2) RRUS-11	125
APXVTM14-C-I20 w/Mount Pipe	147.5	(2) RRUS-11	125
APXVTM14-C-I20 w/Mount Pipe	147.5	DC2-48-60-18-8F	125
APXVTM14-C-I20 w/Mount Pipe	147.5	12.5' Low Profile Platform	125
TD-RRH8x20-25	147.5	Universal Ring Mount	125
TD-RRH8x20-25	147.5	(2) 742 351 w/ Mount Pipe	117
TD-RRH8x20-25	147.5	(2) 742 351 w/ Mount Pipe	117
1900 MHz RRH	147.5	(2) 742 351 w/ Mount Pipe	117
1900 MHz RRH	147.5	(3) T-Frames	117
1900 MHz RRH	147.5	DB589	31
800 MHz RRH	147.5	3.58' Standoff	31
800 MHz RRH	147.5		
800 MHz RRH	147.5		
800 MHz Filter	147.5		
800 MHz Filter	147.5		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-50	50 ksi	65 ksi	A36M-53	53 ksi	60 ksi

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.



FDH Engineering, Inc. 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	Job: Danielson, CT00302-S-02		
Tower Analysis	Project: 146DSB1400 (R2)		
	Client: SBA Network Services, Inc.	Drawn by: AGuli	App'd:
	Code: TIA/EIA-222-F	Date: 11/11/14	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. 1462G71400 DATED APRIL 14, 2014.

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.

FOR INQUIRIES REGARDING THE CONTENT OF THESE MODIFICATION DRAWINGS, PLEASE CONTACT STEVEN STRICKLAND WITH THE FDH CONSTRUCTION DEPARTMENT (919) 755-1012

PROJECT DESCRIPTION:

MODIFICATION DRAWINGS FOR A 155' MONOPOLE

SITE NAME:

DANIELSON

SITE NUMBER:

CT00302-S-02

SITE ADDRESS:

246 EAST FRANKLIN STREET
DANIELSON, CT 06239

COORDINATES:

LATITUDE: 41.7958°
LONGITUDE: -71.8703°

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 I
S-3	FLAT PLATE REINFORCEMENT DETAILS II
S-4	FLAT PLATE REINFORCEMENT DETAILS III
S-5	SPLICE PLATE INSTALLATION DETAILS
S-6	TRANSFER STIFFENER INSTALLATION DETAILS
S-7	WELD INSTALLATION DETAILS

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

STATE OF CONNECTICUT
BRADLEY R. NEWMAN
29630
LICENSED
PROFESSIONAL ENGINEER

07/08/14

BRADLEY R. NEWMAN, P.E.
CONNECTICUT LIC. NO. 29630

DRAWN BY:	KM
CHECKED BY:	DZ
ENG APPV'D:	BRN
PROJECT NO:	1466VA1400

SUBMITTALS

DATE	DESCRIPTION	REV
07/08/14	CONSTRUCTION	0

SITE NAME:
DANIELSON

SITE NUMBER:
CT00302-S-02

SITE ADDRESS:
246 EAST FRANKLIN STREET
DANIELSON, CT 06239

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
N/A	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)
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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

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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FDH ENGINEERING INNOVATION
8521 MERIDIEN DRIVE
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STATE OF CONNECTICUT
BRADLEY R. NEWMAN
29630
LICENSED
PROFESSIONAL ENGINEER
07/08/14
BRADLEY R. NEWMAN, P.E.
CONNECTICUT LIC. NO. 29630

DRAWN BY:	KM
CHECKED BY:	DZ
ENG APPV'D:	BRN
PROJECT NO:	1486VA1400

SUBMITTALS

DATE	DESCRIPTION	REV
07/08/14	CONSTRUCTION	0

SITE NAME:
DANIELSON

SITE NUMBER:
CT00302-S-02

SITE ADDRESS:
246 EAST FRANKLIN STREET
DANIELSON, CT 06239

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 STANDARDS 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.
4. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE TIA-1019-A STANDARD.

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.

STIFFENER PLATE NOTES:

1. NEW STIFFENER PLATES TO BE PLACED EQUALLY BETWEEN EXISTING ANCHOR BOLTS.
2. INSIDE POLE SHAFT TO BE SPRAYED WITH (2) COATS COLD GALVANIZATION PAINT WHERE ALL WELDED CONNECTIONS ARE PERFORMED.
3. AFTER STIFFENER INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF COLD GALVANIZATION PAINT THEN FINISH WITH (1) COAT OF COLD GALVANIZATION SPRAY.

STEEL:

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

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

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.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

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

NEW MONOPOLE REINFORCEMENT NOTES:

1. CONTRACTOR TO FIELD VERIFY PROPOSED LOCATION OF REINFORCEMENT 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 ON SHEET S-3.
4. ALL SHEAR SLEEVES TO BE HOT DIPPED GALVANIZED PRIOR TO INSTALLATION.
5. PRIOR TO FLAT PLATE INSTALLATION, SLIP JOINTS MUST BE TIGHTENED WITH A MINIMUM JACKING FORCE OF 6000 LBS.
6. NEW REINFORCEMENT TO BE INSTALLED ON THE CENTER OF PROPOSED SIDE UNLESS OTHERWISE NOTED.
7. EXISTING COAX BANDS TO BE REPLACED AFTER REINFORCEMENT INSTALLATION. NEW FLAT PLATE TO BE INSTALLED BENEATH EXISTING COAX BANDS.

CONSTRUCTION NOTES:

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

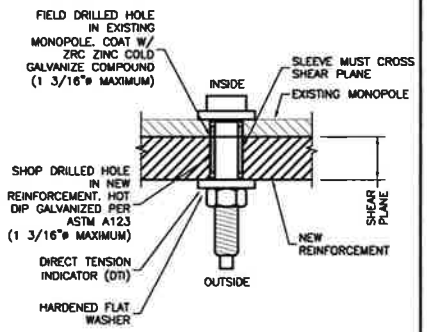
WELDING NOTES:

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.

AJAX PRETENSION JOINTS:

1. ALL AJAX BOLTS SHALL BE INSTALLED USING DIRECT TENSION INDICATORS (DTI'S) & HARDENED WASHERS. ALL AJAX M20 BOLTS WITH REAR SLEEVES SHALL BE PRETENSIONED & TIGHTENED UNTIL DIRECT TENSION INDICATOR (DTI) WASHER SHOW THAT THE PROPER BOLT TENSION HAS BEEN REACHED.
2. 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
3. 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.
4. 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.
5. CONTRACTOR SHALL FOLLOW DTI MANUFACTURES'S INSTRUCTION FOR INSTALLATION, LUBRICATION, TIGHTENING AND INSPECTION.
6. EFFECTIVE 5/30/2012: UNTIL FURTHER NOTICE, CROWN CASTLE WILL ACCEPT AJAX BOLTS TIGHTENED USING AISC "TURN-OF-NUT" METHOD. INSTALLERS SHALL FOLLOW CROWN GUIDELINES FOR AISC "TURN-OFF-NUT" METHOD AND ALSO PROVIDE COMPLETE INSPECTION DOCUMENTATION IN THE PMI. PRIOR TO STARTING WORK, CONTRACTOR SHALL CONSULT WITH CROWN ENGINEERING TO DETERMINE WHETHER THIS POLICY IS STILL IN PLACE.
7. REQUIREMENT EFFECTIVE 04/20/2013, PER CROWN CASTLE DIRECTIVE: ANY AND ALL STRUCTURAL BOLTS THAT ARE TIGHTENED TO THE PRETENSIONED CONDITION USING THE AISC "TURN-OF-NUT" TENSIONING PROCEDURE (NON-TENSION CONTROLLED ("NON-TC") BOLTS AND/OR BOLTS WITHOUT DTI'S INSTALLED) SHALL BE INSPECTED ONSITE BY AN INDEPENDENT THIRD-PARTY BOLT INSPECTOR, AS APPROVED BY CROWN. THIS INSPECTION IS REQUIRED TO BE AN ONSITE FIELD INSPECTION. THE THIRD PARTY BOLT INSPECTOR SHALL FOLLOW THE PUBLISHED CROWN CASTLE INSPECTION PROCEDURE "MI NON-TC BOLT INSPECTION", DATED APRIL 2013, THE THIRD PARTY BOLT INSPECTION SHALL PREPARE A FULLY DOCUMENTED BOLT INSPECTION REPORT, AS SPECIFIED BY CROWN, AND SHALL SUBMIT A COPY OF THE BOLT INSPECTION REPORT TO THE MI INSPECTOR, THE EOR, AND TO CROWN CASTLE.



AJAX BOLT ASSEMBLY
SCALE: NTS

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PHONE: 919-755-1012
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STATE OF CONNECTICUT
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CHECKED BY:	DZ
ENG APPV'D:	BRN
PROJECT NO:	1466VA1400

SUBMITTALS

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07/08/14	CONSTRUCTION	0

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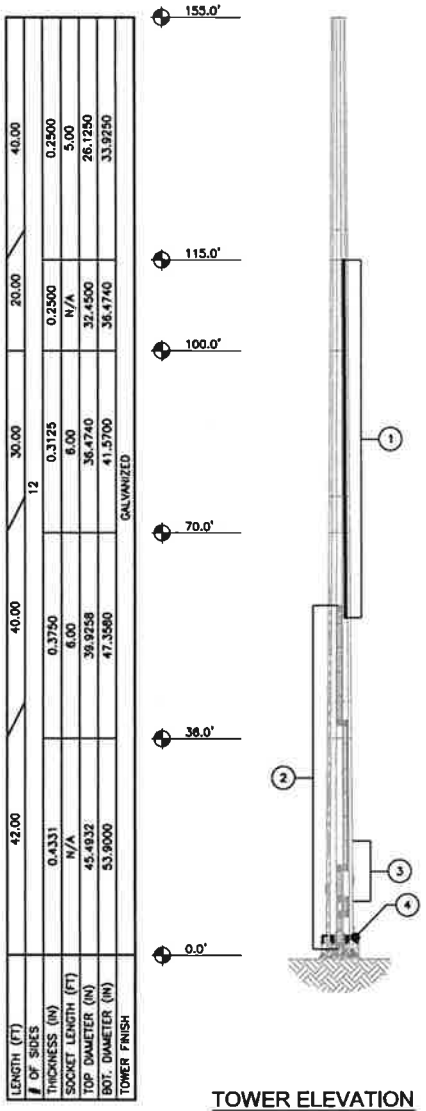
DANIELSON

SITE NUMBER:
CT00302-S-02

SITE ADDRESS:
246 EAST FRANKLIN STREET
DANIELSON, CT 06239

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-2



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-5 FOR DETAILS.	56.0±	115.0±
2	INSTALLATION OF NEW WELDS. SEE S-7 FOR DETAILS.	0.0±	58.0±
3	INSTALLATION OF NEW FLAT PLATE REINFORCEMENT. SEE S-2 THROUGH S-5 FOR DETAILS.	9.0±	19.0±
4	INSTALLATION OF NEW TRANSFER STIFFENERS. SEE S-6 FOR DETAILS.	2.0±	3.3±
TOWER FINISH: GALVANIZED			

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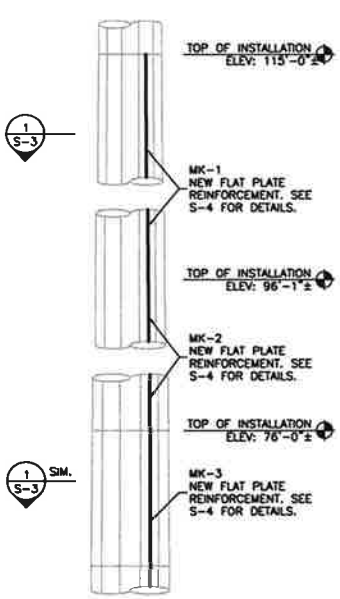
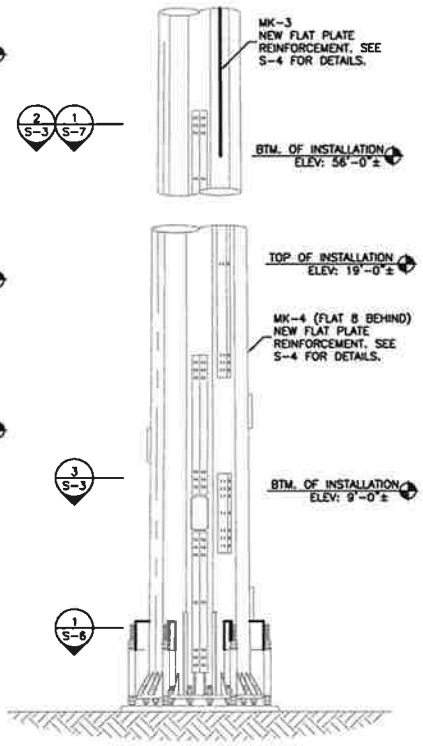
MODIFICATION SCHEDULE

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	96'-2"± TO 115'-0"±	4 - 8 - 12
SP-1	3	SPLICE PLATE	96'-1"	4 - 8 - 12
MK-2	3	FLAT PLATE REINFORCEMENT	76'-1"± TO 96-1"±	4 - 8 - 12
SP-2	3	SPLICE PLATE	76'-0"	4 - 8 - 12
MK-3	3	FLAT PLATE REINFORCEMENT	56'-0"± TO 76'-0"±	4 - 8 - 12
MK-4	1	FLAT PLATE REINFORCEMENT	9'-0"± TO 19'-0"±	8
-	240	20MM AJAX BOLTS	VARIES	-

ALL NEW FLAT PLATE STEEL TO HAVE Fy=65 KSI

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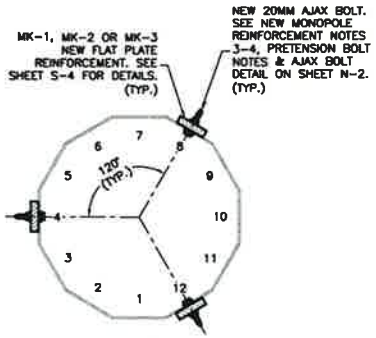
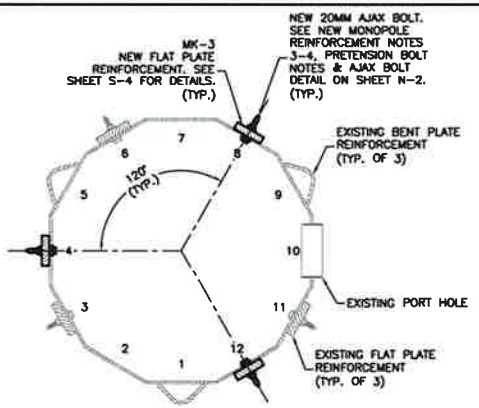
SHEET TITLE
FLAT PLATE
REINFORCEMENT
DETAILS I

SHEET NUMBER
S-2



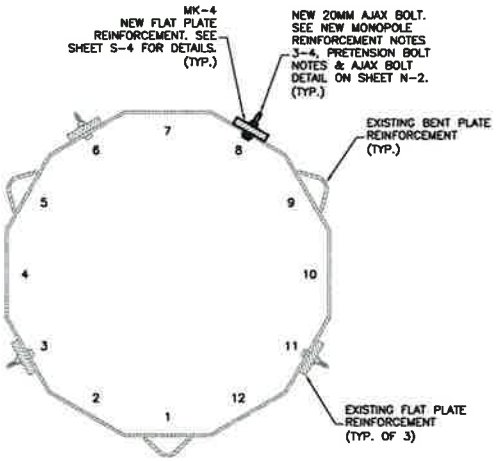
NEW FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-3 SECTION
NTS



NEW FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

2 / S-3 SECTION
NTS



NEW FLAT PLATE REINFORCEMENT LAYOUT
SECTION VIEW

3 / S-3 SECTION
NTS

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STATE OF CONNECTICUT
BRADLEY R. NEWMAN
29630
LICENSED
PROFESSIONAL ENGINEER
07/08/14

BRADLEY R. NEWMAN, P.E.
CONNECTICUT LIC. NO. 29630

DRAWN BY:	KM
CHECKED BY:	DZ
ENG APPV'D:	BRN
PROJECT NO:	1466VA1400

SUBMITTALS

DATE	DESCRIPTION	REV
07/08/14	CONSTRUCTION	0

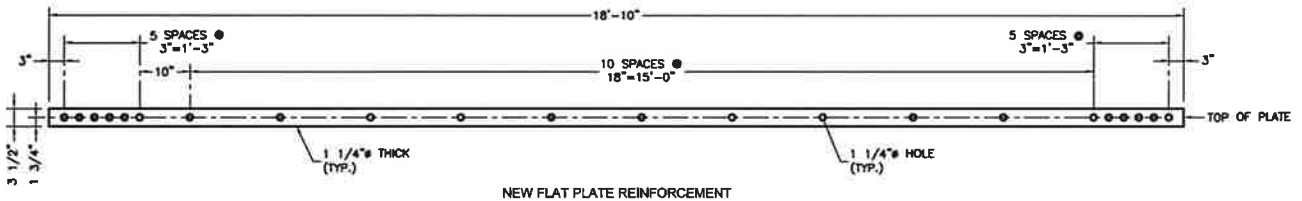
SITE NAME:
DANIELSON

SITE NUMBER:
CT00302-S-02

SITE ADDRESS:
246 EAST FRANKLIN STREET
DANIELSON, CT 06239

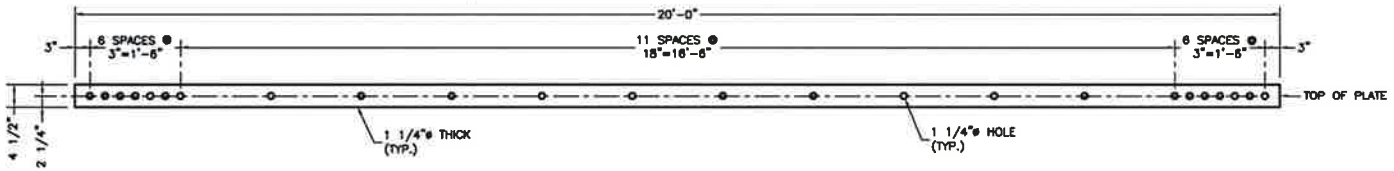
SHEET TITLE
FLAT PLATE
REINFORCEMENT
DETAILS II

SHEET NUMBER
S-3



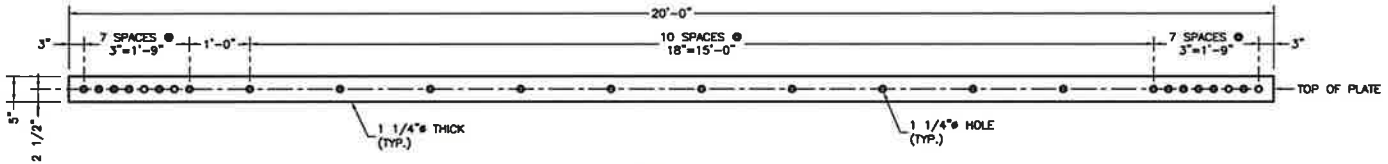
NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

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



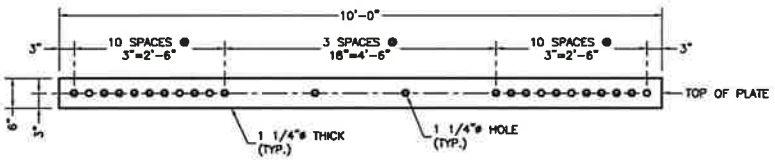
NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

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



NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

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



NEW FLAT PLATE REINFORCEMENT
FRONT VIEW

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

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BRADLEY R. NEWMAN
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BRADLEY R. NEWMAN, P.E. 07/08/14
CONNECTICUT LIC. NO. 29630

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SUBMITTALS		
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07/08/14	CONSTRUCTION	0

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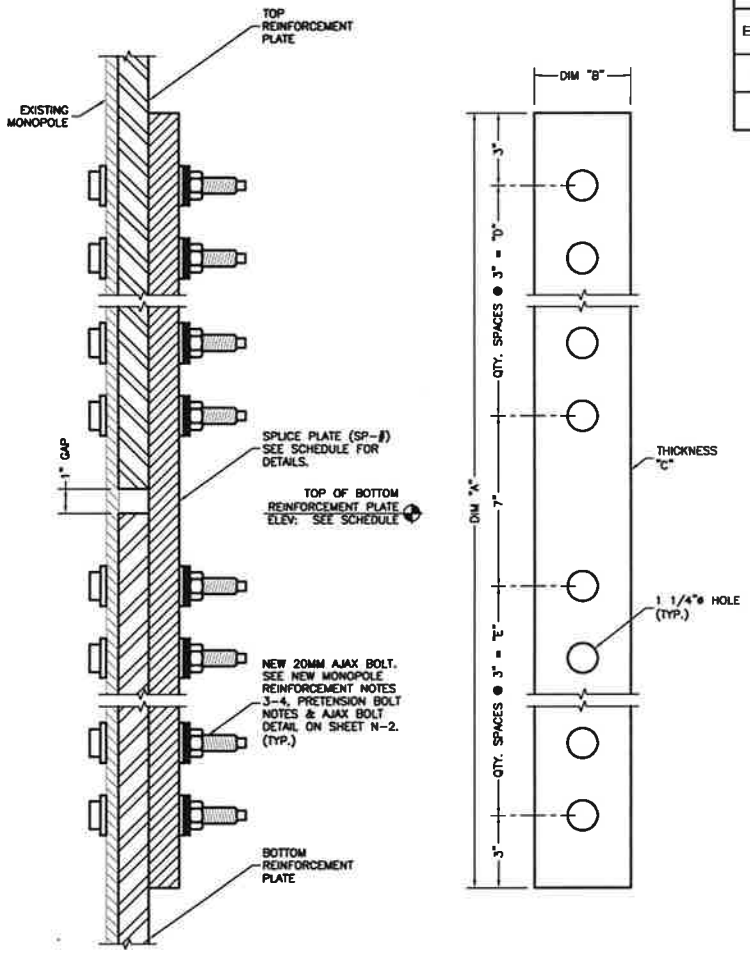
SHEET TITLE
FLAT PLATE REINFORCEMENT DETAILS III

SHEET NUMBER
S-4



SPLICE PLATE ASSEMBLY
FRONT AND SIDE VIEW

1 / S-5 DETAIL
NTS

SPLICE PLATE INSTALLATION SCHEDULE

ELEVATION	PART NO.	QUANTITY	DIMENSION "A"	DIMENSION "B"	THICKNESS "C"	QTY. SPACES @ 3" = "D"	QTY. SPACES @ 3" = "E"	TOP/BTM. REINF. PLATE
96'-1"±	SP-1	3	3'-10"	3 1/2"	1 1/4"	5 SPACES @ 3" = 1'-3"	6 SPACES @ 3" = 1'-6"	MK-1 / MK-2
76'-0"±	SP-2	3	4'-4"	4 1/2"	1 1/4"	6 SPACES @ 3" = 1'-6"	7 SPACES @ 3" = 1'-9"	MK-2 / MK-3

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ENG APPV'D:	BRN
PROJECT NO:	1486VA1400

SUBMITTALS

DATE	DESCRIPTION	REV
07/08/14	CONSTRUCTION	0

SITE NAME:
DANIELSON

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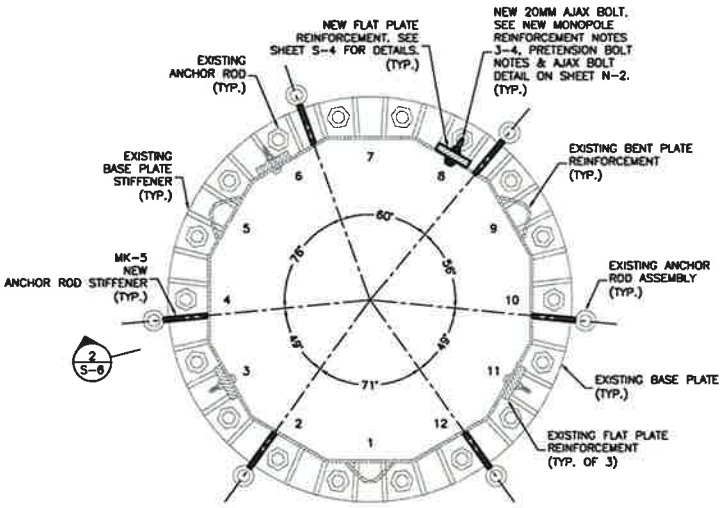
SHEET TITLE
SPLICE PLATE INSTALLATION DETAILS

SHEET NUMBER
S-5

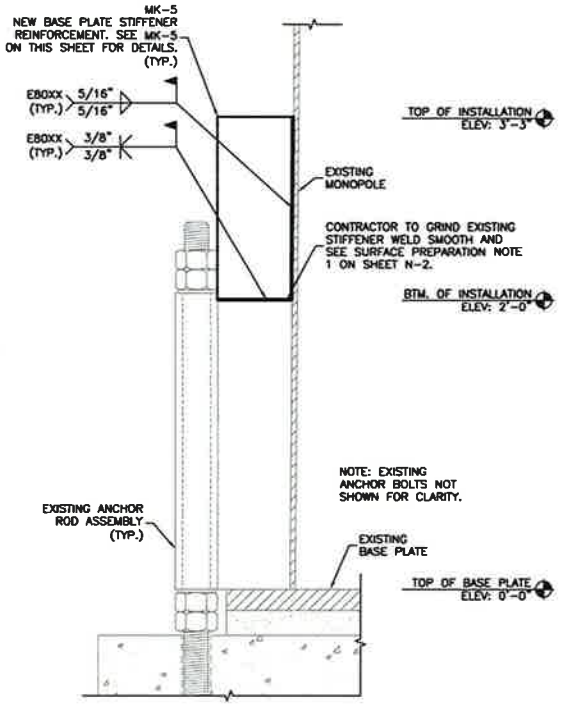
TRANSFER STIFFENER INSTALLATION SCHEDULE

PART. NO	QUANTITY	DESCRIPTION	ELEVATION
MK-5	6	TRANSFER STIFFENER	2'-0"± TO 3'-3"±
ALL TRANSFER STIFFENER STEEL TO HAVE (Fy=65KSI)			



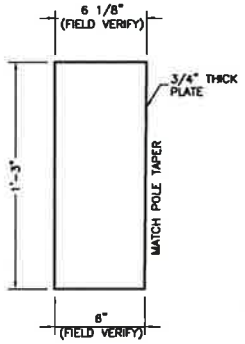
BASE PLATE STIFFENER EXTENSION LAYOUT
PLAN VIEW

1 / S-6 — SECTION
SCALE: 1/2" = 1'-0"



BASE PLATE STIFFENER EXTENSION WELD DETAIL
FRONT VIEW

2 / S-6 — DETAIL
NTS



BASE PLATE STIFFENER EXTENSION
FRONT VIEW

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

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CHECKED BY:	DZ
ENG APP'D:	BRN
PROJECT NO:	1466VA1400

SUBMITTALS

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07/08/14	CONSTRUCTION	0

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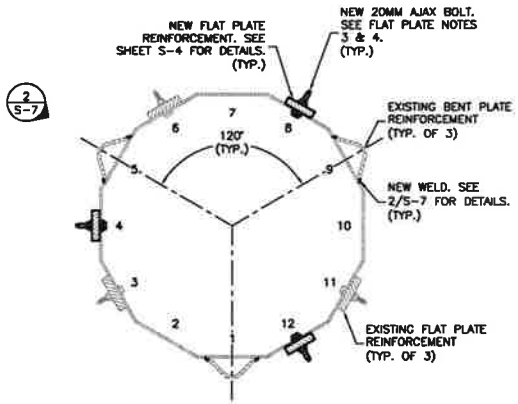
SHEET TITLE
TRANSFER STIFFENER INSTALLATION DETAILS

SHEET NUMBER
S-6

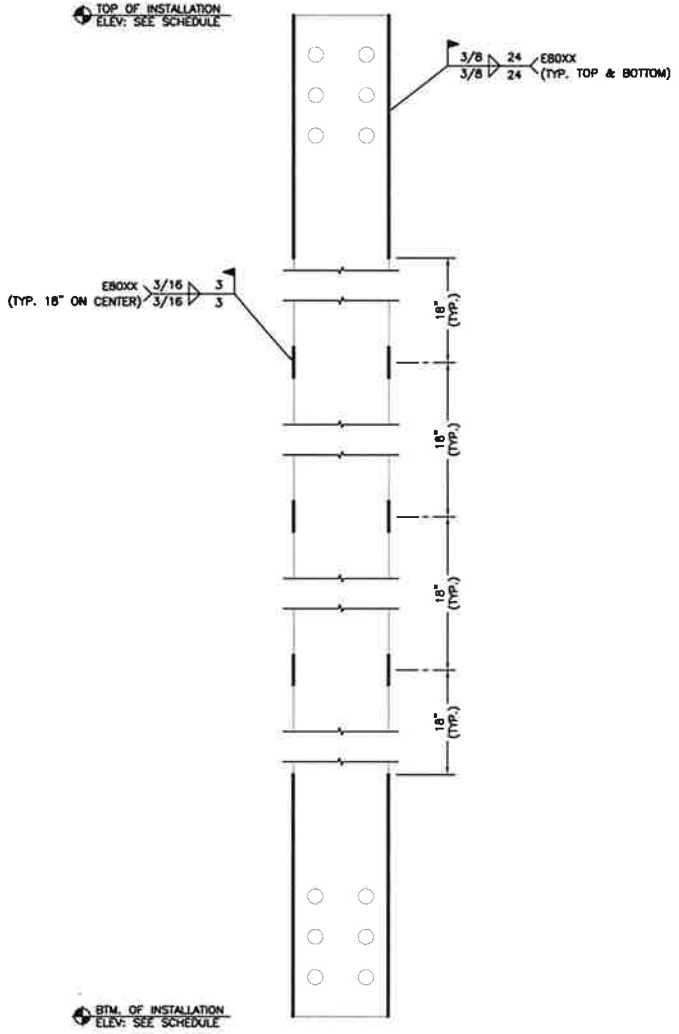
WELD INSTALLATION SCHEDULE

ELEVATION	QUANTITY	FLAT #'S
38'-0" TO 58'-0"	3	1 - 5 - 9
14'-0" TO 39'-0"	3	2 - 6 - 10
1'-0" TO 15'-0"	2	5 - 9
8'-10" TO 15'-0"	1	1
8'-3" TO 9'-9"	1	2
1'-0" TO 7'-2"	1	1



WELD INSTALLATION LAYOUT
PLAN VIEW

1 / S-7 DETAIL
SCALE: NTS



WELD INSTALLATION DETAILS
ELEVATION VIEW

2 / S-7 DETAIL
SCALE: 1" = 1'-0"

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ENG APP'D:	BRN
PROJECT NO:	1486WA1400

SUBMITTALS

DATE	DESCRIPTION	REV
07/08/14	CONSTRUCTION	0

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SITE NUMBER:
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SHEET TITLE
WELD INSTALLATION DETAILS

SHEET NUMBER
S-7