



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

Steven L. Levine
Real Estate Consultant

HAND DELIVERED

April 16, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 234 Melba Street, Milford

Dear Ms. Bachman:

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

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

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

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

The changes to the facility do not constitute modifications as defined in Connecticut General

Statutes (“C.G.S.”) Section 16-50i(d) because the general physical and environmental characteristics of the site will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not increase.
2. The proposed changes will not extend the site boundaries.
3. The proposed changes will not increase the noise level at the site boundary by six decibels or more, or to levels that exceed state and local criteria.
4. The changes will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes.
5. The proposed changes will not impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

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

Please feel free to call me at (860) 830-0380 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine
Real Estate Consultant

cc: TownCEO – Benjamin G. Blake, Mayor, Town of Milford
Property owner of Record – Melba Realty LLC
Tower Owner – Crown Castle (by email)

Attachments

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

234 Melba Street, Milford, CT
Site Number 5601
Exempt Modification Approvals: 2/03; 6/07; 12/12 (expired)

Tower Owner/Manager: Crown Castle

Land Owner of Record: Melba Realty LLC

Lease Area: The Melba Street facility was approved by local zoning as a T-Mobile site prior to 2003, and AT&T received Council approval to collocate there in 2003. The attached compound drawing from AT&T's 2003 Notice of Exempt Modification depicts the limits of T-Mobile's 20 ft x 40 ft lease at that time. By comparison with the existing 20 ft x 40 ft compound as shown in the construction drawings submitted herewith, it is clear that the compound has not increased in size since 2003. Since all proposed equipment modifications will be made either on the existing flagpole structure or at-grade within the existing compound, the proposed modifications will not extend either the lease area or the overall facility boundaries.

Equipment configuration: 125-ft Flagpole
Note: Pet. 804 replacement with a 135-ft flagpole was not implemented.

Current and/or approved: Three Thames P65X51SON antennas @ 104.5 ft c.l.
Three Thames P65X51SON antennas @ 94.5 ft c.l.
Twelve runs 7/8 inch coax
Outdoor cabinets on concrete pad

Planned Modifications: Remove 24 inch diameter radome over tower interval 85 ft to 125 ft.
Remove all AT&T antennas and associated equipment.
Install recommended structural modifications.
Install three Powerwave P45-16-XLH-RR antennas @ 104.5 ft c.l.
Install three KMW AM-X-CD-16-65-00T-RET antennas @ 94.5 ft c.l.
Install six CCI DTMABP7819VG12A TMA's @ 94.5 ft.
Install 30 inch diameter radome over tower interval 85 ft to 125 ft.
Install 3 ft x 3 ft concrete pad with two Purcell cabinets (stacked).
Install 3 ft x 7 ft concrete pad with one RxAIT cabinet.
Install 4 ft x 8 ft concrete pad with one 50 kW Generac diesel generator.
Install an additional 10 ft ice bridge at grade.
Install one unistrut frame at grade with 6 remote radio units attached.
Install one Raycap DC2-48-60-0-9E surge arrester at grade.

Power Density:

Worst-case calculations for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the tower, of approximately 15.4 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 22.7 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *							7.71
AT&T GSM **	104.5	1900 Band	3	427	0.0422	1.0000	4.22
AT&T UMTS **	94.5	880 - 894	1	500	0.0201	0.5867	3.43
Total							15.4%

* Per CSC records ** Per EM-CING-084-070517. (12/12 approval has expired.)

Proposed

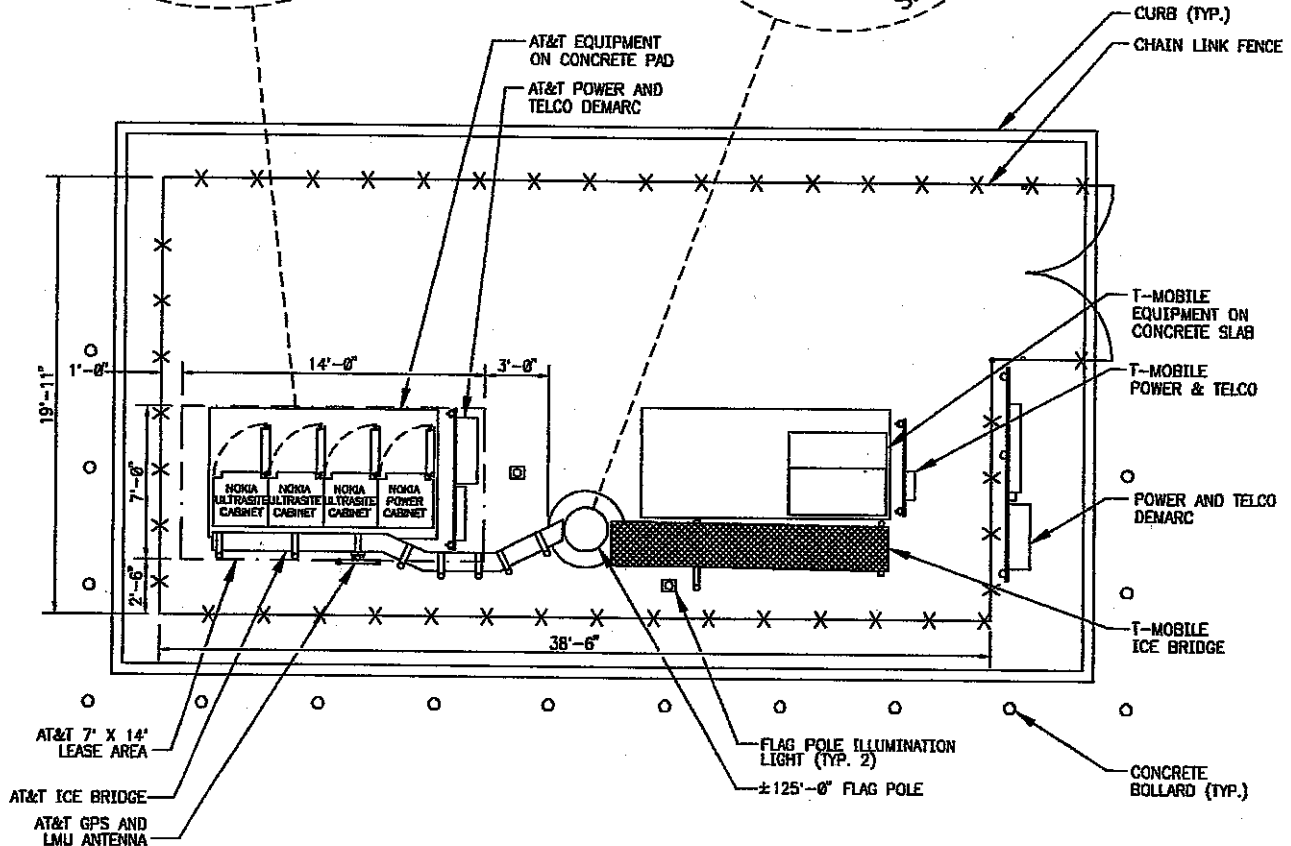
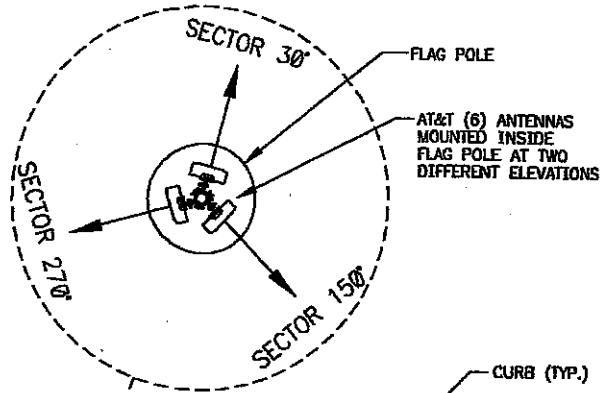
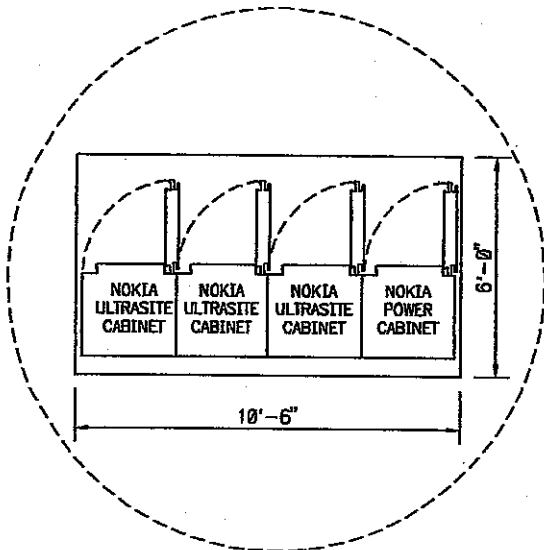
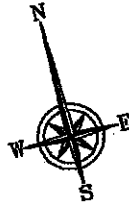
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *							7.71
AT&T LTE	104.5	700 Band	1	500	0.0165	0.4667	3.53
AT&T UMTS	94.5	880 - 894	1	500	0.0201	0.5867	3.43
AT&T UMTS	94.5	1900 Band	1	500	0.0201	1.0000	2.01
AT&T GSM	94.5	1900 Band	3	500	0.0604	1.0000	6.04
Total							22.7%

* Per CSC records

Structural information:

The attached structural analysis (Tower Engineering Professionals, 9/12/12) demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications upon completion of the recommended structural modifications described in the attachments hereto.

NOTE:
EXISTING ANTENNAS NOT
SHOWN FOR CLARITY



SITE PLAN 1
SCALE: 1/8" = 1'-0" SC1

T-MOBILE SITE NO.:
CT-11209D

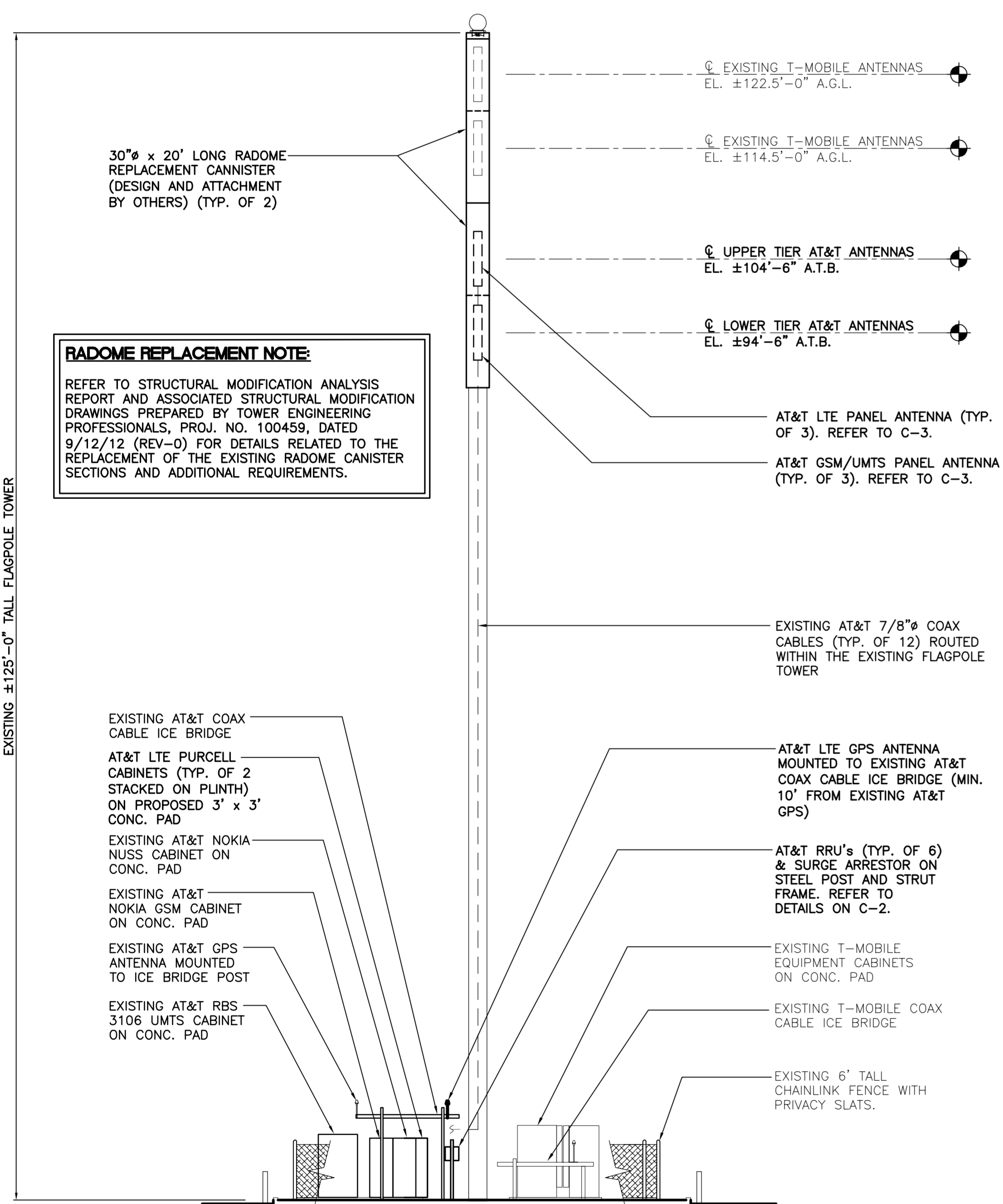
SCIENTEL
THE BLEACHERY
143 WEST STREET
NEW MILFORD, CT. 06776
Tel: (888) 210-3028
Fax: (888) 210-3047

 **AT&T**
AT&T WIRELESS PCS, LLC
149 EAST WATER STREET
SOUTH NORWALK, CT. 06855

DRAWING TITLE:
SITING COUNCIL
PROJECT INFORMATION:
MILFORD SHORELINE
CT-501
234 MELBA STREET
MILFORD, CONNECTICUT
PROPERTY OWNER:
T-MOBILE
100 FILLEY STREET
BLOOMFIELD, CT. 06002

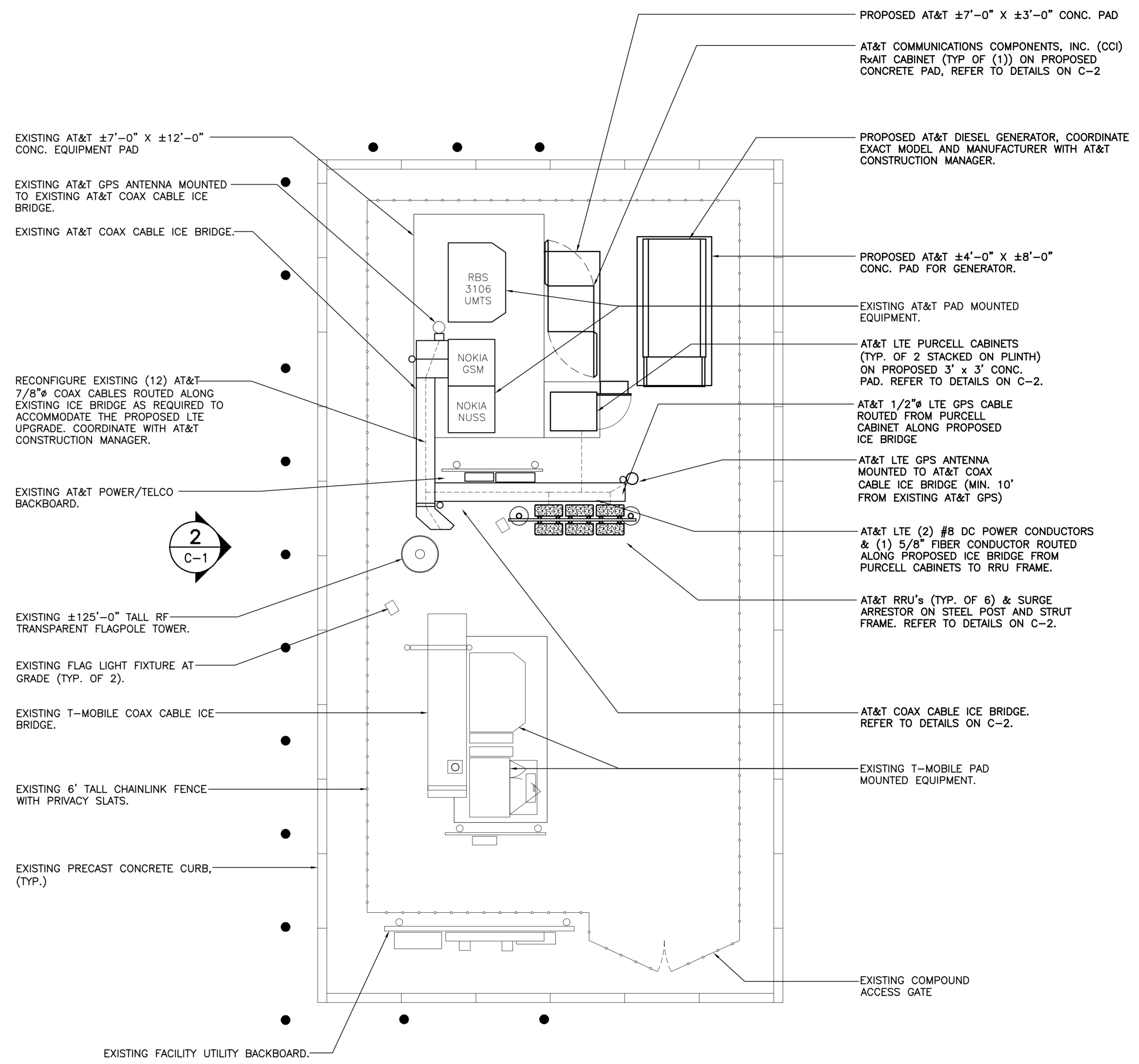
DRAWING NO. SC1	
REVISION NO. 0	DRAWN BY: JT
DATE ISSUED: 02/12/03	CHECKED BY: KW
SCALE: 1/8" = 1'-0"	APPROVED BY: SC
SHEET NO. 1 OF 2	
A/E PROJECT NO: 17447-0018	

CROWN CASTLE SITE INFORMATION:
 1. BU#: 825998
 2. SITE NAME: MILFORD SHORE

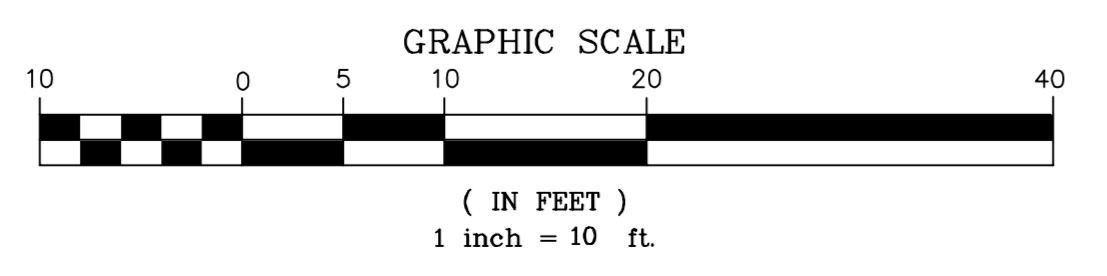


RADOME REPLACEMENT NOTE:
 REFER TO STRUCTURAL MODIFICATION ANALYSIS REPORT AND ASSOCIATED STRUCTURAL MODIFICATION DRAWINGS PREPARED BY TOWER ENGINEERING PROFESSIONALS, PROJ. NO. 100459, DATED 9/12/12 (REV-0) FOR DETAILS RELATED TO THE REPLACEMENT OF THE EXISTING RADOME CANISTER SECTIONS AND ADDITIONAL REQUIREMENTS.

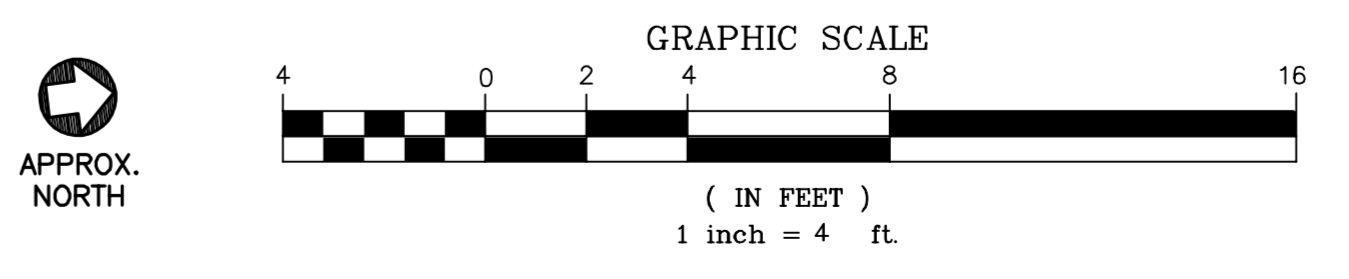
EXISTING ±125'-0" TALL FLAGPOLE TOWER



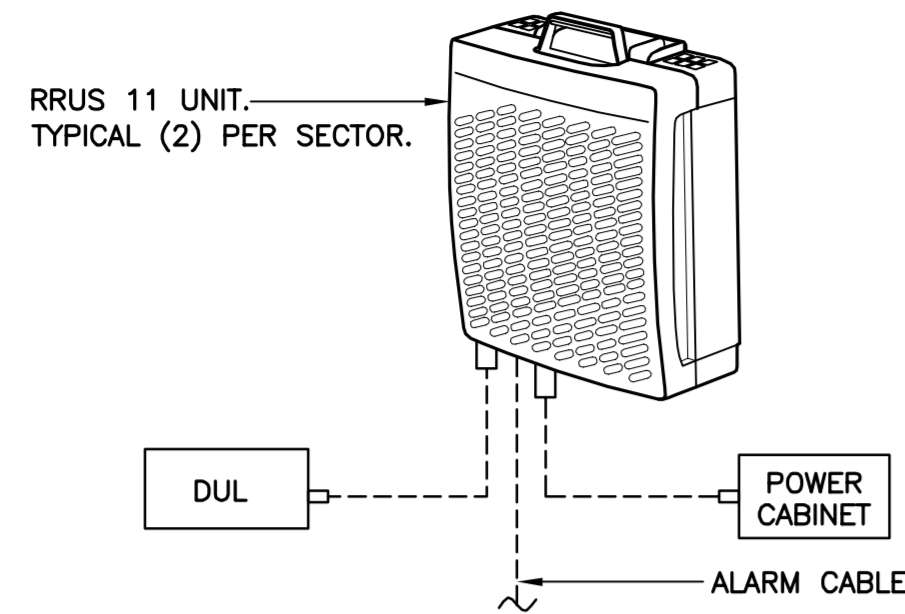
2 SOUTH ELEVATION
 C-1 SCALE: 1" = 10'-0"



1 COMPOUND PLAN
 C-1 SCALE: 1/4" = 1'-0"

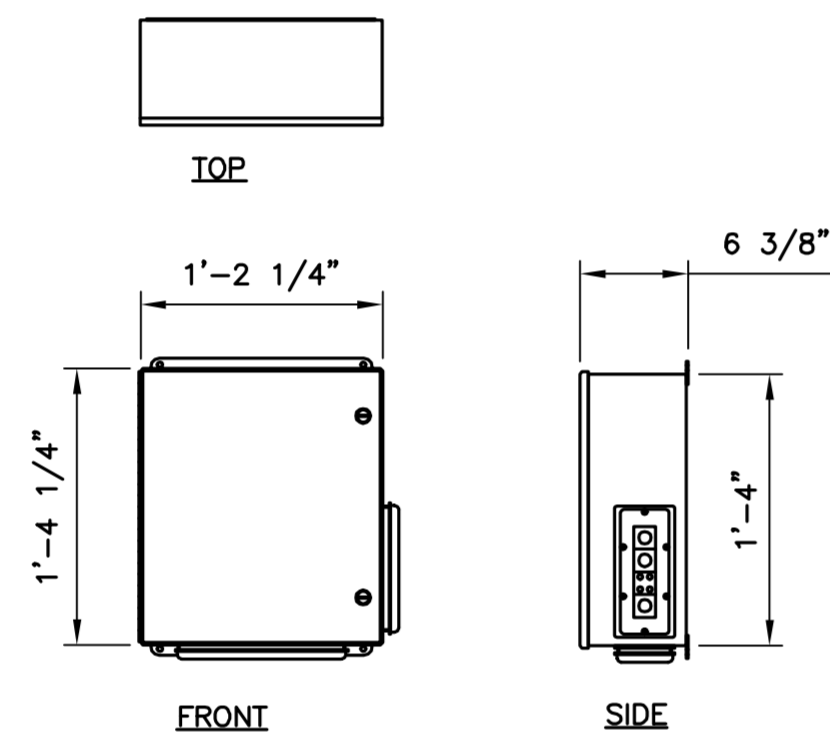


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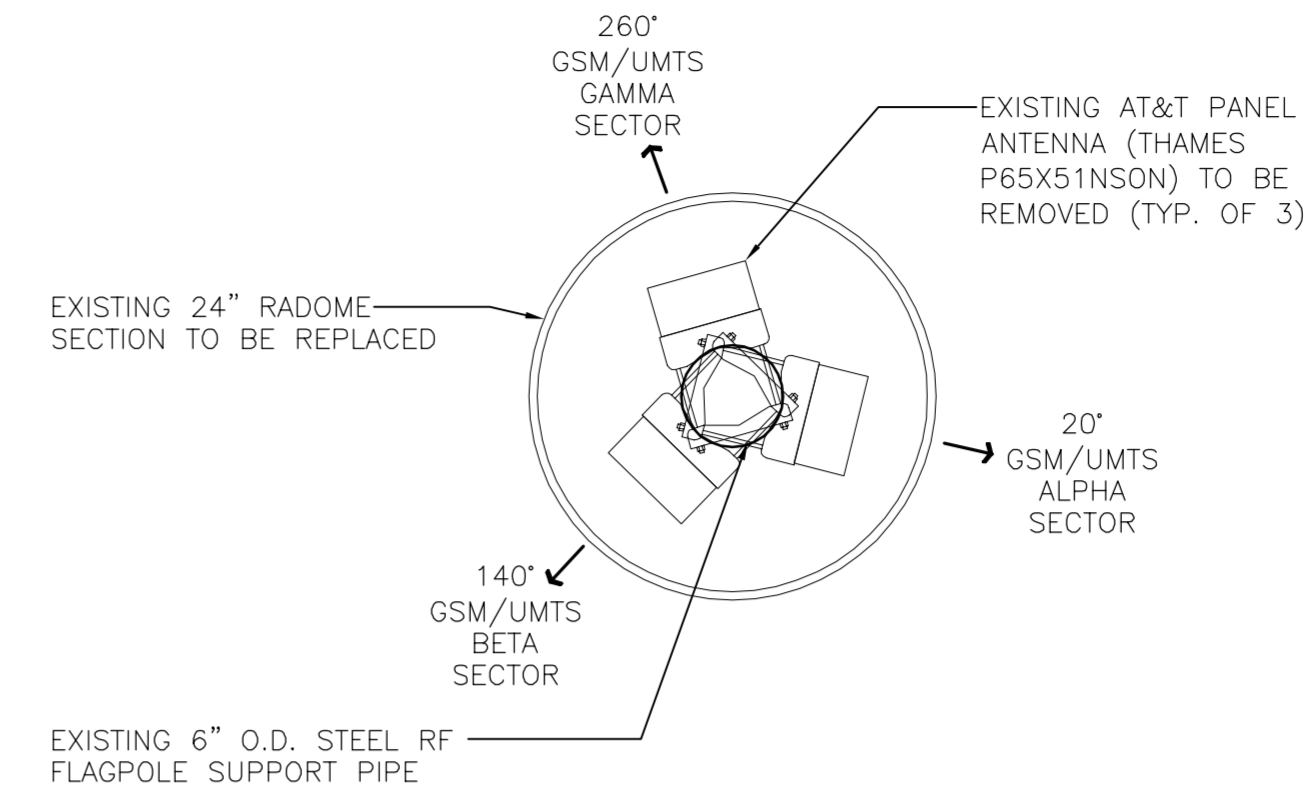
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 11	17.8"L x 17.3"W x 7.2"D	BAND 4: 44 LBS. BAND 12: 50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. SIDE: 0" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

3 RRU DETAIL
C-2 NOT TO SCALE



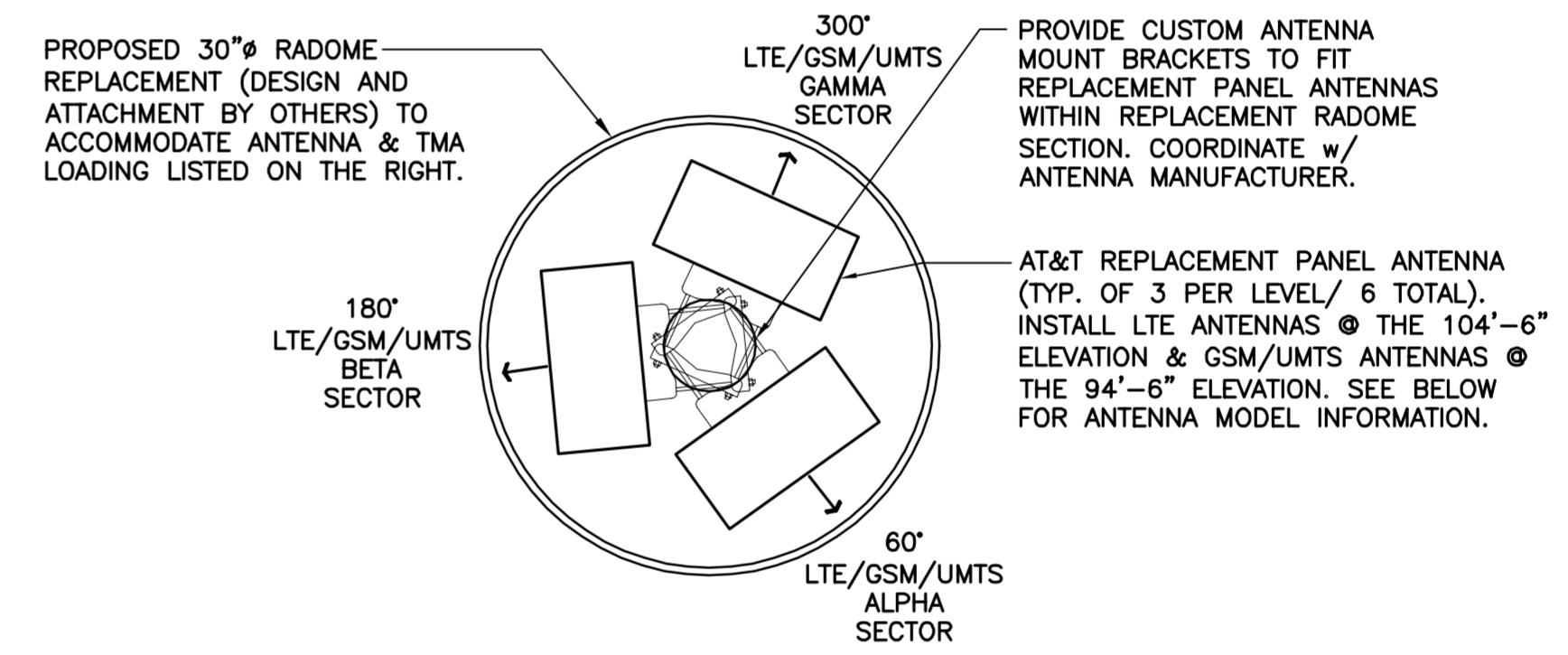
SURGE ARRESTOR				
SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
TOWER	MAKE: RAYCAP MODEL: DC8-48-60-0-1B	(1) PER SITE	SUPPORT FRAME AT GRADE, ADJACENT TO AT&T RRU'S.	38 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING. 2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.				

4 SURGE ARRESTOR DETAIL
C-3 NOT TO SCALE



NOTE:
DETAIL APPLIES @ 94'-6" & 104'-6" ELEVATIONS

1 EXISTING ANTENNA PLAN
C-3 SCALE: 1" = 1'-0" APPROX. NORTH



LTE PANEL ANTENNA POWERWAVE P45-16-XLH-RR DETAIL APPLIES @ 104'-6" ELEVATION	ADDITIONAL TMA'S PROPOSED: CCI DTMABP7819VG12A (TYP. OF 6 TOTAL)
GSM/UMTS PANEL ANTENNA KMW AM-X-CD-16-65-00T-RET DETAIL APPLIES @ 94'-6" ELEVATION	

2 PROPOSED ANTENNA PLAN
C-3 SCALE: 1" = 1'-0" APPROX. NORTH

RF EQUIPMENT NOTE:

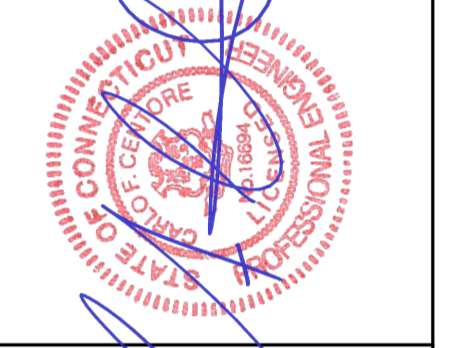
ALL RADIO FREQUENCY (RF) APPURTENANCES (eg. ANTENNAS, RRU/RRH, ETC.) AND COAX CABLES SHALL BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS REPORT PREPARED BY TOWER ENGINEERING PROFESSIONALS, PROJECT # 100459, DATED 9/2/12 (REV 0) AND FINAL AT&T RF DATA SHEET (RFDS).

CROWN CASTLE SITE INFORMATION:

- BU#: 825998
- SITE NAME: MILFORD SHORE

REV.	DATE	DATE	DATE	CHK'D BY	ISSUED FOR CONSTRUCTION - REVISED PER SA COMMENTS	ISSUED FOR CONSTRUCTION
1	04/15/15			HMR		
0	03/20/15			CAC		

PROFESSIONAL ENGINEER SEAL



CENITEK engineering
Centered on Solutions™

(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405

www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY LTE UPGRADE
CT5601
SHERMAN-ANDERSON RD EXT
234 MELBA STREET
MILFORD, CT 06460

DATE: 04/12/12
SCALE: AS NOTED
JOB NO. 15057.000

LTE TOWER DETAILS

C-3

Date: **September 12, 2012**



MeganJo MacLeod
T-Mobile Towers
12920 SE 38th Street
Bellevue, WA 98006
(425) 383-5335

Tower Engineering Professionals
3703 Junction Blvd
Raleigh, NC 27603
(919) 661-6351
whmartin@tepgroup.net

Subject: Structural Modification Analysis Report

Carrier Designation: **AT&T Reconfiguration**
Carrier Site Number: CT5601
Carrier Site Name: Unknown

T-Mobile Designation: **T-Mobile Site Number:** CT11209D
T-Mobile Site Name: Milford Shore Area

Engineering Firm Designation: **TEP Project Number:** 100459

Site Data: **234 Melba Street, Milford, New Haven County, CT 06460**
Latitude 41° 12' 36.0", Longitude -73° 1' 8.5"
125 Foot – Flagpole

Dear Ms. MacLeod,

Tower Engineering Professionals is pleased to submit this “**Structural Modification Analysis Report**” to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine structural acceptability of the structure stress level. Based on our analysis we have determined the stress level for the structure and foundation, under the following load case, to be:

LC2: Existing + Proposed Equipment w/ Proposed Modifications
Note: See Table 1 for the existing and proposed loading.

Sufficient Capacity

Structure Capacity	Controlling Component
97.3%	Pole (L5)

The analysis has been performed in accordance with the ANSI/TIA/EIA-222-F-1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, ASCE 7-05 Minimum Design Loads for Buildings and Other Structures, and the 2003 International Building Code with the 2005 Connecticut Supplement with 2009 Amendments.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 and the attached drawings for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *T-Mobile Towers*. If you have any questions or need further assistance on this or any other projects please give us a call.

Analysis prepared by: William H. Martin, P.E., S.E.

Respectfully submitted by:

Andrew T. Haldane, P.E.



1) INTRODUCTION

This tower is a 125-ft stealth flag pole tower designed by Pirod Inc. in January of 2001. The tower was originally designed for a wind speed of 85 mph and 0.5 inch of ice per the ANSI/EIA/TIA-222-F standard for the appurtenances listed in Table 2. TEP did not visit the site. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of ANSI/TIA/EIA-222-F-1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and Appendix K of the Connecticut Building Code Supplement of 110 mph (3 second gust)/95 mph (fastest mile) wind speed with no ice, 37.6 mph with 0.75 inch escalating ice thickness per ASCE 7-05, and 50 mph under service loads.

Table 1 - Existing and Proposed Antenna and Cable Information

Existing/ Proposed	Elevation (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size (in)	Coax ¹ Location	Owner/ Tenant
Existing	122.5	3	RFS APXV18-206516S-A20	Inside Flagpole	12	1 5/8	Inside	T-Mobile
		6	Twin AWS TMA's					
Existing	117.5	1	15ft x 25ft flag	-	-	-	-	-
Existing	114.5	3	RFS APXV18-206516S-A20	Inside Flagpole	12	1 5/8	Inside	T-Mobile
		3	Twin PCS TMA's					
Proposed	104.5	3	Powerwave P45-16-XLH-RR	Inside Flagpole: AT&T to increase shroud to 30" Dia.	6	7/8	Inside	AT&T
Proposed	94.5	3	KMW AM-X-CD-16-65-00T-RET		6	7/8	Inside	AT&T
		6	CCI DTMABP7819VG12A					

Notes:

- 1) See "Appendix B – Coax Configuration" for assumed feed line configuration.

Table 2 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Coax Location
125	117.5	1	Unknown	15' x 25' flag	N/A	N/A	N/A
85-125	105	1	Unknown	(4) 10' Fiberglass Shrouds	Unknown	Unknown	Unknown

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Tower and Foundation Drawings	Pirod Inc., dated January 4, 2001, File # A-118036-F-1001702	-	T-Mobile
Geotechnical Report	DR Clarence Welti, PE, PC, dated October 17, 2000	-	T-Mobile
Previous Structural Analysis	Tower Engineering Professionals, Inc., dated May 14, 2012	-	T-Mobile
Correspondence	Correspondence from T-Mobile with regards to the proposed and existing loading, SAW dated March 20, 2012	-	T-Mobile

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) The tower and foundation were built in accordance with the manufacturer's specifications.
- 2) The tower and foundation have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 1, and "Appendix B – Coax Configuration".
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by the standard.
- 5) All tower components are in sufficient condition to carry their full design capacity.
- 6) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 7) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 8) TEP assumed the following material properties:
 - a) Pipe: ASTM A500 Gr. 42
 - b) Flange Bolts: ASTM A325
 - c) Flange Plates: ASTM A572-50

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
L1	125 - 105	Pole	6 Sch 80 w/ 30" Dia Concealment	1	-1213.18	282334.72	74.2	Pass
L2	105 - 85	Pole	P8.625 x 0.875 W w/ 30" Shroud	2	-3732.52	715501.05	88.7	Pass
L3	85 - 50	Pole	P24x3/8	3	-7835.20	934939.50	54.8	Pass
L4	50 - 20	Pole	P24x3/8	4	-11643.20	934939.50	96.2	Pass
L5	20 - 0	Pole	P24x1/2	5	-14908.10	1239991.21	97.3	Pass
							Summary	
						Pole (L5)	97.3	Pass
						RATING =	97.3	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods (Existing)	-	85.2	Pass
1	Anchor Rods (Proposed)	-	94.8	Pass
-	Base Plate	-	85.2	Pass
1	Base Foundation (Soil Interaction)	-	20.2	Pass
-	Base Foundation (Structural)	-	90.4	Pass
-	Flange Connection	20	82.2	Pass
-	Flange Connection	50	83.6	Pass
-	Flange Connection	85	48.6	Pass
-	Flange Connection	105	69.3	Pass

Structure Rating (max from all components) =	97.3%
---	--------------

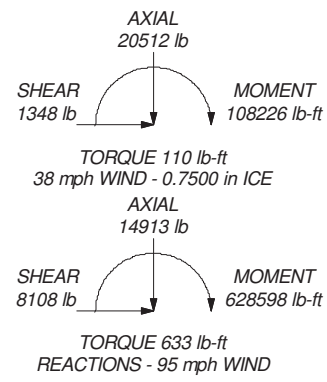
Notes:

- 1) See "Appendix C – Additional Calculations" for calculations supporting the percent capacity report

4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report, "Appendix B – Coax Configuration" or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The modifications depicted in "Appendix D – Structural Modification Drawings" shall be installed and, upon completion, inspected.

Section	1	6 Sch 80 w/ 30" Dia Concealment	20'	A500-42	572.0
Section	2	P8.625 x 0.875 W w/ 30" Shroud	20'	A500-42	1449.6
Section	3	P24x3/8	35'	A53-B-42	3314.8
Section	4	P24x3/8	30'	A53-B-42	2841.3
Section	5	P24x1/2	20'	A53-B-42	2512.2
Section					10689.8



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20-ft x 30" Concealment Cylinder	125 - 105	ETW200VS12UB	114.5
Flag 15' x 25'	125 - 110	ETW200VS12UB	114.5
APXV18-206516S-C-A20	122.5	20-ft x 30" Concealment Cylinder	105 - 85
APXV18-206516S-C-A20	122.5	P45-16-XLH-RR	104.5
APXV18-206516S-C-A20	122.5	P45-16-XLH-RR	104.5
(2) ETW200VS12UB	122.5	P45-16-XLH-RR	104.5
(2) ETW200VS12UB	122.5	AM-X-CD-16-65-00T-RET	94.5
(2) ETW200VS12UB	122.5	AM-X-CD-16-65-00T-RET	94.5
APXV18-206516S-C-A20	114.5	AM-X-CD-16-65-00T-RET	94.5
APXV18-206516S-C-A20	114.5	(2) DTMABP7819VG12A	94.5
APXV18-206516S-C-A20	114.5	(2) DTMABP7819VG12A	94.5
ETW200VS12UB	114.5	(2) DTMABP7819VG12A	94.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A53-B-42	42 ksi	63 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 95 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.
5. TOWER RATING: 97.3%

 TEP	Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350		Job: CT11209D - Milford Shore Area	
	Project: TEP# 100459		Client: T-Mobile	Drawn by: WHM
		Code: TIA/EIA-222-F	Date: 09/11/12	Scale: NTS
		Path:	Dwg No. E-1	

Q:\0459 CT11209-Structural\Structural Models & IFRS\CT11209D.dwg

STRUCTURAL MODIFICATION DRAWINGS

SITE NAME:
MILFORD SHORE AREA

T-MOBILE SITE NUMBER:
CT11209D

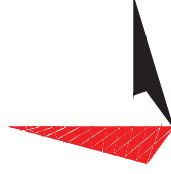
SITE ADDRESS:
**234 MELBA STREET
 MILFORD, CT 06460
 (NEW HAVEN COUNTY)**

PLANS PREPARED FOR:



12920 SE 38TH STREET
 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
 3703 JUNCTION BOULEVARD
 RALEIGH, NC 27603-5263
 OFFICE: (919) 861-6351
 www.tepgroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:
T-1

REVISION:
0

TEP #: 100459

INDEX OF SHEETS

NO.	SHEET TITLE	REV
T-1	TITLE SHEET	0
N-1	MI CHECKLIST AND NOTES	0
N-2	PROJECT NOTES I	0
N-3	PROJECT NOTES II	0
N-4	ANCHOR TESTING NOTES	0
S-1	TOWER ELEVATION AND MODIFICATION SCHEDULE	0
S-2	SECTION DETAILS	0
S-3	ANCHOR BOLT REINFORCEMENT DETAILS	0
S-4	SPLICE REINFORCEMENT DETAILS	0
S-5	PROPOSED CONGEALED SECTION DETAILS I	0
S-6	PROPOSED CONGEALED SECTION DETAILS II	0

MODIFICATION PROVISIONS

THE MODIFICATIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL MODIFICATION ANALYSIS REPORT COMPLETED BY TOWER ENGINEERING PROFESSIONALS (TEP), JOB#: 100459 DATED SEPTEMBER 12, 2012 (REV 0). THIS REPORT IS BASED ON A SPECIFIC ANTENNA LOADING AND COAX CONFIGURATION. SEE THE REPORT FOR THE ANTENNA AND COAX LOADING INFORMATION. ANY OTHER ANTENNA OR COAX CONFIGURATION REQUIRES REVISIONS TO THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY THAT THE DIMENSIONS AND PARTS OF THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.

REFERENCED DOCUMENTS

DOCUMENT	REMARKS	DATE
TOWER/FOUNDATION DESIGN DRAWINGS	PROD. INC. PROJ. #: A-118036-F-1001702	01-04-01
GEOTECHNICAL REPORT	DR. CLARENCE WELTI, P.E., P.C. T-MOBILE #: CT11209D	10-17-00

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, QUANTITIES, PART NUMBERS, AND COAX/ANTENNA PLACEMENTS PRIOR TO BIDDING ORDERING MATERIALS, AND CONSTRUCTION.

PROJECT TEAM

PROJECT CONTACT:	T-MOBILE TOWERS 12920 SE 38TH STREET BELLEVUE, WA 98006 CONTACT: MEGAN JO MACLEOD PHONE: (425) 383-5335
TOWER MANUFACTURER:	PROD. INC. 15000 WOOD DR PLYMOUTH, IN 46563 ENGINEERING DEPARTMENT CONTACT: (219) 936-4221
STRUCTURAL ENGINEER:	TOWER ENGINEERING PROFESSIONALS, INC. 3703 JUNCTION BOULEVARD RALEIGH, NC 27603 CONTACT: ANDREW T. FALDANE, P.E., C.W.I. PHONE: (919) 861-6351
GEOTECHNICAL ENGINEER:	DR. CLARENCE WELTI, P.E., P.C. 227 WILLIAMS STREET GLASTONBURY, CT 06033 CONTACT: DR. CLARENCE WELTI, P.E., P.C. PHONE: (860) 633-4623

MODIFICATION INSPECTION NOTES:

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE COMPLIANCE WITH THE MODIFICATION DRAWINGS. THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR),

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI VERIFY THE STRUCTURAL INTEGRITY OF THE MODIFICATION DESIGN. WHENEVER THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL MTS SHALL BE CONDUCTED BY AN OWNER APPROVED ENGINEERING VENDOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR THE OWNER.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI 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 THE PROJECT CONTACT LISTED ON SHEET T-1.

MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI 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 MI REPORT TO THE OWNER.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- PRE-GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS. IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTORS TO COMMENCE WITH ONE SITE VISIT.
- INSPECTIONS TO CORRECT DEFICIENCIES SHOULD BE COMPLETED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
NA	EOR APPROVED SHOP DRAWINGS
NA	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
X	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	CONTINUOUS FOUNDATION INSPECTIONS
NA	CONCRETE COMP. STRENGTH AND SLUMP TESTS
X	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
X	CONTRACTOR'S CERTIFIED WELD INSPECTION
NA	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI 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 PMI REPORT
 NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

PLANS PREPARED FOR:



12920 SE 38TH STREET
 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

PROJECT INFORMATION:

**MILFORD SHORE AREA
 SITE #: CT11209D**

234 MELBA STREET
 MILFORD, CT 06460
 (NEW HAVEN COUNTY)

PLANS PREPARED BY:



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SEAL:



September 12, 2012

0	09-12-12
REV	DATE
	ISSUED FOR:
	DRAWN BY: RST
	CHECKED BY: JAB

SHEET TITLE:

**MI CHECKLIST
 AND NOTES**

SHEET NUMBER: **N-1**

REVISION: **0**

TEP # 1004459

GENERAL NOTES:

1. ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED T-MOBILE TOWERS OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN BY ACCORDANCE WITH THE SPECIFICATIONS AND THE CITY OF WESTMINGTON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF CONNECTICUT.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE WITH THE 2005 CONNECTICUT SUPPLEMENT WITH 2009 AMENDMENTS.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING UNLESS SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
5. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE 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 AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
7. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
11. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
12. IF APPLICABLE, ALL CONCRETE WORK SHALL COMPLY TO LOCAL CODES AND THE ACI 318-05, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
13. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
14. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
15. ALL TOWER DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

PLANS PREPARED FOR:




12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PROJECT INFORMATION:

**MILFORD SHORE AREA
SITE #: CT11209D**

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 861-6351
www.teppgroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

PROJECT NOTES I

SHEET NUMBER:	REVISION:
N-2	0
TEP # : 100459	

STRUCTURAL STEEL NOTES:

- THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
- UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - STRUCTURAL STEEL:
 - PIPE/TUBE: ASTM A500-50
 - ANGLE: ASTM A36
 - PLATE: ASTM A36 (SELF SUPPORTING AND GUYED TOWERS)
 - PLATE: ASTM A572-50 (MONOPOLE)
 - ALL BOLTS, ASTM A325 (FPE) GALVANIZED HIGH STRENGTH BOLTS.
 - ALL NUTS, ASTM A307 (FPE) GALVANIZED HIGH STRENGTH NUTS.
 - ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
- ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
- HOTS SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
- HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED. AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
- REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
- A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

WELDING NOTES:

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL".
- ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
- CONTRACTOR SHALL RETAIN AN AWS CERTIFIED WELD INSPECTOR TO PERFORM VISUAL INSPECTIONS ON FIELD WELDS. A LETTER AND REPORT SHALL BE ISSUED TO THE CONTRACTOR. CONTRACTOR SHALL SUBMIT LETTER AND REPORT TO TOWER ENGINEERING PROFESSIONALS.
- GRIND THE SURFACE ADJACENT TO THE WELD FOR A DISTANCE OF 2" MINIMUM ALL AROUND. GRIND THE SURFACE OF THE ROD TO BE INSTALLED FOR A DISTANCE OF 2" MINIMUM ALL AROUND THE AREA TO BE WELDED. ENSURE BOTH AREAS ARE 100% FREE OF ALL GALVANIZING. SURFACES TO BE WELDED SHALL BE FREE FROM SCALE, SLAG, RUST, MOISTURE, GREASE OR ANY OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.
- DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW OF: WHEN THE TEMPERATURE IS BETWEEN 0°F AND 32°F: PREHEAT AND MAINTAIN THE STEEL IN THE VICINITY OF THE WELD AREA AT 70°F DURING THE WELDING PROCESS.
- DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
- FOR ALL WELDING, USE E70XX ELECTRODES.
- AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OR GRINDING SHALL BE REPAIRED. THE FINISHED COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 3 MILS.

BOLT TIGHTENING PROCEDURE:

- TIGHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.
 - BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS 2.25 TO 4.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS 2.75 TO 5.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS 3.25 TO 6.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS 3.75 TO 7.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
 - BOLTS 4.25 TO 8.0 INCH LENGTH
 - 1/2" TURN BEYOND SNUG TIGHT
 - 3/4" TURN BEYOND SNUG TIGHT
 - 1" TURN BEYOND SNUG TIGHT
- CONNECTION BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:
 - FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.
- 8.2.1 TURN-OF-THE-NUT TIGHTENING**

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT IN A MANNER THAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS.
- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

NOMINAL HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
1/2"	3/16"	3/16" X 1/8"
5/8"	1/8"	1/8" X 3/16"
3/4"	1/8"	1/8" X 1"
7/8"	1/8"	1/8" X 1/8"
1"	1/8"	1/8" X 1/8"

— DIMENSIONS GIVEN IN INCHES

BOLT EDGE AND SPACING

BOLT DIAMETER	MIN. EDGE	SPACING
1/2"	7/8"	1 1/2"
5/8"	1"	1 7/8"
3/4"	1 1/4"	2 1/4"
7/8"	1 1/2"	2 3/4"
1"	1 3/4"	3"

MIN. — DIMENSIONS
EDGE — GIVEN IN INCHES

SPACING

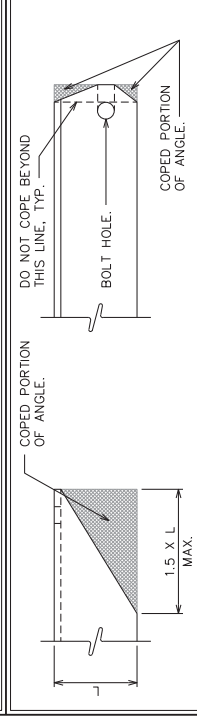
WORKABLE GAGES

LEG	4	3 1/2"	3	2 1/2"	2	1 3/4"	1 1/2"	1
G	2 1/2"	2	1 3/4"	1 1/2"	1 1/8"	1 1/4"	1 1/8"	1

"G"

- WORKABLE GAGES GIVEN IN INCHES
- MATCH EXISTING WHEN APPLICABLE

ALLOWABLE ANGLE COPE



PLANS PREPARED FOR:



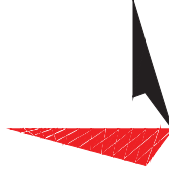
12920 SE 36TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PROJECT INFORMATION:

MILFORD SHORE AREA
SITE #: CT11209D

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 861-6351
www.tegroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:


DRAWN BY:	RST	CHECKED BY:	JAB
SHEET TITLE:			

PROJECT NOTES II

SHEET NUMBER:	REVISION:
N-3	0
TEP #:	100459

PLANS PREPARED FOR:
T-Mobile TOWERS
 12920 SE 38TH STREET
 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

PROJECT INFORMATION:
MILFORD SHORE AREA
SITE #: CT11209D
 234 MELBA STREET
 MILFORD, CT 06460
 (NEW HAVEN COUNTY)

PLANS PREPARED BY:

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SEAL:

 September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:
ANCHOR TESTING NOTES

SHEET NUMBER: **N-4**
 REVISION: **0**
 TEP #: 1004459

ANCHOR TESTING PROCEDURE:

REQUIREMENTS:

1. THE ANCHORS SHALL BE INSTALLED PER THE ENGINEER OF RECORD'S DRAWINGS AND SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE ALLOWED TO CURE FOR 28 DAYS PRIOR TO TESTING. EPOXY AGENTS SHALL BE ALLOWED TO CURE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION TO ACHIEVE ITS FULL EFFECTIVE LOAD CAPACITY.
3. STATIC LOAD TESTS SHALL BE PERFORMED PER ASTM E488-96 (REAPPROVED 2003).
4. FORCE MEASUREMENT SYSTEMS SHALL BE CALIBRATED IN ACCORDANCE WITH ASTM E407, STANDARD PRACTICES FOR FORCE VERIFICATION OF TESTING METHODS.

TEST PARAMETERS:

1. 50% OF THE POST-INSTALLED ANCHOR RODS OR A TOTAL OF 4, WHICHEVER IS GREATER, SHALL BE TESTED. IF ANY ONE OF THE ANCHOR RODS FAIL THE TEST, CONTACT THE ENGINEER OF RECORD TO DETERMINE IF 100% OF THE REMAINING POST-INSTALLED ANCHORS SHALL BE TESTED.
2. SUITABLE EQUIPMENT SHALL BE USED TO PERFORM TESTS REQUIRED TO VERIFY CORRECT INSTALLATION AND PROVIDE PROOF LOADS AND DISPLACEMENT TESTS ON POST-INSTALLED ANCHOR RODS. THE EQUIPMENT SHALL BE CAPABLE OF MEASURING THE FORCES TO WITHIN 2% ± OF THE APPLIED LOAD.
3. THE TEST SYSTEM SUPPORT SHALL BE OF SUFFICIENT SIZE AND DESIGN TO PREVENT DAMAGE TO THE SURROUNDING STRUCTURE ELEMENTS, EQUIPMENT AND FOUNDATION.
4. TEST SYSTEM USED SHALL HAVE TWO (2) PRESSURE GAUGES IN SERIES TO ENSURE PROPER GAUGE FUNCTION.
5. FORCES SHALL BE APPLIED THROUGH THE CENTER OF AND IN ALIGNMENT WITH THE ANCHOR ROD.
6. INCREASE APPLIED LOADS TO THE MAXIMUM SPECIFIED TARGET TENSION WITHOUT DISPLACEMENT FAILURE. DISPLACEMENT FAILURE IS PROVIDED BY CONTINUOUS DISPLACEMENT ASSOCIATED WITH A CONSTANT OR DECREASING APPLIED LOAD.
7. APPLY AN INITIAL LOAD OF 5% OF THE TARGET TENSION TO BRING ALL OF THE TEST SYSTEM COMPONENTS INTO FULL BEARING PRIOR TO BEGINNING THE TEST.
8. ADDITIONAL LOADS SHALL BE APPLIED IN INCREMENTS NOT TO EXCEED 15% OF TARGET TENSION AND EACH INCREMENT SHALL BE MAINTAINED FOR A 2-MINUTE PERIOD.
9. MAINTAIN COMPLETE LOAD-DISPLACEMENT RECORDS THROUGHOUT THE TEST. THE DATA RECORDS SHALL INCLUDE A TIME RECORD OF THE BEGINNING AND END OF EACH INCREMENT OF CONSTANT LOAD.

REMEDIAL ACTION FOR ANCHOR ROD FAILURE:

1. WITH THE APPROVAL OF THE ENGINEER OF RECORD, RE-DRILL THE HOLE AND INSTALL EITHER NEW ANCHOR ROD OR RECONDITION EXISTING ANCHOR ROD USING THE INSTALLATION MATERIALS SPECIFIED. IF THE EXISTING ROD IS REINSTALLED THE THREADS SHALL BE CLEANED TO THEIR ORIGINAL CONDITION. THIS INCLUDES RE-GALVANIZING, IF APPLICABLE.

REPORT OF RESULTS:

1. THE RESULTS OF THE TEST SHALL BE DOCUMENTED AND INCORPORATED INTO A POST MODIFICATION INSPECTION REPORT. THE FOLLOWING DATA SHALL BE INCLUDED:
 - A. DATE OF TEST
 - B. TEST COMPANY AND CONTACT NAME
 - C. TEST EQUIPMENT USED INCLUDING 6 MONTH CALIBRATION CERTIFICATION
 - D. LOCATION OF ALL POST-INSTALLED ANCHORS TESTED
 - E. SIZE AND GRADE OF ANCHOR BOLTS TESTED
 - F. EPOXY AGENT OR CEMENTITIOUS GROUT USED
 - G. DRAWINGS, SKETCHES AND PHOTOGRAPHS
 - H. WEATHER CONDITIONS AND TEMPERATURE
 - I. SUMMARY OF THE TEST FINDING INCLUDING LOAD-DISPLACEMENT DATA TABLE
 - J. ADDITIONAL OBSERVATIONS AND COMMENTS

PLANS PREPARED FOR:

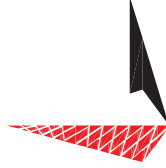


12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PROJECT INFORMATION:

MILFORD SHORE AREA
SITE #: CT11209D
234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27803-8283
OFFICE: (919) 861-6861
www.tegroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		
CHECKED BY: JAB		

SHEET TITLE:

TOWER ELEVATION AND MODIFICATION SCHEDULE

SHEET NUMBER:	REVISION:
S-1	0
TEP #:	100459

MODIFICATION SCHEDULE

NO.	MODIFICATION DESCRIPTION	ELEVATION (FT.)
1	INSTALL PROPOSED ANCHOR BOLTS AND STIFFENERS. SEE SHEETS S-2 AND S-3 FOR DETAILS.	0
2	INSTALL PROPOSED SPLICE REINFORCEMENT. SEE SHEET S-4 FOR DETAILS.	17.8 - 22.3
3	REMOVE AND REPLACE THE EXISTING CONCEALMENT SECTION. SEE SHEETS S-5 AND S-6 FOR DETAILS.	85 - 125
4	MODIFICATION INSPECTION BY TEP. CONTACT TEP FOR FEE: PM@TEPGROUP.NET	-

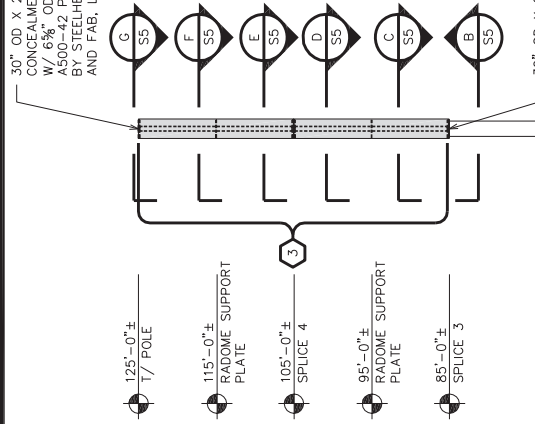
NOTES:

- IT'S THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE THE MODIFICATION INSPECTOR/ENGINEER OF RECORD WITH A SEALED CERTIFIED WELD INSPECTION REPORT. THIS REPORT SHALL DOCUMENT THE ENTIRE WELDING PROCESS (PRE/DURING/POST) WITH PROPER PHOTOS. WELDING SHALL CONFORM TO AWS D1.1/S1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL". FOR ADDITIONAL NOTES, SEE WELDING NOTES.
- NDE OF THE CIRCUMFERENTIAL WELD OF THE BASE PLATE TO THE SHAFT CONNECTION IS REQUIRED. PLEASE SEE ENG-SOW-1033 REQUIREMENTS FOR MONOPOLE BASEPLATE TO PREVENT CONNECTION FAILURE. NOTIFY THE EOR AND T-MOBILE TOWERS ENGINEERING IMMEDIATELY IF ANY CRACKS ARE SUSPECTED OR OBSERVED. BEFORE THE ANY CRACKS ARE SUSPECTED OR OBSERVED, THE WELD SHALL BE FULLY REWELDED TO THE FULL PENETRATION WELDING TO THE BASE PLATE. MODIFICATIONS THAT HAVE BEEN WELDED TO THE BASE PLATE PART OF THIS ACTIVE REINFORCEMENT DESIGN SHALL BE INCLUDED IN THE NDE SCOPE OF WORK.

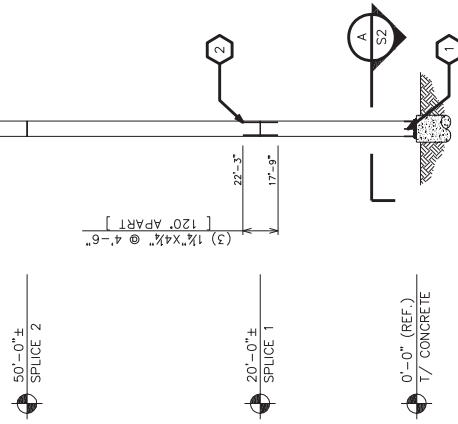
ATTENTION

EXISTING ANTENNAS, COAX, ANTENNA MOUNTS, AND OTHER APPURTENANCES WILL NEED TO BE REMOVED IN ORDER TO INSTALL THE PROPOSED TOWER MODIFICATIONS. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE EXISTING CARRIERS ON THE TOWER FOR REMOVAL OF THE EXISTING EQUIPMENT AND REINSTALLATION OF THE REMOVED EQUIPMENT ONCE CONSTRUCTION IS COMPLETE. IT SHOULD BE NOTED THAT THE TYPE OF REMOVAL OF THE EXISTING EQUIPMENT WILL VARY. ANTENNA MOUNTS BE INSTALLED OVER ANY CLEARANCE ISSUES THAT MAY ARISE FROM THE INSTALLATION OF THE MODIFICATIONS. IF THIS IS THE CASE THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD (TEP) AND OBTAIN WRITTEN AUTHORIZATION OF THE PROPOSED REPLACEMENT ANTENNA MOUNTS PRIOR TO INSTALLATION.

30" OD X 20' ANT. CONCEALMENT SHROUD W/ 6% OD X 0.432W A500-42 PIPE SUPPLIED BY STEELHEAD METAL AND FAB, LLC.



30" OD X 20' ANT. CONCEALMENT SHROUD W/ 8% OD X 0.875W A500-42 PIPE SUPPLIED BY STEELHEAD METAL AND FAB, LLC.

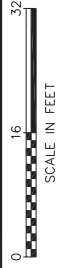


TOWER ELEVATION (PROPOSED)

SCALE: 1/8" = 1'-0"

TOWER ELEVATION (EXISTING)

SCALE: 1/8" = 1'-0"



ATTENTION

- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING THE EXISTING REINFORCING BARS DURING DRILLING OPERATIONS. CONTACT TEP IMMEDIATELY IF THE EXISTING REINFORCING BARS ARE ENCOUNTERED AND INTERFERE WITH THE PROPOSED MODIFICATION. MINOR ADJUSTMENT TO THE PROPOSED LOCATION OF THE NEW ANCHORS MAY BE REQUIRED.
- NEW ANCHOR ROD REINFORCING SHALL BE INSTALLED PER MFG'S RECOMMENDATIONS. ONCE ALL EPOXY HAS CURED THE NEW ANCHOR BOLT REINFORCING SHALL BE PROOF LOADED TO 50.9 KIPS. SEE SHEET N-4 FOR TESTING PROCEDURE. TIGHTEN ALL HEAVY HEX NUTS TO SNUG TIGHT.

NOTES:

1. FOR ORDERING HILTI PRODUCTS CONTACT HILTI, INC. AT (800) 879-8000.

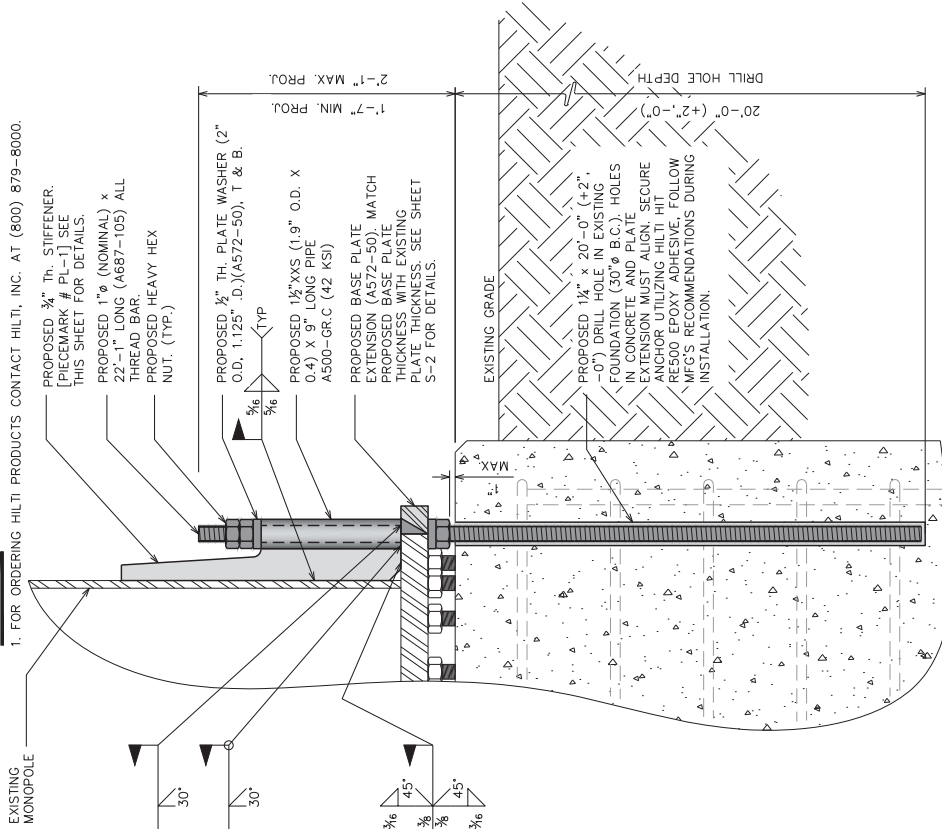
PROPOSED $\frac{3}{4}$ " TH. STIFFENER.
[PIECEMARK # PL-1] SEE
THIS SHEET FOR DETAILS.

PROPOSED 1"Ø (NOMINAL) x
22"-1" LONG (A687-105) ALL
THREAD BAR.
PROPOSED HEAVY HEX
NUT. (TYP.)

PROPOSED $\frac{1}{2}$ " TH. PLATE WASHER (2"
O.D., 1.125" D.)(A572-50), T & B.

PROPOSED 1 $\frac{1}{2}$ "xXS (1.9" O.D. x
0.4) x 9" LONG PIPE
A500-GR.C (42 KSI)

PROPOSED BASE PLATE
EXTENSION (A572-50). MATCH
THICKNESS WITH EXISTING
BASE PLATE.
PLATE THICKNESS: SEE SHEET
S-2 FOR DETAILS.



SECTION

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

(H)

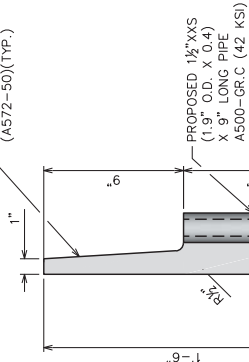
SCALE IN FEET

2

PIECEMARK#: PL-1

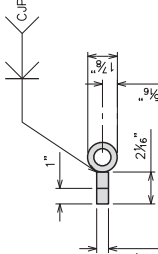
SCALE: 1/2" = 1'-0"

PROPOSED PL $\frac{3}{4}$ " TH.
(A572-50)(TYP.)



ELEVATION VIEW

PLAN VIEW



SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

**ANCHOR BOLT
REINFORCEMENT
DETAILS**

SHEET NUMBER:

S-3

REVISION:

0

TEP # 100459

PLANS PREPARED FOR:

**T-Mobile
TOWERS**
12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PROJECT INFORMATION:

**MILFORD SHORE AREA
SITE #: CT11209D**

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

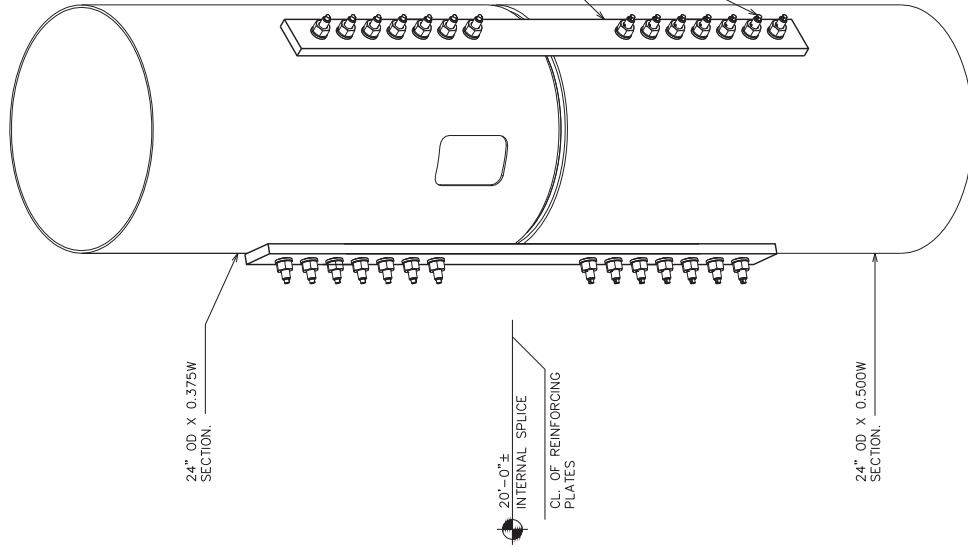
PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tegroup.net

NOTE:

- 1. FOR ORDERING AJAX FASTENERS CONTACT IRA SVENDSGAARD AND ASSOCIATES, (530) 647-8225.

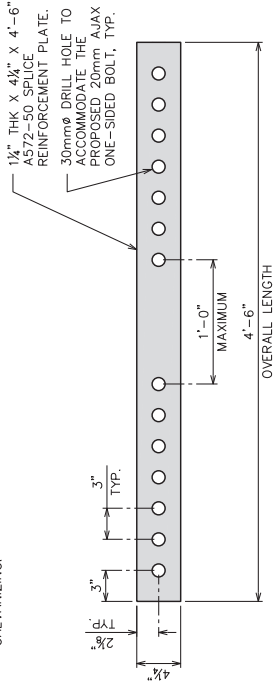


SPLICE REINFORCEMENT

SCALE: N.T.S.

NOTES:

- 1. AJAX FASTENERS: (530) 647-8225 (PETERS@RASVENS.COM)
- 2. HOLE DIMENSIONS GIVEN DO NOT INCLUDE A TOLERANCE FOR GALVANIZING.



REINFORCEMENT PLATE DETAIL

SCALE: 1" = 1'-0"



PLANS PREPARED FOR:

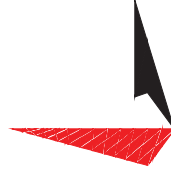


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SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS	
REV	DATE	ISSUED FOR:	
DRAWN BY: WFM		CHECKED BY: JAB	

SHEET TITLE:

**SPLICE
REINFORCEMENT
DETAILS**

SHEET NUMBER:

S-4

REVISION:

0

TEP # 1004459

PLANS PREPARED FOR:



12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

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REV	DATE	ISSUED FOR:	
DRAWN BY: RST		CHECKED BY: JAB	

SHEET TITLE:

**PROPOSED
CONCEALED SECTION
DETAILS I**

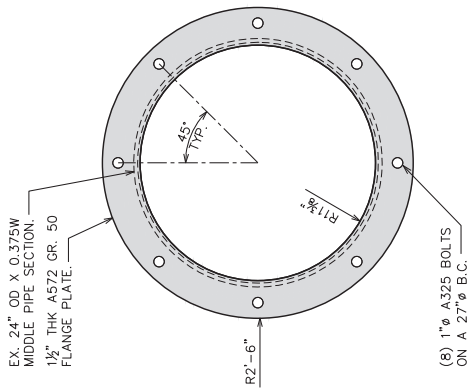
SHEET NUMBER:

S-5

REVISION:

0

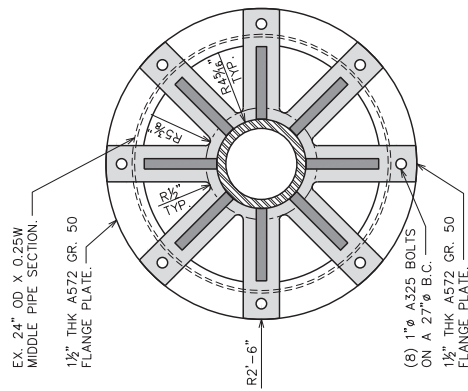
TEP # 1004459



NEW TOP FLANGE DETAIL - 85'

SCALE: 1" = 1'-0"

B



BOLTED SPOKE FLANGE DETAIL - 85'

SCALE: 1" = 1'-0"

C



PLANS PREPARED FOR:



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0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

**PROPOSED
CONCEALED SECTION
DETAILS II**

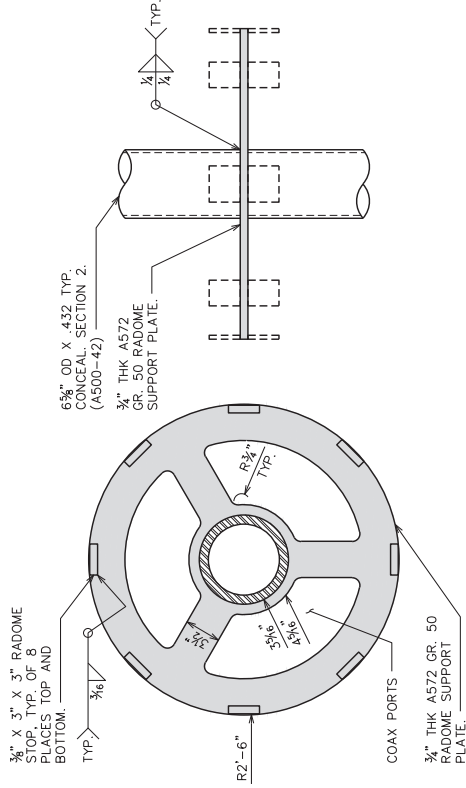
SHEET NUMBER:

S-6

REVISION:

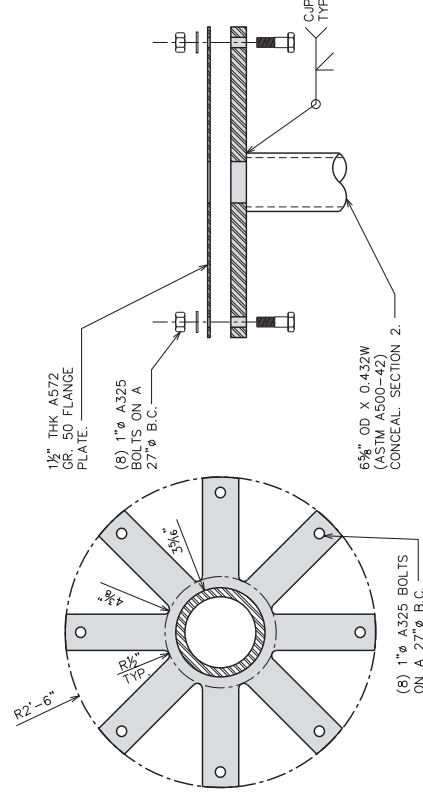
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TEP # 100459



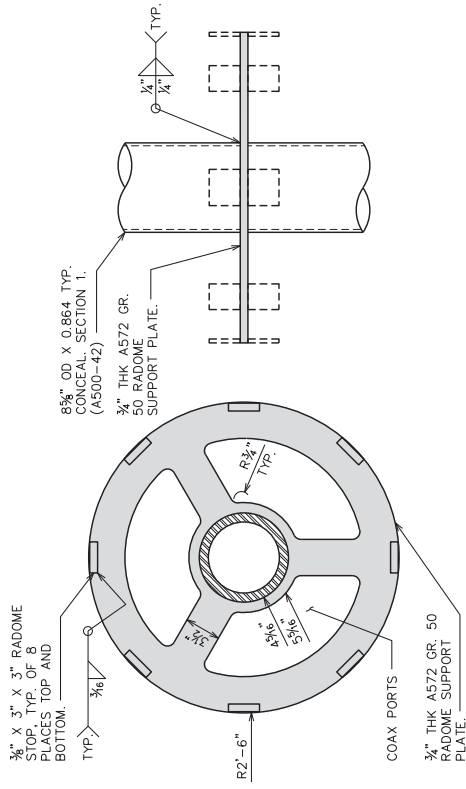
RADOME SUPPORT PLATE - 115'

SCALE: 1" = 1'-0"



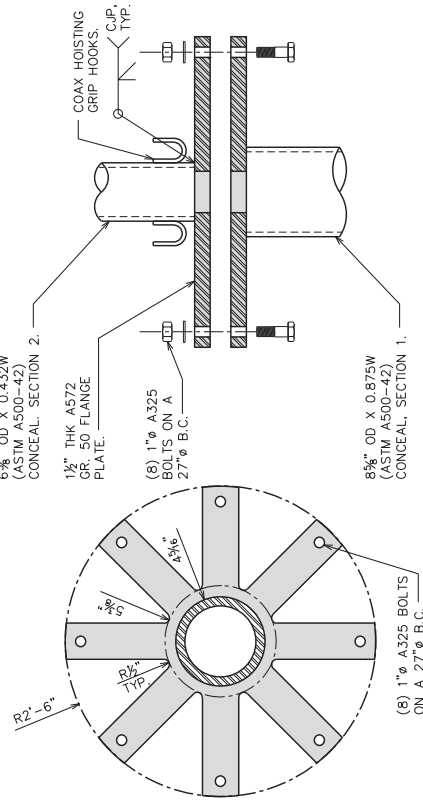
BOLTED SPOKE FLANGE DETAIL - 125'

SCALE: 1" = 1'-0"



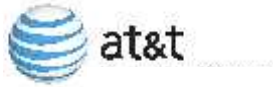
RADOME SUPPORT PLATE - 95'

SCALE: 1" = 1'-0"



BOLTED SPOKE FLANGE DETAIL - 105'

SCALE: 1" = 1'-0"



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

Steven L. Levine
Real Estate Consultant

April 16, 2015

Honorable Benjamin G. Blake
Mayor, Town of Milford
Parsons Complex 70 West River Street
Milford, Connecticut 06460

Re: Existing Telecommunications Facility – 234 Melba Street, Milford

Dear Mayor Blake:

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

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

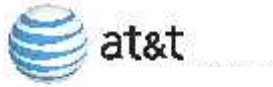
The enclosed Notice fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council’s procedures, please contact the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting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

Sincerely,

A handwritten signature in black ink, appearing to read "S. L. Levine".

Steven L. Levine
Real Estate Consultant

Enclosure



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

Steven L. Levine
Real Estate Consultant

April 16, 2015

Melba Realty LLC
c/o Lombard Group
P.O. Box 7014
Prospect, Connecticut 06714

Re: Existing Telecommunications Facility – 234 Melba Street, Milford

To Whom It May Concern:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System (“UMTS”) and Long Term Evolution (“LTE”) capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“AT&T”) will be changing its equipment configuration the telecommunications site on Melba Realty’s Melba Street, Milford property.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "S. Levine".

Steven L. Levine
Real Estate Consultant

Enclosure

Date: **September 12, 2012**



MeganJo MacLeod
T-Mobile Towers
12920 SE 38th Street
Bellevue, WA 98006
(425) 383-5335

Tower Engineering Professionals
3703 Junction Blvd
Raleigh, NC 27603
(919) 661-6351
whmartin@tepgroup.net

Subject: Structural Modification Analysis Report

Carrier Designation: **AT&T Reconfiguration**
Carrier Site Number: CT5601
Carrier Site Name: Unknown

T-Mobile Designation: **T-Mobile Site Number:** CT11209D
T-Mobile Site Name: Milford Shore Area

Engineering Firm Designation: **TEP Project Number:** 100459

Site Data: **234 Melba Street, Milford, New Haven County, CT 06460**
Latitude 41° 12' 36.0", Longitude -73° 1' 8.5"
125 Foot – Flagpole

Dear Ms. MacLeod,

Tower Engineering Professionals is pleased to submit this “**Structural Modification Analysis Report**” to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine structural acceptability of the structure stress level. Based on our analysis we have determined the stress level for the structure and foundation, under the following load case, to be:

LC2: Existing + Proposed Equipment w/ Proposed Modifications **Sufficient Capacity**
Note: See Table 1 for the existing and proposed loading.

Structure Capacity	Controlling Component
97.3%	Pole (L5)

The analysis has been performed in accordance with the ANSI/TIA/EIA-222-F-1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, ASCE 7-05 Minimum Design Loads for Buildings and Other Structures, and the 2003 International Building Code with the 2005 Connecticut Supplement with 2009 Amendments.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 and the attached drawings for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *T-Mobile Towers*. If you have any questions or need further assistance on this or any other projects please give us a call.

Analysis prepared by: William H. Martin, P.E., S.E.

Respectfully submitted by:

Andrew T. Haldane, P.E.



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Structural Modification Drawings

1) INTRODUCTION

This tower is a 125-ft stealth flag pole tower designed by Pirod Inc. in January of 2001. The tower was originally designed for a wind speed of 85 mph and 0.5 inch of ice per the ANSI/EIA/TIA-222-F standard for the appurtenances listed in Table 2. TEP did not visit the site. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of ANSI/TIA/EIA-222-F-1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and Appendix K of the Connecticut Building Code Supplement of 110 mph (3 second gust)/95 mph (fastest mile) wind speed with no ice, 37.6 mph with 0.75 inch escalating ice thickness per ASCE 7-05, and 50 mph under service loads.

Table 1 - Existing and Proposed Antenna and Cable Information

Existing/ Proposed	Elevation (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size (in)	Coax ¹ Location	Owner/ Tenant
Existing	122.5	3	RFS APXV18-206516S-A20	Inside Flagpole	12	1 5/8	Inside	T-Mobile
		6	Twin AWS TMA's					
Existing	117.5	1	15ft x 25ft flag	-	-	-	-	-
Existing	114.5	3	RFS APXV18-206516S-A20	Inside Flagpole	12	1 5/8	Inside	T-Mobile
		3	Twin PCS TMA's					
Proposed	104.5	3	Powerwave P45-16-XLH-RR	Inside Flagpole: AT&T to increase shroud to 30" Dia.	6	7/8	Inside	AT&T
Proposed	94.5	3	KMW AM-X-CD-16-65-00T-RET		6	7/8	Inside	AT&T
		6	CCI DTMABP7819VG12A					

Notes:

- 1) See "Appendix B – Coax Configuration" for assumed feed line configuration.

Table 2 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Coax Location
125	117.5	1	Unknown	15' x 25' flag	N/A	N/A	N/A
85-125	105	1	Unknown	(4) 10' Fiberglass Shrouds	Unknown	Unknown	Unknown

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Tower and Foundation Drawings	Pirod Inc., dated January 4, 2001, File # A-118036-F-1001702	-	T-Mobile
Geotechnical Report	DR Clarence Welti, PE, PC, dated October 17, 2000	-	T-Mobile
Previous Structural Analysis	Tower Engineering Professionals, Inc., dated May 14, 2012	-	T-Mobile
Correspondence	Correspondence from T-Mobile with regards to the proposed and existing loading, SAW dated March 20, 2012	-	T-Mobile

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) The tower and foundation were built in accordance with the manufacturer's specifications.
- 2) The tower and foundation have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 1, and "Appendix B – Coax Configuration".
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by the standard.
- 5) All tower components are in sufficient condition to carry their full design capacity.
- 6) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 7) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 8) TEP assumed the following material properties:
 - a) Pipe: ASTM A500 Gr. 42
 - b) Flange Bolts: ASTM A325
 - c) Flange Plates: ASTM A572-50

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
L1	125 - 105	Pole	6 Sch 80 w/ 30" Dia Concealment	1	-1213.18	282334.72	74.2	Pass
L2	105 - 85	Pole	P8.625 x 0.875 W w/ 30" Shroud	2	-3732.52	715501.05	88.7	Pass
L3	85 - 50	Pole	P24x3/8	3	-7835.20	934939.50	54.8	Pass
L4	50 - 20	Pole	P24x3/8	4	-11643.20	934939.50	96.2	Pass
L5	20 - 0	Pole	P24x1/2	5	-14908.10	1239991.21	97.3	Pass
							Summary	
						Pole (L5)	97.3	Pass
						RATING =	97.3	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods (Existing)	-	85.2	Pass
1	Anchor Rods (Proposed)	-	94.8	Pass
-	Base Plate	-	85.2	Pass
1	Base Foundation (Soil Interaction)	-	20.2	Pass
-	Base Foundation (Structural)	-	90.4	Pass
-	Flange Connection	20	82.2	Pass
-	Flange Connection	50	83.6	Pass
-	Flange Connection	85	48.6	Pass
-	Flange Connection	105	69.3	Pass

Structure Rating (max from all components) =	97.3%
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Notes:

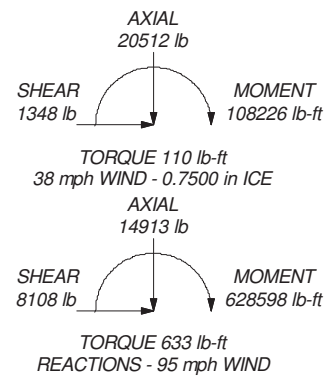
- 1) See "Appendix C – Additional Calculations" for calculations supporting the percent capacity report

4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report, "Appendix B – Coax Configuration" or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The modifications depicted in "Appendix D – Structural Modification Drawings" shall be installed and, upon completion, inspected.

APPENDIX A
TNXTOWER OUTPUT

Section	1	6 Sch 80 w/ 30" Dia Concealment	20'	A500-42	572.0
Section	2	P8.625 x 0.875 W w/ 30" Shroud	20'	A500-42	1449.6
Section	3	P24x3/8	35'	A53-B-42	3314.8
Section	4	P24x3/8	30'	A53-B-42	2841.3
Section	5	P24x1/2	20'	A53-B-42	2512.2
Section					10689.8



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20-ft x 30" Concealment Cylinder	125 - 105	ETW200VS12UB	114.5
Flag 15' x 25'	125 - 110	ETW200VS12UB	114.5
APXV18-206516S-C-A20	122.5	20-ft x 30" Concealment Cylinder	105 - 85
APXV18-206516S-C-A20	122.5	P45-16-XLH-RR	104.5
APXV18-206516S-C-A20	122.5	P45-16-XLH-RR	104.5
(2) ETW200VS12UB	122.5	P45-16-XLH-RR	104.5
(2) ETW200VS12UB	122.5	AM-X-CD-16-65-00T-RET	94.5
(2) ETW200VS12UB	122.5	AM-X-CD-16-65-00T-RET	94.5
APXV18-206516S-C-A20	114.5	AM-X-CD-16-65-00T-RET	94.5
APXV18-206516S-C-A20	114.5	(2) DTMAPB7819VG12A	94.5
APXV18-206516S-C-A20	114.5	(2) DTMAPB7819VG12A	94.5
ETW200VS12UB	114.5	(2) DTMAPB7819VG12A	94.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A53-B-42	42 ksi	63 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 95 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.
5. TOWER RATING: 97.3%

 <p>Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job: CT11209D - Milford Shore Area		
	Project: TEP# 100459		
Client: T-Mobile Code: TIA/EIA-222-F Path:	Drawn by: WHM Date: 09/11/12	App'd: Scale: NTS Dwg No. E-1	<small>Q:\0459 CT11209D\Structural\Structural Mds 8.17.RISA\CT11209D.dwg</small>

tnxTower Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job CT11209D - Milford Shore Area	Page 1 of 9
	Project TEP# 100459	Date 09:58:18 09/11/12
	Client T-Mobile	Designed by WHM

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 95 mph.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 38 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys √ Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component Triangulate Diamond Inner Bracing 	<ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque Include Angle Block Shear Check <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
--	--	---

Pole Section Geometry

Section	Elevation <i>ft</i>	Section Length <i>ft</i>	Pole Size	Pole Grade	Socket Length <i>ft</i>
L1	125'-105'	20'	6 Sch 80 w/ 30" Dia Concealment	A500-42 (42 ksi)	
L2	105'-85'	20'	P8.625 x 0.875 W w/ 30" Shroud	A500-42 (42 ksi)	
L3	85'-50'	35'	P24x3/8	A53-B-42 (42 ksi)	
L4	50'-20'	30'	P24x3/8	A53-B-42 (42 ksi)	
L5	20'-0'	20'	P24x1/2	A53-B-42 (42 ksi)	

tnxTower Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job CT11209D - Milford Shore Area	Page 2 of 9
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	Client T-Mobile	Designed by WHM

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 125'-105'				1	1	1		
L2 105'-85'				1	1	1		
L3 85'-50'				1	1	1		
L4 50'-20'				1	1	1		
L5 20'-0'				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number		C_{AA}	Weight
				ft			ft ² /ft	plf
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	122'6" - 0'	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	114'6" - 0'	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF5-50A (7/8 FOAM)	C	No	Inside Pole	104'6" - 0'	6	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
LDF5-50A (7/8 FOAM)	C	No	Inside Pole	94'6" - 0'	6	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33

PL 1.25x4.25	C	No	CaAa (Out Of Face)	22'3" - 17'9"	1	No Ice	0.21	18.08
						1/2" Ice	0.32	19.01
						1" Ice	0.43	20.29
						2" Ice	0.65	23.89
						4" Ice	1.10	35.23
PL 1.25x4.25	C	No	CaAa (Out Of Face)	22'3" - 17'9"	2	No Ice	0.00	18.08
						1/2" Ice	0.00	19.01
						1" Ice	0.00	20.29
						2" Ice	0.00	23.89
						4" Ice	0.00	35.23

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation	Face	A_R	A_F	C_{AA} In Face	C_{AA} Out Face	Weight
	ft		ft ²	ft ²	ft ²	ft ²	lb
L1	125'-105'	A	0.000	0.000	0.000	0.000	93.48

tnxTower Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	CT11209D - Milford Shore Area	Page	3 of 9
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	Client	T-Mobile	Designed by	WHM

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L2	105'-85'	B	0.000	0.000	0.000	0.000	172.20
		C	0.000	0.000	0.000	0.000	0.00
		A	0.000	0.000	0.000	0.000	196.80
L3	85'-50'	B	0.000	0.000	0.000	0.000	196.80
		C	0.000	0.000	0.000	0.000	57.42
		A	0.000	0.000	0.000	0.000	344.40
L4	50'-20'	B	0.000	0.000	0.000	0.000	344.40
		C	0.000	0.000	0.000	0.000	138.60
		A	0.000	0.000	0.000	0.000	295.20
L5	20'-0'	B	0.000	0.000	0.000	0.000	295.20
		C	0.000	0.000	0.000	0.469	240.82
		A	0.000	0.000	0.000	0.000	196.80
		B	0.000	0.000	0.000	0.000	196.80
		C	0.000	0.000	0.000	0.469	201.22

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	125'-105'	A	0.871	0.000	0.000	0.000	0.000	93.48
		B		0.000	0.000	0.000	0.000	172.20
		C		0.000	0.000	0.000	0.000	0.00
L2	105'-85'	A	0.851	0.000	0.000	0.000	0.000	196.80
		B		0.000	0.000	0.000	0.000	196.80
		C		0.000	0.000	0.000	0.000	57.42
L3	85'-50'	A	0.818	0.000	0.000	0.000	0.000	344.40
		B		0.000	0.000	0.000	0.000	344.40
		C		0.000	0.000	0.000	0.000	138.60
L4	50'-20'	A	0.755	0.000	0.000	0.000	0.000	295.20
		B		0.000	0.000	0.000	0.000	295.20
		C		0.000	0.000	0.000	0.846	251.54
L5	20'-0'	A	0.750	0.000	0.000	0.000	0.000	196.80
		B		0.000	0.000	0.000	0.000	196.80
		C		0.000	0.000	0.000	0.844	211.85

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	125'-105'	0.0000	0.0000	0.0000	0.0000
L2	105'-85'	0.0000	0.0000	0.0000	0.0000
L3	85'-50'	0.0000	0.0000	0.0000	0.0000
L4	50'-20'	-0.0201	0.0116	-0.0340	0.0196
L5	20'-0'	-0.0301	0.0174	-0.0506	0.0292

Discrete Tower Loads

tnxTower Tower Engineering Professionals, Inc. 3703 Junction Blvd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	CT11209D - Milford Shore Area	Page	4 of 9
	Project	TEP# 100459	Date	09:58:18 09/11/12
	Client	T-Mobile	Designed by	WHM

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA}		Weight	
			Horz	Lateral	Vert			Front	Side		
			ft	ft	ft	°	ft	ft ²	ft ²	lb	
20-ft x 30" Concealment Cylinder	C	None				0.0000	125' - 105'	No Ice	0.00	0.00	259.60
								1/2" Ice	0.00	0.00	639.50
								1" Ice	0.00	0.00	1019.40
								2" Ice	0.00	0.00	1779.20
								4" Ice	0.00	0.00	3298.80
20-ft x 30" Concealment Cylinder	C	None				0.0000	105' - 85'	No Ice	0.00	0.00	259.60
								1/2" Ice	0.00	0.00	639.50
								1" Ice	0.00	0.00	1019.40
								2" Ice	0.00	0.00	1779.20
								4" Ice	0.00	0.00	3298.80

APXV18-206516S-C-A20	A	None				0.0000	122'6"	No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80
								4" Ice	0.00	0.00	512.65
APXV18-206516S-C-A20	B	None				0.0000	122'6"	No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80
								4" Ice	0.00	0.00	512.65
APXV18-206516S-C-A20	C	None				0.0000	122'6"	No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80
								4" Ice	0.00	0.00	512.65
(2) ETW200VS12UB	A	None				0.0000	122'6"	No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62
								4" Ice	0.00	0.00	86.32
(2) ETW200VS12UB	B	None				0.0000	122'6"	No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62
								4" Ice	0.00	0.00	86.32
(2) ETW200VS12UB	C	None				0.0000	122'6"	No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62
								4" Ice	0.00	0.00	86.32

Flag 15' x 25'	A	From Leg	0.00			0.0000	125' - 110'	No Ice	10.08	10.08	22.88
			0'					1/2" Ice	10.08	10.08	22.88
			0'					1" Ice	10.08	10.08	22.88
								2" Ice	10.08	10.08	22.88
								4" Ice	10.08	10.08	22.88

APXV18-206516S-C-A20	A	None				0.0000	114'6"	No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80
								4" Ice	0.00	0.00	512.65
APXV18-206516S-C-A20	B	None				0.0000	114'6"	No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80

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	Client T-Mobile	Designed by WHM

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral	Vert						
			ft	ft	ft	°	ft	ft ²	ft ²	lb	
APXV18-206516S-C-A20	C	None				0.0000	114'6"	4" Ice	0.00	0.00	512.65
								No Ice	0.00	0.00	36.95
								1/2" Ice	0.00	0.00	68.28
								1" Ice	0.00	0.00	108.25
								2" Ice	0.00	0.00	207.80
ETW200VS12UB	A	None				0.0000	114'6"	4" Ice	0.00	0.00	512.65
								No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62
ETW200VS12UB	B	None				0.0000	114'6"	4" Ice	0.00	0.00	86.32
								No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62
ETW200VS12UB	C	None				0.0000	114'6"	4" Ice	0.00	0.00	86.32
								No Ice	0.00	0.00	11.00
								1/2" Ice	0.00	0.00	14.52
								1" Ice	0.00	0.00	19.33
								2" Ice	0.00	0.00	33.62

P45-16-XLH-RR	A	None				0.0000	104'6"	4" Ice	0.00	0.00	595.09
								No Ice	0.00	0.00	53.00
								1/2" Ice	0.00	0.00	101.05
								1" Ice	0.00	0.00	154.34
								2" Ice	0.00	0.00	277.43
P45-16-XLH-RR	B	None				0.0000	104'6"	4" Ice	0.00	0.00	595.09
								No Ice	0.00	0.00	53.00
								1/2" Ice	0.00	0.00	101.05
								1" Ice	0.00	0.00	154.34
								2" Ice	0.00	0.00	277.43
P45-16-XLH-RR	C	None				0.0000	104'6"	4" Ice	0.00	0.00	595.09
								No Ice	0.00	0.00	53.00
								1/2" Ice	0.00	0.00	101.05
								1" Ice	0.00	0.00	154.34
								2" Ice	0.00	0.00	277.43

AM-X-CD-16-65-00T-RET	A	None				0.0000	94'6"	4" Ice	0.00	0.00	599.59
								No Ice	0.00	0.00	48.50
								1/2" Ice	0.00	0.00	95.00
								1" Ice	0.00	0.00	147.50
								2" Ice	0.00	0.00	271.31
AM-X-CD-16-65-00T-RET	B	None				0.0000	94'6"	4" Ice	0.00	0.00	599.59
								No Ice	0.00	0.00	48.50
								1/2" Ice	0.00	0.00	95.00
								1" Ice	0.00	0.00	147.50
								2" Ice	0.00	0.00	271.31
AM-X-CD-16-65-00T-RET	C	None				0.0000	94'6"	4" Ice	0.00	0.00	599.59
								No Ice	0.00	0.00	48.50
								1/2" Ice	0.00	0.00	95.00
								1" Ice	0.00	0.00	147.50
								2" Ice	0.00	0.00	271.31
(2) DTMABP7819VG12A	A	None				0.0000	94'6"	4" Ice	0.00	0.00	599.59
								No Ice	0.00	0.00	14.30
								1/2" Ice	0.00	0.00	19.33
								1" Ice	0.00	0.00	25.98
								2" Ice	0.00	0.00	44.90

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	Client T-Mobile	Designed by WHM

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
(2) DTMABP7819VG12A	B	None		0.0000	94'6"	4" Ice	0.00	0.00	110.65
						No Ice	0.00	0.00	14.30
						1/2" Ice	0.00	0.00	19.33
						1" Ice	0.00	0.00	25.98
						2" Ice	0.00	0.00	44.90
(2) DTMABP7819VG12A	C	None		0.0000	94'6"	4" Ice	0.00	0.00	110.65
						No Ice	0.00	0.00	14.30
						1/2" Ice	0.00	0.00	19.33
						1" Ice	0.00	0.00	25.98
						2" Ice	0.00	0.00	44.90
						4" Ice	0.00	0.00	110.65

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+ Wind 0 deg - No Ice
3	Dead+ Wind 30 deg - No Ice
4	Dead+ Wind 60 deg - No Ice
5	Dead+ Wind 90 deg - No Ice
6	Dead+ Wind 120 deg - No Ice
7	Dead+ Wind 150 deg - No Ice
8	Dead+ Wind 180 deg - No Ice
9	Dead+ Wind 210 deg - No Ice
10	Dead+ Wind 240 deg - No Ice
11	Dead+ Wind 270 deg - No Ice
12	Dead+ Wind 300 deg - No Ice
13	Dead+ Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+ Wind 0 deg+Ice+Temp
16	Dead+ Wind 30 deg+Ice+Temp
17	Dead+ Wind 60 deg+Ice+Temp
18	Dead+ Wind 90 deg+Ice+Temp
19	Dead+ Wind 120 deg+Ice+Temp
20	Dead+ Wind 150 deg+Ice+Temp
21	Dead+ Wind 180 deg+Ice+Temp
22	Dead+ Wind 210 deg+Ice+Temp
23	Dead+ Wind 240 deg+Ice+Temp
24	Dead+ Wind 270 deg+Ice+Temp
25	Dead+ Wind 300 deg+Ice+Temp
26	Dead+ Wind 330 deg+Ice+Temp
27	Dead+ Wind 0 deg - Service
28	Dead+ Wind 30 deg - Service
29	Dead+ Wind 60 deg - Service
30	Dead+ Wind 90 deg - Service
31	Dead+ Wind 120 deg - Service
32	Dead+ Wind 150 deg - Service
33	Dead+ Wind 180 deg - Service
34	Dead+ Wind 210 deg - Service
35	Dead+ Wind 240 deg - Service

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Comb. No.	Description
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 105	24.544	37	1.9039	0.3122
L2	105 - 85	16.932	36	1.5673	0.2901
L3	85 - 50	11.265	36	1.0348	0.0029
L4	50 - 20	4.426	35	0.7889	0.0017
L5	20 - 0	0.747	35	0.3406	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125'	20-ft x 30" Concealment Cylinder	37	24.544	1.9039	0.3122	7367
122'6"	APXV18-206516S-C-A20	37	23.539	1.8710	0.3199	7367
120'	20-ft x 30" Concealment Cylinder	37	22.539	1.8372	0.3266	7367
115'	20-ft x 30" Concealment Cylinder	36	20.574	1.7635	0.3330	3683
114'6"	APXV18-206516S-C-A20	36	20.382	1.7555	0.3329	3508
110'	20-ft x 30" Concealment Cylinder	36	18.692	1.6759	0.3235	2455
105'	20-ft x 30" Concealment Cylinder	36	16.932	1.5673	0.2901	1965
104'6"	P45-16-XLH-RR	36	16.764	1.5551	0.2852	1956
100'	20-ft x 30" Concealment Cylinder	36	15.324	1.4347	0.2288	2113
95'	20-ft x 30" Concealment Cylinder	36	13.857	1.2908	0.1505	2479
94'6"	AM-X-CD-16-65-00T-RET	36	13.718	1.2764	0.1423	2523
90'	20-ft x 30" Concealment Cylinder	36	12.511	1.1519	0.0702	2999
85'	20-ft x 30" Concealment Cylinder	36	11.265	1.0348	0.0029	3682

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 105	88.242	2	6.8400	1.0670
L2	105 - 85	60.929	11	5.6390	0.9893
L3	85 - 50	40.555	11	3.7264	0.0097
L4	50 - 20	15.936	11	2.8411	0.0054
L5	20 - 0	2.690	11	1.2266	0.0018

Critical Deflections and Radius of Curvature - Design Wind

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125'	20-ft x 30" Concealment Cylinder	2	88.242	6.8400	1.0670	2111
122'6"	APXV18-206516S-C-A20	2	84.636	6.7229	1.0929	2111
120'	20-ft x 30" Concealment Cylinder	11	81.049	6.6028	1.1153	2111
115'	20-ft x 30" Concealment Cylinder	11	74.005	6.3403	1.1365	1054
114'6"	APXV18-206516S-C-A20	11	73.314	6.3117	1.1361	1004
110'	20-ft x 30" Concealment Cylinder	11	67.249	6.0276	1.1036	701
105'	20-ft x 30" Concealment Cylinder	11	60.929	5.6390	0.9893	560
104'6"	P45-16-XLH-RR	11	60.326	5.5950	0.9724	557
100'	20-ft x 30" Concealment Cylinder	11	55.151	5.1635	0.7798	600
95'	20-ft x 30" Concealment Cylinder	11	49.879	4.6465	0.5128	702
94'6"	AM-X-CD-16-65-00T-RET	11	49.376	4.5948	0.4848	714
90'	20-ft x 30" Concealment Cylinder	11	45.038	4.1476	0.2391	846
85'	20-ft x 30" Concealment Cylinder	11	40.555	3.7264	0.0097	1034

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _a ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P/P _a
L1	125 - 105 (1)	6 Sch 80 w/ 30" Dia Concealment	20'	0'	0.0	25.200	8.4049	-1213.18	211804.00	0.006
L2	105 - 85 (2)	P8.625 x 0.875 W w/ 30" Shroud	20'	0'	0.0	25.200	21.3000	-3732.52	536760.00	0.007
L3	85 - 50 (3)	P24x3/8	35'	0'	0.0	25.200	27.8325	-7835.20	701380.00	0.011
L4	50 - 20 (4)	P24x3/8	30'	0'	0.0	25.200	27.8325	-11643.20	701380.00	0.017
L5	20 - 0 (5)	P24x1/2	20'	0'	0.0	25.200	36.9137	-14908.10	930226.00	0.016

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x lb-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} /F _{bx}	Actual M _y lb-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} /F _{by}
L1	125 - 105 (1)	6 Sch 80 w/ 30" Dia Concealment	25140.25	24.680	25.200	0.979	0.00	0.000	25.200	0.000
L2	105 - 85 (2)	P8.625 x 0.875 W w/ 30" Shroud	89312.50	28.530	25.200	1.132	0.00	0.000	25.200	0.000
L3	85 - 50 (3)	P24x3/8	268430.00	19.901	27.720	0.718	0.00	0.000	27.720	0.000
L4	50 - 20 (4)	P24x3/8	472830.83	35.055	27.720	1.265	0.00	0.000	27.720	0.000
L5	20 - 0 (5)	P24x1/2	628598.33	35.506	27.720	1.281	0.00	0.000	27.720	0.000

Pole Shear Design Data

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Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	125 - 105 (1)	6 Sch 80 w/ 30" Dia Concealment	2343.95	0.828	16.800	0.049	601.01	0.294	16.800	0.018
L2	105 - 85 (2)	P8.625 x 0.875 W w/ 30" Shroud	4025.85	0.189	16.800	0.011	639.57	3.310	16.800	0.197
L3	85 - 50 (3)	P24x3/8	6145.15	0.442	16.800	0.026	552.03	0.020	16.800	0.001
L4	50 - 20 (4)	P24x3/8	7430.22	0.534	16.800	0.032	634.82	0.024	16.800	0.001
L5	20 - 0 (5)	P24x1/2	8117.53	0.440	16.800	0.026	550.59	0.016	16.800	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 105 (1)	0.006	0.979	0.000	0.049	0.018	0.990	1.333	H1-3+VT ✓
L2	105 - 85 (2)	0.007	1.132	0.000	0.011	0.197	1.182	1.333	H1-3+VT ✓
L3	85 - 50 (3)	0.011	0.718	0.000	0.026	0.001	0.730	1.333	H1-3+VT ✓
L4	50 - 20 (4)	0.017	1.265	0.000	0.032	0.001	1.282	1.333	H1-3+VT ✓
L5	20 - 0 (5)	0.016	1.281	0.000	0.026	0.001	1.298	1.333	H1-3+VT ✓

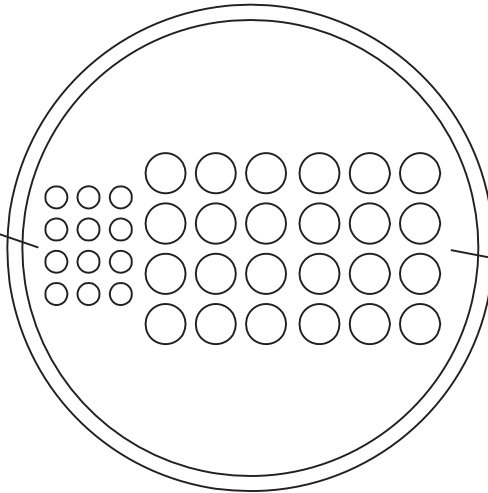
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF * P_{allow}$ lb	% Capacity	Pass/Fail	
L1	125 - 105	Pole	6 Sch 80 w/ 30" Dia Concealment	1	-1213.18	282334.72	74.2	Pass	
L2	105 - 85	Pole	P8.625 x 0.875 W w/ 30" Shroud	2	-3732.52	715501.05	88.7	Pass	
L3	85 - 50	Pole	P24x3/8	3	-7835.20	934939.50	54.8	Pass	
L4	50 - 20	Pole	P24x3/8	4	-11643.20	934939.50	96.2	Pass	
L5	20 - 0	Pole	P24x1/2	5	-14908.10	1239991.21	97.3	Pass	
							Summary		
							Pole (L5)	97.3	Pass
							RATING =	97.3	Pass

APPENDIX B
COAX CONFIGURATION



AT&T - PROPOSED)
(6) 7/8 TO 104.5 FT
(6) 7/8 TO 94.5 FT



(T-MOBILE - EXISTING)
(12) 1 5/8 TO 122.5 FT
(12) 1 5/8 TO 114.5 FT

COAX PLAN - N.T.S.

PREPARED BY:

 **TOWER ENGINEERING PROFESSIONALS**
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
(919) 661-6351
www.tepgroup.net

PREPARED FOR:


T-MOBILE TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006

PROJECT INFORMATION:

SITE # CT11209D
MILFORD SHORE AREA
234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

REVISION: 1

TEP JOB #: 100459

SHEET NUMBER:

S-1

APPENDIX C
ADDITIONAL CALCULATIONS

Anchor Rod Reinforcement

Project Name: CT11209
 Project Number: 120459
 Designed By: WHM
 Code: F
 Modification: (4) 1" A687

Existing Loading

Moment: 628.598 k-ft
 Axial: 14.913 k
 Shear: 8.108 k

Modified Load to Existing Anchor Rods

$M = I_{ext} / Y_{ext} \times (P / A_{y/f} + T_{r/f})$
 $(A \text{ or } S) = (A \text{ or } S) \times A_{ratio}$
 Moment: 504.13 k-ft
 Axial: 12.43 k
 Shear: 6.76 k
 A_{ratio} : 0.83

Existing Anchor Rod Properties

Type of Bar: A687
 No. Existing: 20
 $D_{r/f}$: 1.00 in
 Bolt Circle: 27.00 in
 $A_{net_r/f}$: 0.61 in²
 $A_{g_r/f}$: 0.79 in²
 $F_{y_r/f}$: 105 ksi
 $F_{u_r/f}$: 150 ksi
 $A_{y/f}$: 12.1 in²
 $I_{r/f}$: 1105.02 in⁴
 $Y_{r/f}$: 13.50 in

Reinforcing Anchor Rod Properties

Type of Bar: A687
 No. R/F: 4
 $D_{r/f}$: 1.00 in
 Bolt Circle: 30.00 in
 $A_{net_r/f}$: 0.61 in²
 $A_{g_r/f}$: 0.79 in²
 $F_{y_r/f}$: 105 ksi
 $F_{u_r/f}$: 150 ksi
 $A_{y/f}$: 14.5 in²
 $I_{r/f}$: 1377.84 in⁴
 $Y_{r/f}$: 15.00 in

Existing Anchor Bolts Stresses

$\sigma = P / A_{y/f} \pm My / I_{r/f}$
 Compression: 74.93 ksi
 Tension: -72.88 ksi

Reinforcing Anchor Bolts Stresses

$\sigma = P / A_{y/f} \pm My / I_{r/f}$
 Compression: 83.15 ksi
 Tension: -81.09 ksi

Capacity of Existing Anchor Rods

Ext_{design} : 51.84 k
 Ext_{actual} : 44.17 k
 % Capacity: 85.2%

Capacity of Reinforcing Anchor Rods

R/F_{design} : 51.84 k
 R/F_{actual} : 49.14 k
 % Capacity: 94.8%

Foundation Properties

f'_c : 3000 psi
 f_y : 60000 psi
 d_b : 1 in
 Top Cover: 4.5 in
 G: 4.03 in
 T_u : 72.72 kips
 Epoxy Strength: 1.8 ksi
 Hole Dia: 1.25 in
 c_b : 2.5

Embedment Depth

ld: 40.05 in
 Edev: 30.86 in
 Embedment Depth: 3.98 ft

Proof Load

50.904 kips

 * CAISSON - Pier Foundations Analysis and Design - Copyright Power Line Systems, Inc. 1993-2010 *

Project Title: CT11209D
 Project Notes: 3.5-ft dia. x 29.5-ft

Calculation Method: Full 8CD

***** I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
3.50	0.50		

Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	1.50	0.00	135.0			
2	Clay	8.50	1.50	135.0			
3	Sand	20.00	10.00	75.0		4.204	38.00

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
628.6	14.9	8.11	9.89 % Capacity = 2.0 / 9.89 = 20.2%

***** R E S U L T S

Calculated Pier Properties

Length (ft)	Weight (kips)	End Bearing Pressure (psf)
29.500	42.573	1550.0

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	0.50	1.50	135.0			0.00	1.25
Clay	2.00	8.50	135.0			0.00	6.25
Sand	10.50	11.51	75.0		4.204	905.11	16.72
Sand	22.01	7.49	75.0		4.204	-824.58	25.90

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	80.5	6219.8	8.1	628.9
2.95	80.5	6457.4	8.1	652.9
5.90	80.5	6694.9	8.1	676.9
8.85	80.5	6932.5	8.1	701.0
11.80	0.3	7118.5	0.0	719.8
14.75	-202.6	6827.1	-20.5	690.3
17.70	-434.3	5894.7	-43.9	596.0
20.65	-694.8	4236.4	-70.3	428.4
23.60	-665.0	2018.5	-67.2	204.1
26.55	-346.9	518.8	-35.1	52.5
29.50	0.0	0.0	0.0	0.0

APPENDIX D
STRUCTURAL MODIFICATION DRAWINGS

STRUCTURAL MODIFICATION DRAWINGS

SITE NAME:
MILFORD SHORE AREA

T-MOBILE SITE NUMBER:
CT11209D

SITE ADDRESS:
**234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)**

PLANS PREPARED FOR:



12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 861-6351
www.tepgroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:
T-1

REVISION:
0

TEP #: 100459

INDEX OF SHEETS

NO.	SHEET TITLE	REV
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N-1	MI CHECKLIST AND NOTES	0
N-2	PROJECT NOTES I	0
N-3	PROJECT NOTES II	0
N-4	ANCHOR TESTING NOTES	0
S-1	TOWER ELEVATION AND MODIFICATION SCHEDULE	0
S-2	SECTION DETAILS	0
S-3	ANCHOR BOLT REINFORCEMENT DETAILS	0
S-4	SPLICE REINFORCEMENT DETAILS	0
S-5	PROPOSED CONGEALED SECTION DETAILS I	0
S-6	PROPOSED CONGEALED SECTION DETAILS II	0

MODIFICATION PROVISIONS

THE MODIFICATIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL MODIFICATION ANALYSIS REPORT COMPLETED BY TOWER ENGINEERING PROFESSIONALS (TEP), JOB#: 100459 DATED SEPTEMBER 12, 2012 (REV 0). THIS REPORT IS BASED ON A SPECIFIC ANTENNA LOADING AND COAX CONFIGURATION. SEE THE REPORT FOR THE ANTENNA AND COAX LOADING INFORMATION. ANY OTHER ANTENNA OR COAX CONFIGURATION REQUIRES REVISIONS TO THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, QUANTITIES, PART NUMBERS, AND COAX ANTENNA PLACEMENTS PRIOR TO BIDDING ORDERING MATERIALS, AND CONSTRUCTION.

REFERENCED DOCUMENTS

DOCUMENT	REMARKS	DATE
TOWER FOUNDATION DESIGN DRAWINGS	PROD. INC. PROJ. #: A-118036-F-1001702	01-04-01
GEOTECHNICAL REPORT	DR. CLARENCE WELTI, P.E., P.C. T-MOBILE #: CT11209D	10-17-00

PROJECT TEAM

PROJECT CONTACT:

NAME: T-MOBILE TOWERS
ADDRESS: 12920 SE 38TH STREET
CITY, STATE, ZIP: BELLEVUE, WA 98006
CONTACT: MEGAN JO MACLEOD
PHONE: (425) 383-5335

TOWER MANUFACTURER:

NAME: PROD. INC.
ADDRESS: 15000 WOOD DR
CITY, STATE, ZIP: PLYMOUTH, IN 46563
CONTACT: ENGINEERING DEPARTMENT
PHONE: (219) 936-4221

STRUCTURAL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS, INC.
ADDRESS: 3703 JUNCTION BOULEVARD
CITY, STATE, ZIP: RALEIGH, NC 27603
CONTACT: ANDREW T. FALDANE, P.E., C.W.I.
PHONE: (919) 861-6351

GEOTECHNICAL ENGINEER:

NAME: DR. CLARENCE WELTI, P.E., P.C.
ADDRESS: 227 WILLIAMS STREET
CITY, STATE, ZIP: GLASTONBURY, CT 06033
CONTACT: DR. CLARENCE WELTI, P.E., P.C.
PHONE: (860) 633-4623

MODIFICATION INSPECTION NOTES:

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE COMPLIANCE WITH THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).
 THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI SUBSTITUTE FOR THE ENGINEER'S MODIFICATION DESIGN. WHENEVER THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL MTS SHALL BE CONDUCTED BY AN OWNER APPROVED ENGINEERING VENDOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR THE OWNER.
 TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI 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 THE PROJECT CONTACT LISTED ON SHEET T-1.

MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI 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 MI REPORT TO THE OWNER.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- PRE-GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS. IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTORS TO COMMENCE WITH ONE SITE VISIT.
- INSPECTIONS TO CORRECT DEFICIENCIES SHOULD BE COMPLETED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
NA	EOR APPROVED SHOP DRAWINGS
NA	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
X	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	CONTINUOUS FOUNDATION INSPECTIONS
NA	CONCRETE COMP. STRENGTH AND SLUMP TESTS
X	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
X	CONTRACTOR'S CERTIFIED WELD INSPECTION
NA	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI 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 PMI REPORT
 NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

PLANS PREPARED FOR:



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 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

PROJECT INFORMATION:

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 SITE #: CT11209D**

234 MELBA STREET
 MILFORD, CT 06460
 (NEW HAVEN COUNTY)

PLANS PREPARED BY:



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SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

**MI CHECKLIST
 AND NOTES**

SHEET NUMBER: **N-1**

REVISION: **0**

TEP # 1004459

GENERAL NOTES:

1. ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED T-MOBILE TOWERS OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN BY ACCORDANCE WITH THE SPECIFICATIONS AND THE CITY OF WESTMINGTON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF CONNECTICUT.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE WITH THE 2005 CONNECTICUT SUPPLEMENT WITH 2009 AMENDMENTS.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
5. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE 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 AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
7. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
11. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
12. IF APPLICABLE, ALL CONCRETE WORK SHALL COMPLY TO LOCAL CODES AND THE ACI 318-05, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
13. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
14. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
15. ALL TOWER DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

PLANS PREPARED FOR:



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BELLEVUE, WA 98006
OFFICE: (425) 383-5335

PROJECT INFORMATION:

**MILFORD SHORE AREA
SITE #: CT11209D**

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

PLANS PREPARED BY:



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3703 JUNCTION BOULEVARD
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SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

PROJECT NOTES I

SHEET NUMBER:	REVISION:
N-2	0
TEP # 100459	

STRUCTURAL STEEL NOTES:

- THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
- UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - STRUCTURAL STEEL:
 - PIPE/TUBE: ASTM A500-50
 - ANGLE: ASTM A36
 - PLATE: ASTM A36 (SELF SUPPORTING AND GUYED TOWERS)
 - PLATE: ASTM A572-50 (MONOPOLE)
 - ALL BOLTS, ASTM A325 (FPE) GALVANIZED HIGH STRENGTH BOLTS.
 - ALL NUTS, ASTM A307 (FPE) GALVANIZED HIGH STRENGTH NUTS.
 - ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
- ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
- HOTS SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
- HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED. AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
- REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
- A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

WELDING NOTES:

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL".
- ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
- CONTRACTOR SHALL RETAIN AN AWS CERTIFIED WELD INSPECTOR TO PERFORM VISUAL INSPECTIONS ON FIELD WELDS. A LETTER AND REPORT SHALL BE ISSUED TO THE CONTRACTOR. CONTRACTOR SHALL SUBMIT LETTER AND REPORT TO TOWER ENGINEERING PROFESSIONALS.
- GRIND THE SURFACE ADJACENT TO THE WELD FOR A DISTANCE OF 2" MINIMUM ALL AROUND. GRIND THE SURFACE OF THE ROD TO BE INSTALLED FOR A DISTANCE OF 2" MINIMUM ALL AROUND THE AREA TO BE WELDED. ENSURE BOTH AREAS ARE 100% FREE OF ALL GALVANIZING. SURFACES TO BE WELDED SHALL BE FREE FROM SCALE, SLAG, RUST, MOISTURE, GREASE OR ANY OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.
- DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW OF: WHEN THE TEMPERATURE IS BETWEEN 0°F AND 32°F: PREHEAT AND MAINTAIN THE STEEL IN THE VICINITY OF THE WELD AREA AT 70°F DURING THE WELDING PROCESS.
- DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
- FOR ALL WELDING, USE E70XX ELECTRODES.
- AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OR GRINDING SHALL BE REPAIRED. THE FINISHED COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 3 MILS.

BOLT TIGHTENING PROCEDURE:

- TIGHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.
 - BOLT LENGTHS UP TO AND INCLUDING FOUR DIA. BUT NOT EXCEEDING EIGHT DIA.
 - $\frac{1}{2}$ " BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH
 - $\frac{3}{8}$ " BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH
 - $\frac{1}{2}$ " BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH
 - $\frac{3}{4}$ " BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH
 - $\frac{1}{2}$ " BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH
 - $\frac{3}{4}$ " BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH
 - $\frac{1}{2}$ " BOLTS 2.25 TO 4.0 INCH LENGTH
 - $\frac{3}{8}$ " BOLTS 2.75 TO 5.0 INCH LENGTH
 - $\frac{1}{2}$ " BOLTS 3.25 TO 6.0 INCH LENGTH
 - $\frac{3}{4}$ " BOLTS 3.75 TO 7.0 INCH LENGTH
 - $\frac{1}{2}$ " BOLTS 4.25 TO 8.0 INCH LENGTH
- CONNECTION BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:
 - FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.
- 8.2.1 TURN-OF-THE-NUT TIGHTENING**

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT IN A MANNER THAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS.
- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

PLANS PREPARED FOR:



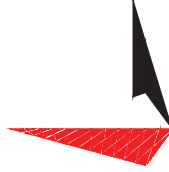
12920 SE 36TH STREET
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SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

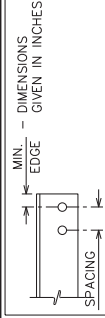
DRAWN BY:	RST	CHECKED BY:	JAB
SHEET TITLE:			

PROJECT NOTES II

SHEET NUMBER:	REVISION:
N-3	0
TEP # 100459	

BOLT EDGE AND SPACING

BOLT DIAMETER	MIN. EDGE	SPACING
$\frac{1}{2}$ "	$\frac{7}{8}$ "	$1\frac{1}{2}$ "
$\frac{3}{8}$ "	$1\frac{1}{8}$ "	$1\frac{1}{8}$ "
$\frac{1}{4}$ "	$1\frac{1}{4}$ "	$2\frac{1}{4}$ "
$\frac{7}{8}$ "	$1\frac{1}{2}$ "	$2\frac{3}{4}$ "
1"	$1\frac{3}{4}$ "	3"

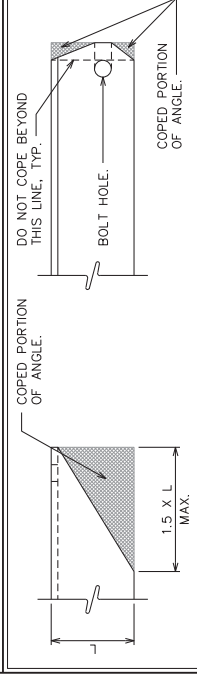


NOMINAL HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
$\frac{1}{2}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ " X $1\frac{1}{8}$ "
$\frac{3}{8}$ "	$\frac{1}{16}$ "	$\frac{1}{16}$ " X $\frac{7}{8}$ "
$\frac{1}{4}$ "	$\frac{1}{16}$ "	$\frac{1}{16}$ " X 1"
$\frac{7}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ " X $1\frac{1}{8}$ "
1"	$\frac{1}{8}$ "	$\frac{1}{8}$ " X $1\frac{1}{8}$ "

— DIMENSIONS GIVEN IN INCHES

ALLOWABLE ANGLE COPE




WORKABLE GAGES

LEG	4	3 1/2	3	2 1/2	2	1 1/2	1
G	2 1/2	2	1 1/2	1 1/8	1 1/8	1 1/8	1

— WORKABLE GAGES GIVEN IN INCHES
— MATCH EXISTING WHEN APPLICABLE

PLANS PREPARED FOR:
T-Mobile TOWERS
 12920 SE 38TH STREET
 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

PROJECT INFORMATION:
MILFORD SHORE AREA
SITE #: CT11209D
 234 MELBA STREET
 MILFORD, CT 06460
 (NEW HAVEN COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 3703 JUNCTION BOULEVARD
 RALEIGH, NC 27603-5263
 OFFICE: (919) 861-6351
 www.teppgroup.net

SEAL:

 September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:
ANCHOR TESTING NOTES

SHEET NUMBER: **N-4**
 REVISION: **0**
 TEP #: 1004459

ANCHOR TESTING PROCEDURE:

REQUIREMENTS:

1. THE ANCHORS SHALL BE INSTALLED PER THE ENGINEER OF RECORD'S DRAWINGS AND SPECIFICATIONS.
2. CEMENTITIOUS GROUT SHALL BE ALLOWED TO CURE FOR 28 DAYS PRIOR TO TESTING. EPOXY AGENTS SHALL BE ALLOWED TO CURE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION TO ACHIEVE ITS FULL EFFECTIVE LOAD CAPACITY.
3. STATIC LOAD TESTS SHALL BE PERFORMED PER ASTM E488-96 (REAPPROVED 2003).
4. FORCE MEASUREMENT SYSTEMS SHALL BE CALIBRATED IN ACCORDANCE WITH ASTM E407, STANDARD PRACTICES FOR FORCE VERIFICATION OF TESTING METHODS.

TEST PARAMETERS:

1. 50% OF THE POST-INSTALLED ANCHOR RODS OR A TOTAL OF 4, WHICHEVER IS GREATER, SHALL BE TESTED. IF ANY ONE OF THE ANCHOR RODS FAIL THE TEST, CONTACT THE ENGINEER OF RECORD TO DETERMINE IF 100% OF THE REMAINING POST-INSTALLED ANCHORS SHALL BE TESTED.
2. SUITABLE EQUIPMENT SHALL BE USED TO PERFORM TESTS REQUIRED TO VERIFY CORRECT INSTALLATION AND PROVIDE PROOF LOADS AND DISPLACEMENT TESTS ON POST-INSTALLED ANCHOR RODS. THE EQUIPMENT SHALL BE CAPABLE OF MEASURING THE FORCES TO WITHIN 2% ± OF THE APPLIED LOAD.
3. THE TEST SYSTEM SUPPORT SHALL BE OF SUFFICIENT SIZE AND DESIGN TO PREVENT DAMAGE TO THE SURROUNDING STRUCTURE ELEMENTS, EQUIPMENT AND FOUNDATION.
4. TEST SYSTEM USED SHALL HAVE TWO (2) PRESSURE GAUGES IN SERIES TO ENSURE PROPER GAUGE FUNCTION.
5. FORCES SHALL BE APPLIED THROUGH THE CENTER OF AND IN ALIGNMENT WITH THE ANCHOR ROD.
6. INCREASE APPLIED LOADS TO THE MAXIMUM SPECIFIED TARGET TENSION WITHOUT DISPLACEMENT FAILURE. DISPLACEMENT FAILURE IS PROVIDED BY CONTINUOUS DISPLACEMENT ASSOCIATED WITH A CONSTANT OR DECREASING APPLIED LOAD.
7. APPLY AN INITIAL LOAD OF 5% OF THE TARGET TENSION TO BRING ALL OF THE TEST SYSTEM COMPONENTS INTO FULL BEARING PRIOR TO BEGINNING THE TEST.
8. ADDITIONAL LOADS SHALL BE APPLIED IN INCREMENTS NOT TO EXCEED 15% OF TARGET TENSION AND EACH INCREMENT SHALL BE MAINTAINED FOR A 2-MINUTE PERIOD.
9. MAINTAIN COMPLETE LOAD-DISPLACEMENT RECORDS THROUGHOUT THE TEST. THE DATA RECORDS SHALL INCLUDE A TIME RECORD OF THE BEGINNING AND END OF EACH INCREMENT OF CONSTANT LOAD.

REMEDIAL ACTION FOR ANCHOR ROD FAILURE:

1. WITH THE APPROVAL OF THE ENGINEER OF RECORD, RE-DRILL THE HOLE AND INSTALL EITHER NEW ANCHOR ROD OR RECONDITION EXISTING ANCHOR ROD USING THE INSTALLATION MATERIALS SPECIFIED. IF THE EXISTING ROD IS REINSTALLED THE THREADS SHALL BE CLEANED TO THEIR ORIGINAL CONDITION. THIS INCLUDES RE-GALVANIZING, IF APPLICABLE.

REPORT OF RESULTS:

1. THE RESULTS OF THE TEST SHALL BE DOCUMENTED AND INCORPORATED INTO A POST MODIFICATION INSPECTION REPORT. THE FOLLOWING DATA SHALL BE INCLUDED:
 - A. DATE OF TEST
 - B. TEST COMPANY AND CONTACT NAME
 - C. TEST EQUIPMENT USED INCLUDING 6 MONTH CALIBRATION CERTIFICATION
 - D. LOCATION OF ALL POST-INSTALLED ANCHORS TESTED
 - E. SIZE AND GRADE OF ANCHOR BOLTS TESTED
 - F. EPOXY AGENT OR CEMENTITIOUS GROUT USED
 - G. DRAWINGS, SKETCHES AND PHOTOGRAPHS
 - H. WEATHER CONDITIONS AND TEMPERATURE
 - I. SUMMARY OF THE TEST FINDING INCLUDING LOAD-DISPLACEMENT DATA TABLE
 - J. ADDITIONAL OBSERVATIONS AND COMMENTS

PLANS PREPARED FOR:

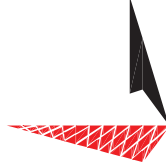


12920 SE 38TH STREET
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(NEW HAVEN COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
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www.tepgroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:
DRAWN BY: RST		
CHECKED BY: JAB		

SHEET TITLE:

TOWER ELEVATION AND MODIFICATION SCHEDULE

SHEET NUMBER:	REVISION:
S-1	0
TEP #:	100459

MODIFICATION SCHEDULE

NO.	MODIFICATION DESCRIPTION	ELEVATION (FT.)
1	INSTALL PROPOSED ANCHOR BOLTS AND STIFFENERS. SEE SHEETS S-2 AND S-3 FOR DETAILS.	0
2	INSTALL PROPOSED SPLICE REINFORCEMENT. SEE SHEET S-4 FOR DETAILS.	17.8 - 22.3
3	REMOVE AND REPLACE THE EXISTING CONCEALMENT SECTION. SEE SHEETS S-5 AND S-6 FOR DETAILS.	85 - 125
4	MODIFICATION INSPECTION BY TEP. CONTACT TEP FOR FEE: PM@TEPGROUP.NET	-

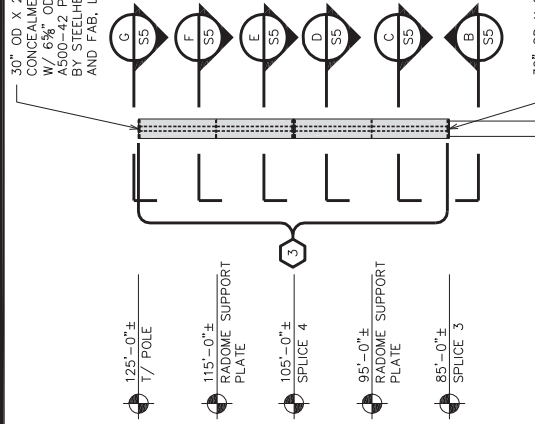
NOTES:

- IT'S THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE THE MODIFICATION INSPECTOR/ENGINEER OF RECORD WITH A SEALED CERTIFIED WELD INSPECTION REPORT. THIS REPORT SHALL DOCUMENT THE ENTIRE WELDING PROCESS (PRE/DURING/POST) WITH PROPER PHOTOS. WELDING SHALL CONFORM TO AWS D1.1/S1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL". FOR ADDITIONAL NOTES, SEE WELDING NOTES.
- NDE OF THE CIRCUMFERENTIAL WELD OF THE BASE PLATE TO THE SHAFT CONNECTION IS REQUIRED. PLEASE SEE ENG-SOW-1033 REQUIREMENTS FOR MONOPOLE BASEPLATE TO PREVENT CONNECTION FAILURE. NOTIFY THE EOR AND T-MOBILE TOWERS ENGINEERING IMMEDIATELY IF ANY CRACKS ARE SUSPECTED OR OBSERVED. BEFORE THE ANY CRACKS ARE SUSPECTED OR OBSERVED, THE WELD SHALL BE FULLY REWELDED TO THE FULL PENETRATION WELDING TO THE BASE PLATE. MODIFICATIONS THAT HAVE BEEN WELDED TO THE BASE PLATE PART OF THIS ACTIVE REINFORCEMENT DESIGN SHALL BE INCLUDED IN THE NDE SCOPE OF WORK.

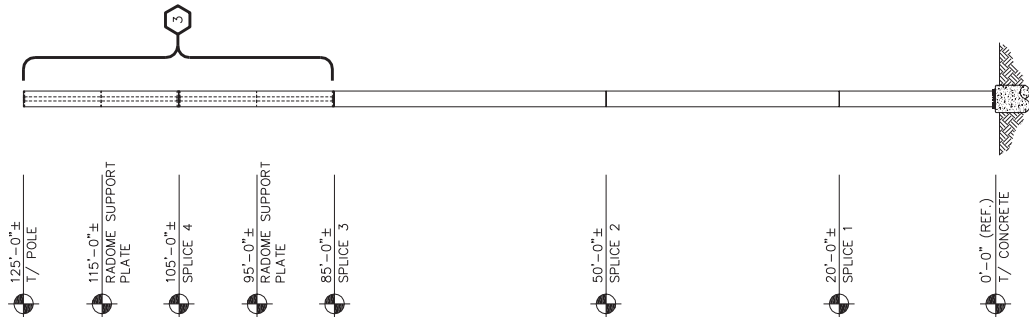
ATTENTION

EXISTING ANTENNAS, COAX, ANTENNA MOUNTS, AND OTHER APPURTENANCES WILL NEED TO BE REMOVED IN ORDER TO INSTALL THE PROPOSED TOWER MODIFICATIONS. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE EXISTING CARRIERS ON THE TOWER FOR REMOVAL OF THE EXISTING EQUIPMENT AND REINSTALLATION OF THE REMOVED EQUIPMENT ONCE CONSTRUCTION IS COMPLETE. IT SHOULD BE NOTED THAT THE TYPE OF REMOVAL OF THE EXISTING EQUIPMENT WILL VARY. ANTENNA MOUNTS BE INSTALLED OVER ANY CLEARANCE ISSUES THAT MAY ARISE FROM THE INSTALLATION OF THE MODIFICATIONS. IF THIS IS THE CASE THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD (TEP) AND OBTAIN WRITTEN AUTHORIZATION OF THE PROPOSED REPLACEMENT ANTENNA MOUNTS PRIOR TO INSTALLATION.

30" OD X 20' ANT. CONCEALMENT SHROUD W/ 6% OD X 0.432W A500-42 PIPE SUPPLIED BY STEELHEAD METAL AND FAB, LLC.



30" OD X 20' ANT. CONCEALMENT SHROUD W/ 8% OD X 0.875W A500-42 PIPE SUPPLIED BY STEELHEAD METAL AND FAB, LLC.

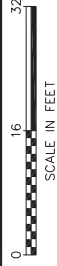


TOWER ELEVATION (PROPOSED)

SCALE: 1/8" = 1'-0"

TOWER ELEVATION (EXISTING)

SCALE: 1/8" = 1'-0"



PLANS PREPARED FOR:



PROPOSED BASE PLATE EXTENSION (A572-50) WITH 1/8" DIA. HOLE. MATCH PROPOSED BASE PLATE THICKNESS WITH EXISTING PLATE THICKNESS. SEE SHEET S-3 FOR DETAILS.

EXISTING REINFORCEMENT CAGE

EXISTING ANCHOR BOLTS

Ø2'-6" BOLT CIRCLE

EXISTING MONOPOLE SHAFT

EXISTING BASE PLATE

PROPOSED ANCHOR BOLT AND STIFFENER. SEE SHEET S-3 FOR DETAILS.

EXISTING FOUNDATION

PROJECT INFORMATION:

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SITE #: CT11209D

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 861-6351
www.tepgroup.net

SEAL:



September 12, 2012

0	09-12-12	MODIFICATION DRAWINGS	
REV	DATE	ISSUED FOR:	
DRAWN BY: RST		CHECKED BY: JAB	

SHEET TITLE:

SECTION DETAILS

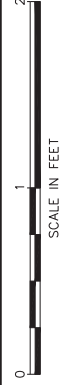
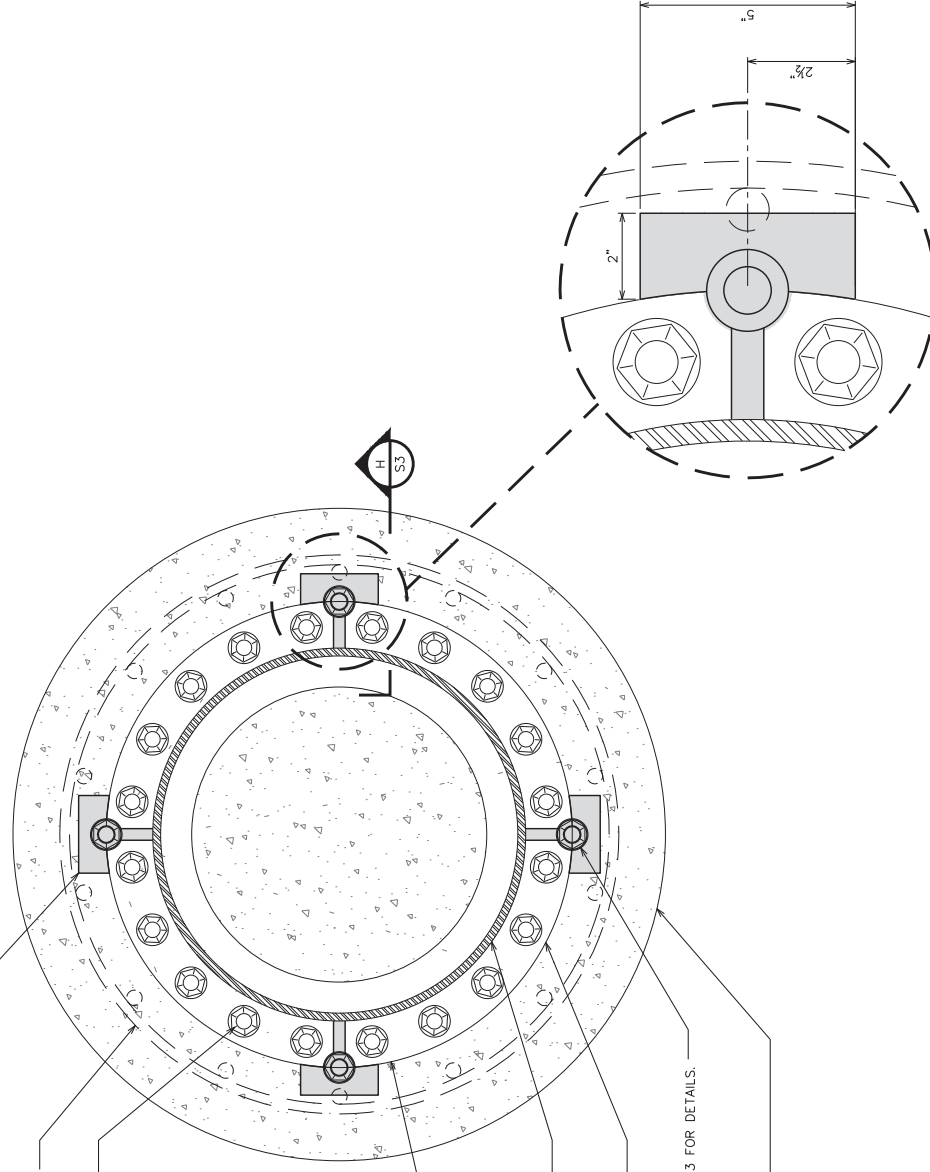
SHEET NUMBER:

S-2

REVISION:

0

TEP # 1004459



SECTION

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

A

ATTENTION

- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING THE EXISTING REINFORCING BARS DURING DRILLING OPERATIONS. CONTACT TEP IMMEDIATELY IF THE EXISTING REINFORCING BARS ARE ENCOUNTERED AND INTERFERE WITH THE PROPOSED MODIFICATION. MINOR ADJUSTMENT TO THE PROPOSED LOCATION OF THE NEW ANCHORS MAY BE REQUIRED.
- NEW ANCHOR ROD REINFORCING SHALL BE INSTALLED PER MFG'S RECOMMENDATIONS. ONCE ALL EPOXY HAS CURED THE NEW ANCHOR BOLT REINFORCING SHALL BE PROOF LOADED TO 50.9 KIPS. SEE SHEET N-4 FOR TESTING PROCEDURE. TIGHTEN ALL HEAVY HEX NUTS TO SNUG TIGHT.

NOTES:

1. FOR ORDERING HILTI PRODUCTS CONTACT HILTI, INC. AT (800) 879-8000.

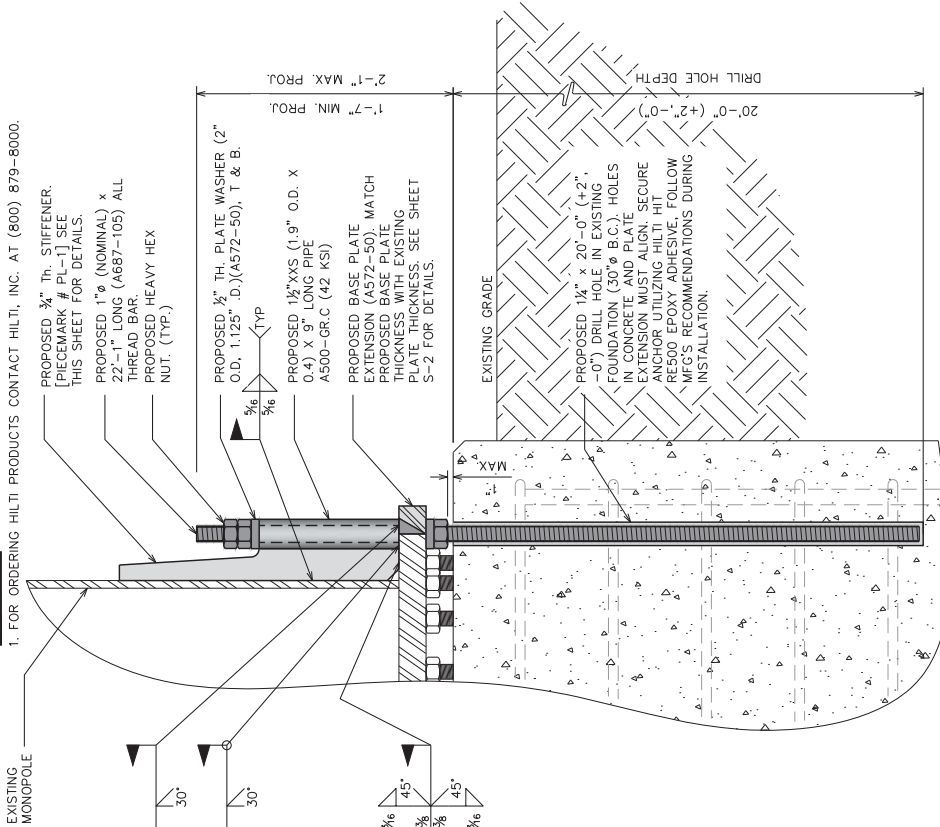
PROPOSED $\frac{3}{4}$ " TH. STIFFENER.
[PIECEMARK # PL-1] SEE
THIS SHEET FOR DETAILS.

PROPOSED 1"Ø (NOMINAL) x
22"-1" LONG (A687-105) ALL
THREAD BAR.
PROPOSED HEAVY HEX
NUT. (TYP.)

PROPOSED $\frac{1}{2}$ " TH. PLATE WASHER (2"
O.D., 1.125" D.)(A572-50), T & B.

PROPOSED $1\frac{1}{2}$ "xXS (1.9" O.D. x
0.4" x 9" LONG PIPE
A500-GR.C (42 KSI)

PROPOSED BASE PLATE
EXTENSION (A572-50). MATCH
THICKNESS WITH EXISTING
PLATE. APPROX. SEE SHEET
S-2 FOR DETAILS.



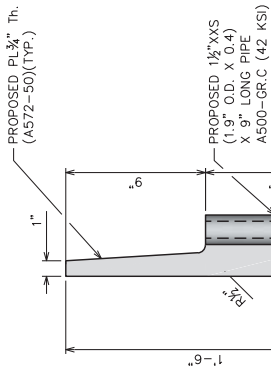
SECTION

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

(H)

SCALE IN FEET

2



ELEVATION VIEW

PLAN VIEW

PIECEMARK#: PL-1

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

2

PLANS PREPARED FOR:

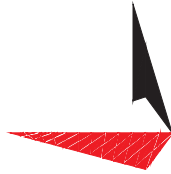


PROJECT INFORMATION:

**MILFORD SHORE AREA
SITE #: CT11209D**

234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)

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SHEET TITLE:

**ANCHOR BOLT
REINFORCEMENT
DETAILS**

SHEET NUMBER:

S-3

REVISION:

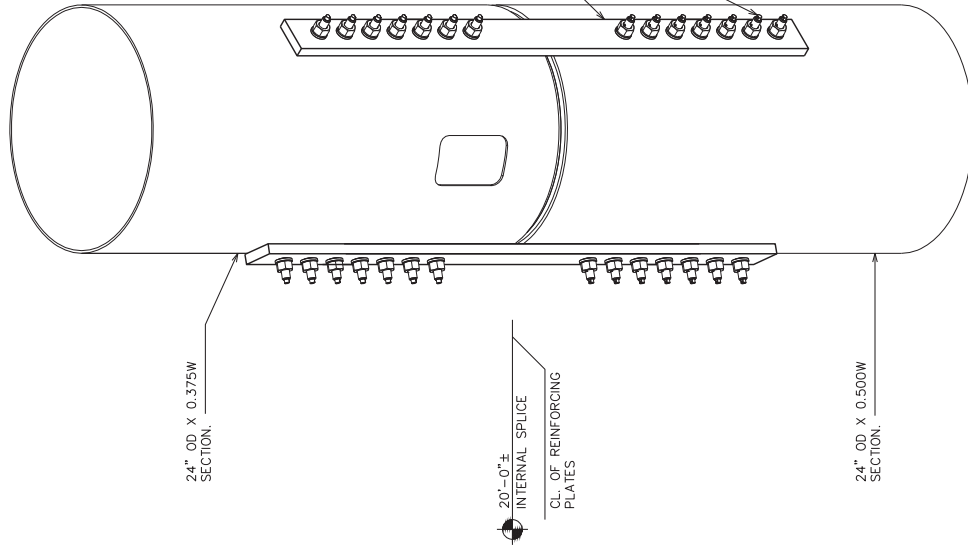
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TEP # 100459

SCALE IN FEET

NOTE:

- 1. FOR ORDERING AJAX FASTENERS CONTACT IRA SVENDSGAARD AND ASSOCIATES, (530) 647-8225.

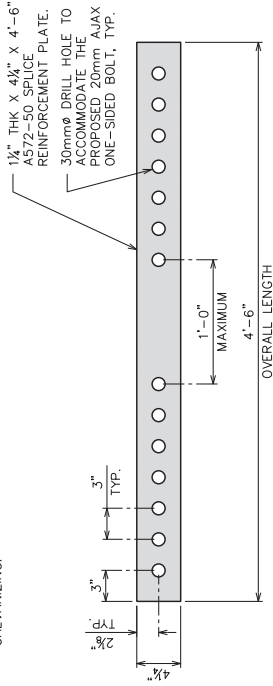


SPLICE REINFORCEMENT

SCALE: N.T.S.

NOTES:

- 1. AJAX FASTENERS: (530) 647-8225 (PETERS@RASVENS.COM)
- 2. HOLE DIMENSIONS GIVEN DO NOT INCLUDE A TOLERANCE FOR GALVANIZING.



REINFORCEMENT PLATE DETAIL

SCALE: 1" = 1'-0"



PLANS PREPARED FOR:



12920 SE 38TH STREET
 BELLEVUE, WA 98006
 OFFICE: (425) 383-5335

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0	09-12-12	MODIFICATION DRAWINGS	
REV	DATE	ISSUED FOR:	
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SHEET TITLE:

**SPLICE REINFORCEMENT
 DETAILS**

SHEET NUMBER:

S-4

REVISION:

0

TEP # 1004459

PLANS PREPARED FOR:



12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335

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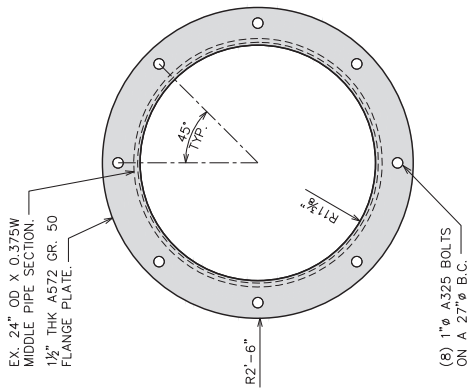
September 12, 2012

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DRAWN BY: RST		CHECKED BY: JAB

SHEET TITLE:

**PROPOSED
CONCEALED SECTION
DETAILS I**

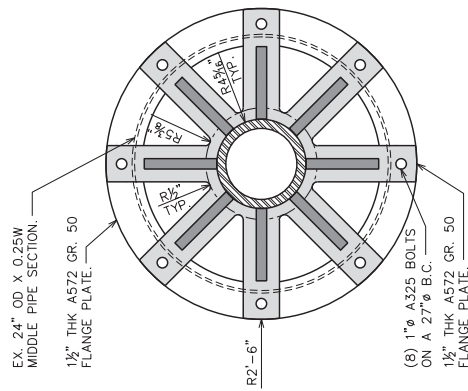
SHEET NUMBER: **S-5**
REVISION: **0**
TEP #: 1004459



NEW TOP FLANGE DETAIL - 85'

SCALE: 1" = 1'-0"

B



BOLTED SPOKE FLANGE DETAIL - 85'

SCALE: 1" = 1'-0"

C



PLANS PREPARED FOR:



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OFFICE: (425) 383-5335

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SHEET TITLE:

**PROPOSED
CONCEALED SECTION
DETAILS II**

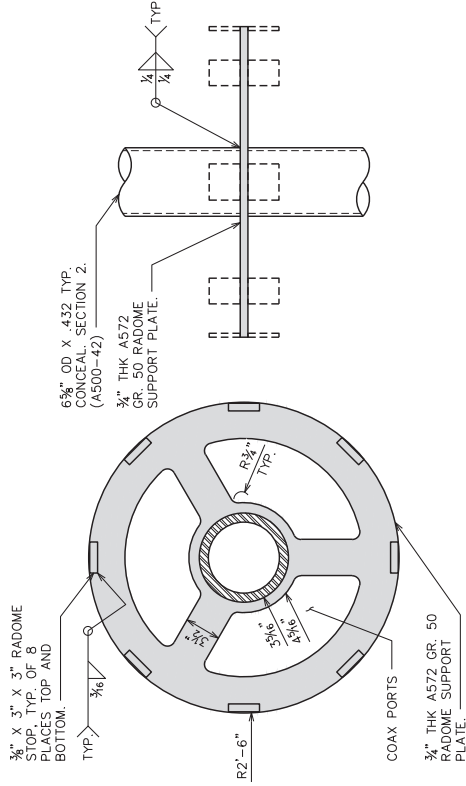
SHEET NUMBER:

S-6

REVISION:

0

TEP # 100459

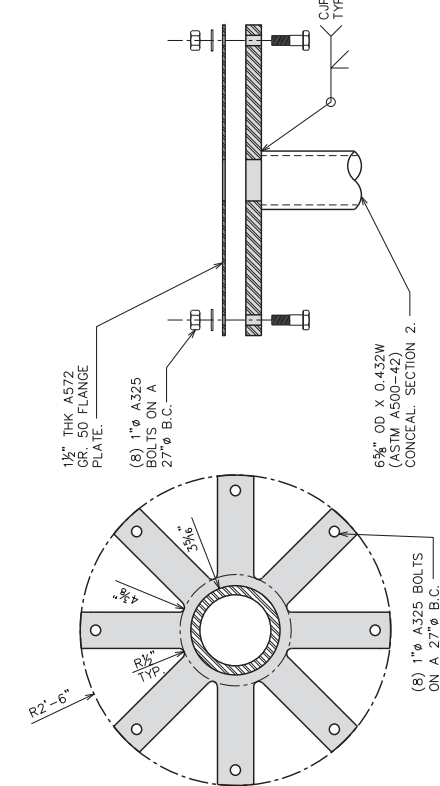
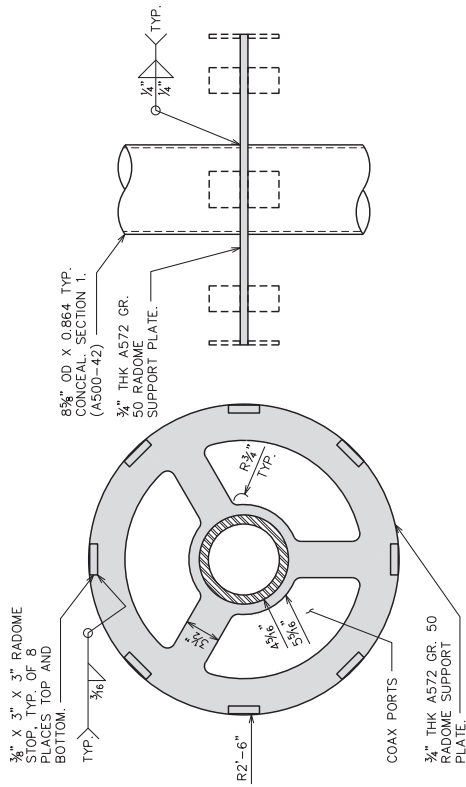


RADOME SUPPORT PLATE - 115'

SCALE: 1" = 1'-0"

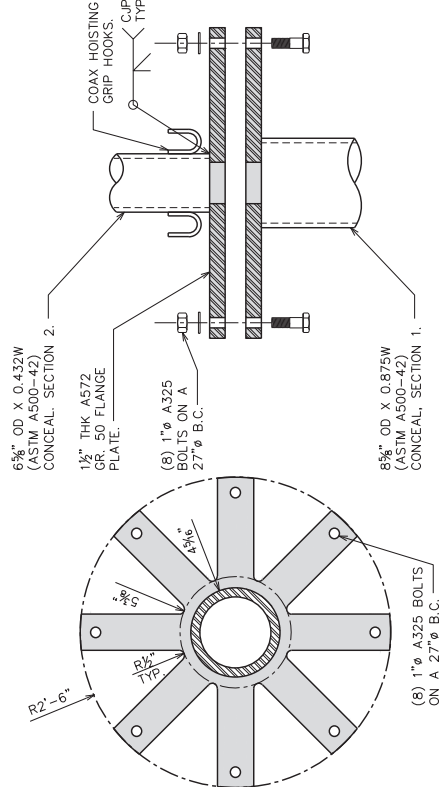
RADOME SUPPORT PLATE - 95'

SCALE: 1" = 1'-0"



BOLTED SPOKE FLANGE DETAIL - 125'

SCALE: 1" = 1'-0"



BOLTED SPOKE FLANGE DETAIL - 105'

SCALE: 1" = 1'-0"