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

November 7, 2017

RE: EM-CING-084-150416
Notice of Completion of Construction & PE Certification for Cingular Wireless/AT&T facility at: 234 Melba Street, Milford, CT
(ATT NO. CT5601)

Dear Ms. Bachman:

The purpose of this letter is to notify you that construction activity associated with the above referenced decision has been completed. Also see the accompanying PE Certification (Post Mod Inspection Report).

If you have any questions or need any additional information regarding this facility please do not hesitate to contact me.

Sincerely,

Timothy M. Burks

Tim Burks
SAI Communications
Agent for New Cingular Wireless/AT&T Mobility, Inc.
27 Northwestern Drive
Salem, New Hampshire 03079

Cc: Chris Fisher, Dan Laub - Cuddy Feder (via email)
SAI Construction (via email)
Kellie Dunn (via email)
CT Siting Council (paper copy)

March 4, 2015

Jerry Bruno
Crown Castle
500 West Cummings Park, STE 3600
Woburn, MA 01801
(781) 970-0069
Jerry Bruno.Contractor@crowncastle.com

Sinnott Gering and Schmitt Towers, INC
14301 First National Bank Pkwy, STE 100
Omaha, NE 68154
(402) 507-5170
SGS_PMI@sgstowers.com

Subject: ***Modification Inspection Report***

Crown Castle Designation:	**Crown Castle BU Number:**	825998
	Crown Castle Site Name:	Milford Shore Area
	Crown Castle JDE Job Number:	245639
Engineering Firm Designation:	**SGS Project Number:**	130549
Site Data:	**234 Melba Street Milford, CT 06460 N 41° 12' 36.018", W 73° 1' 8.45" 125 Foot Monopole**	

Dear Mr. Bruno,

Sinnott Gering and Schmitt Towers, Inc. (SGS) is pleased to submit this "Modification Inspection Report" (MI Report) to Crown Castle for the modification/reinforcement to the subject structure. This Modification Inspection (MI) was performed in accordance with Crown Castle ENG-SOW-10007 Modification Inspection SOW, Contract Documents, and Crown Castle Purchase Order number 590237. The purpose of this MI is to confirm that the modification installation configuration and workmanship are in accordance with the contract document(s) listed in Table 2. The MI is not a review of the adequacy or effectiveness of the modification/reinforcement solution.

Table 1 – General Information

	Company	Contact	Dates on Site
MI Inspector	SGS	Nicholas J. Schmitt, P.E., S.E.	N/A
MI Inspector Field Representative (if applicable)	SGS	Matt Cialdini	January 15, 2015
■ Independent	☐ EOR	☐ Turnkey	
Modification Design EOR	TEP	Andrew Haldane, P.E.	N/A
General Contractor	LCC	Keith Stackhouse	Unknown
Sub to the General Contractor	N/A	N/A	N/A
Field CWI for the General Contractor	Materials Testing	Chris Thomas, C.W.I.	February 3, 2015
Field NDE for the General Contractor		Henry Daricek, C.W.I.	December 22, 2014 to February 3, 2015

Table 2 – Documents

Document(s)	Remarks	Source
Modification Drawings Date: 3/6/2014 EOR: Andrew Haldane, P.E. Job#: 100459 R1	Creator of Drawings: TEP Job #: 100459 R1 Date of Drawings: 3/6/2014	CCI sites Drawing File: N/A

Based on our inspection, SGS determines this project:

X PASSING MI

The configuration, materials and/or workmanship of the modifications are installed in accordance with the Contract Documents and no deficiencies were found.

EXECUTIVE SUMMARY

MODIFICATION	CONFIGURATION	MATERIALS	WORKMANSHIP
Install Anchor Rods & Anchor Rod Brackets at Tower Base.	Passing	Passing	Passing
Note: Existing Base Plate Configuration was Different than Designed. Note: Anchor Rod Hole Diameter was Larger than Designed. Note Weld Configuration was Different than Designed. Note: Anchor Rod Installed was Different than Designed. Note: Anchor Rod Configuration was Different than Designed. Note: Anchor Bolt Washers were Notched for Fit Up. Note: A Notch was Observed in the Base Plate. Note: Anchor Rod Depth is More Shallow than Designed. See Section 6.3.2 for EOR Approval E-Mails.			
Install Splice Plate Reinforcement. 17’ 9” to 22’ 3”.	Passing	Passing	Passing
Note: Splice Plate Configuration was Different than Designed. See Section 6.3.2 for EOR Approval E-Mail.			
Note: Additional Splice Plate Reinforcement was Installed. Note: Capacity of the Tower Increased from 84% to 86% at the Flange Connection. See Section 6.3.2 for Crown/EOR Approval E-Mail.			
Replace Existing Concealment Section. From 85’ to 125’.	Passing	Passing	Passing
Note: Concealment Section was Different than Designed. See Section 6.3.2 for EOR Approval E-Mail & Section 6.1.2 EOR Approved Shop Drawings.			

All observations were performed after the construction was complete. SGS was not present during the construction phase. The onsite PMI was performed by Matt Cialdini, SGS.

We at SGS appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

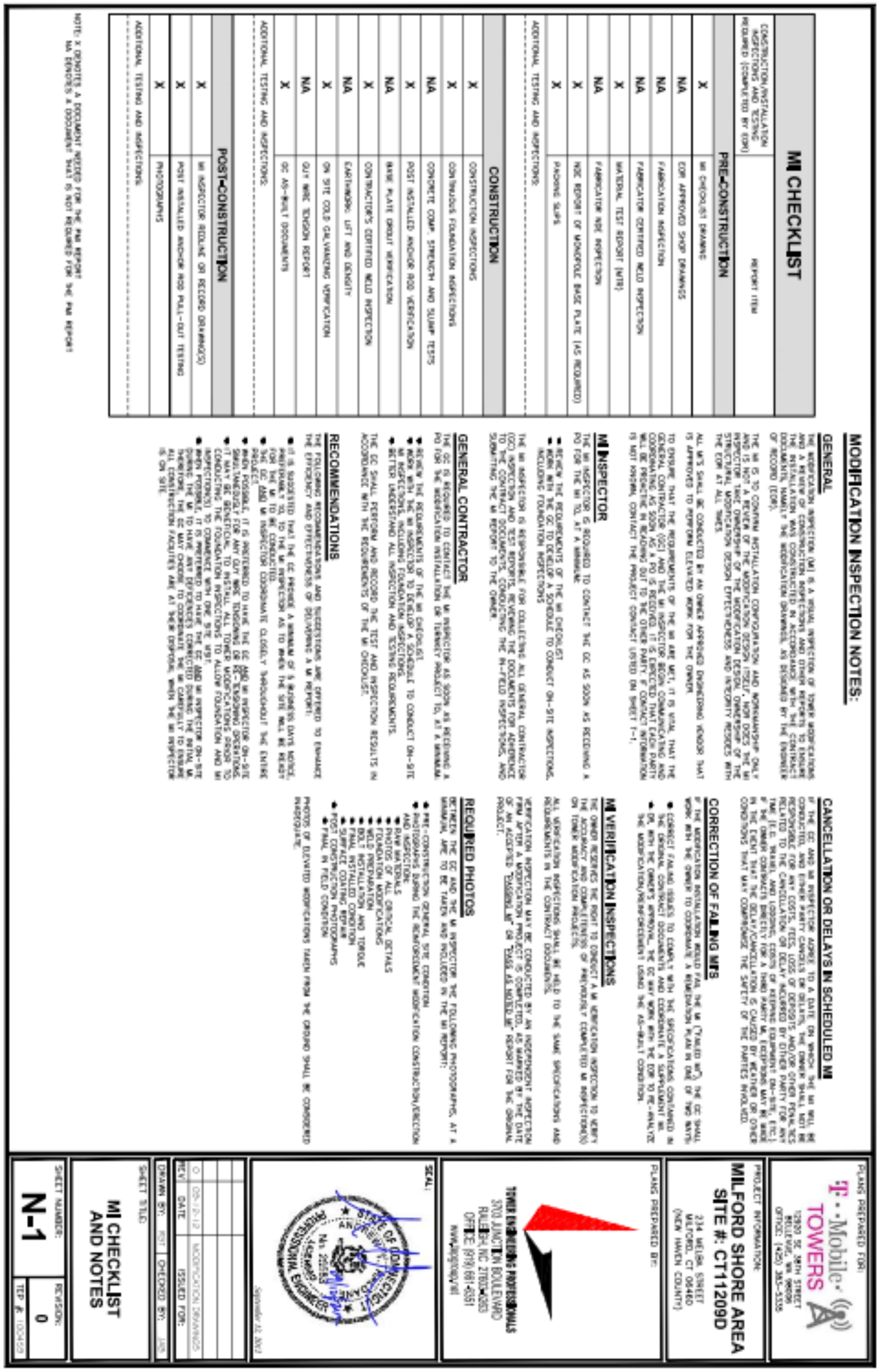
Respectfully submitted,

Nick Schmitt, P.E., S.E.

Table of Contents

PRE-CONSTRUCTION

6.1.1 MI CHECKLIST DRAWING



6.1.2 EOR APPROVED SHOP DRAWINGS

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3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net

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☑ REVIEWED AS NOTED
☐ REVIEWED AS NOTED – RESUBMIT
☐ REVISE AND RESUBMIT

BY: JSC
DATE: 4/24/14

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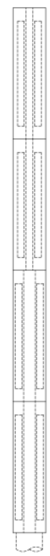

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SITE: CT11209D; MILFORD SHORE AREA
234 MELBA STREET
MILFORD, CT 06460

STEALTH JOB #: TM14-00281W-33R0

DRAWING INDEX

T1	TITLE SHEET
N1-N2	NOTES & SPECIFICATIONS
S1	ASSEMBLY - ELEVATIONS
S2-S4	DETAILS

STATE OF CONNECTICUT – ROGER T. ALWORTH – No. 26467 – LICENSED PROFESSIONAL ENGINEER

Apr 23, 2014

VECTOR ENGINEERS
9138 S. STATE STREET, SUITE 101
SANDY, UT 84070
P: (801) 990-1775 F: (801) 990-1776
VECTOR PROJECT: U0142-199-141

T1 — 4/23/14 — REVISION 2

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DESIGN NOTES:

STRUCTURAL DESIGN IS BASED ON THE INTERNATIONAL BUILDING CODE, 2003 EDITION & THE TIA/EIA-222-F STANDARD

SITE LOCATION:
NEW HAVEN COUNTY, CT

DESIGN LOADS:
WIND:
BASIC WIND SPEED: 95 MPH (FASTEST MILE) PER TIA/EIA-222-F STANDARD
EQUIVALENT 3-SECOND GUST = 110 MPH

ICE: 1.25" RADIAL ICE THICKNESS @ 82 MPH (FASTEST MILE)

ESTIMATED WEIGHT (INCLUDING ANTENNAS AND COAX):
4.6 k lb (1.0 DEAD)

REACTIONS:

SHEAR, V = 3.1 k (1.0 WIND)
AXIAL, P = 6.6 k (1.0 DEAD + 1.0 ICE)
MOMENT, M = 73 k-ft (1.0 WIND)

THE REACTIONS V & M LISTED ABOVE SHALL BE CONSIDERED TO ACT IN ANY HORIZONTAL DIRECTION. ANALYSIS OF THE MONOPOLE SUPPORT STRUCTURE TO RESIST THE DESIGN REACTIONS LISTED ABOVE IS THE RESPONSIBILITY OF OTHERS.

MATERIAL NOTES:

1. ALL STEEL PIPES SHALL CONFORM w/ ASTM A500 GR. B (42 KSI MIN. YIELD STRENGTH)
2. ALL OTHER STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36, U.N.O.
3. ALL WELDING SHALL BE PEFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND PROCEDURES OF THE AMERICAN WELDING SOCIETY (AWS) BY CERTIFIED WELDERS PER AWS D1.1 FOR STEEL AND AWS D1.2 FOR ALUMINUM. ALL WELDING SHALL BE PREFORMED IN A SHOP APPROVED BY THE BUILDING OFFICIAL. STEEL WELDS SHALL BE BY E70XX LOW HYDROGEN ELECTRODES
4. ALL STEEL SURFACES TO BE THOROUGHLY COATED WITH A RUST INHIBITIVE RED OXIDE PRIMER, U.N.O.
5. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD AS DEFINED BY AISC-LRFD 3RD EDITION

GENERAL

1. THE TYPICAL NOTES SHALL APPLY FOR ALL CASES UNLESS OTHERWISE SPECIFICALLY DETAILED WITHIN THE DRAWINGS. SOME NOTES MAY NOT BE APPLICABLE IN PART OR IN WHOLE FOR EVERY PROJECT.
2. ANY ITEMS REFERENCED AS BEING ON "HOLD" ARE TO BE INCLUDED IN THE WORK AS SHOWN, HOWEVER, CONSTRUCTION OR FABRICATION IS NOT TO BEGIN UNTIL THE "HOLD" REFERENCE IS REMOVED.
3. DIMENSIONS CONTAINED WITHIN MUST BE FIELD VERIFIED AND CUSTOMER APPROVED PRIOR TO FABRICATION OF MATERIALS.
4. THE MODIFICATIONS DEPICTED IN THESE DRAWINGS ARE INTENDED TO PROVIDE STRUCTURAL SUPPORT FOR THE ADDITION OF THE ANTENNA SCREENING SYSTEMS OUTLINED WITHIN. THE EXISTING STRUCTURE OR BUILDING SHALL BE ANALYZED AND RETROFITTED AS REQUIRED, BY OTHERS, TO WITHSTAND THE LOADS IMPOSED BY THE NEW STEALTH) ENCLOSURE SHOWN ON THE DRAWINGS.
5. ANTENNA CONCEALMENT PRODUCTS SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK. CARE SHALL BE TAKEN IN THE INSTALLATION OF ANY AND ALL MEMBERS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS AND PROCEDURES, ALL APPLICABLE OSHA SAFETY GUIDELINES ARE TO BE FOLLOWED. STEALTH® IS NOT PROVIDING FIELD INSTALLATION SUPERVISION.
6. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO BEGINNING OF WORK THE CONTRACTOR SHOULD SURVEY THE JOB SITE THOROUGHLY TO MINIMIZE FIELD PROBLEMS.
7. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF THE CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE STRUCTURAL INTEGRITY OF THIS STRUCTURE IS DESIGNED TO BE ATTAINED IN ITS COMPLETED STATE. WHILE UNDER CONSTRUCTION ANY TEMPORARY BRACING OR SHORING WHICH MAY BE REQUIRED TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
9. THE PLANS AND DETAILS WITHIN DO NOT INCLUDE DETAILS OR DESIGN FOR DRAINAGE FROM OR WATERPROOFING OF EXTERIOR OR INTERIOR SURFACES OF THE EXISTING BUILDING OR STRUCTURE. THESE DETAILS MUST BE COMPLETED BY OTHERS.

COAX NOTE:

ROUTING THE LARGE QUANTITY OF COAX CABLES THROUGH THE CONCEALMENT BULKHEADS IS POSSIBLE (WHEN LAID OUT ON PAPER), BUT WILL BE VERY DIFFICULT IN REAL WORLD FIELD CONDITIONS. WHILE THE CABLES MAY PHYSICALLY FIT THROUGH THE BASE FLANGE ON TOP OF THE MONOPOLE AND THE SUBSEQUENT STEEL BULKHEADS ABOVE, ROUTING THEM PAST THE ANTENNAS IS UNPREDICTABLE, DEPENDING ON THE ANTENNA MOUNTING HARDWARE EMPLOYED, COAX CONNECTOR TYPE(S) USED, COAX ROUTING, AND RELATIVE AZIMUTH DIRECTIONS OF THE ANTENNAS IN THE POLE. STEALTH ® CAN NOT GUARANTEE THAT ALL OF THE COAX CAN BE ROUTED WITHOUT INTERFERENCE TO SOME OR ALL ANTENNAS. IT IS HIGHLY RECOMMENDED THAT THE INSTALLER MOCK UP THE COAX RUNS WITHIN THE CONCEALMENT AND DEVELOP A COAX ROUTING PLAN PRIOR TO INSTALLATION.

SPECIAL INSPECTIONS & STRUCTURAL OBSERVATION:

1. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED AS REQUIRED BY THE IBC TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
2. NO FIELD WELDING SHALL BE PERMITTED.
3. THE FOLLOWING SPECIAL INSPECTIONS (WHERE APPLICABLE) SHALL BE REQUIRED PER CHAPTER 17 OF THE IBC.
   - PERIODIC SPECIAL INSPECTION OF HIGH-STRENGTH BOLTING
4. NO STRUCTURAL OBSERVATION IS REQUIRED.

STEALTHSKIN PANELS

1. FASTENER HOLES IN STEALTHSKIN FOAM COMPOSITE PANELS ARE NOT FACTORY DRILLED AND MUST BE DRILLED IN THE FIELD.
2. PANEL FASTENERS TO BE SPACED 12" O.C. MAX. AND LOCATED 6" MAX. HORIZONTALLY FROM EACH EDGE AT TOP AND BOTTOM OF PANEL. MAINTAIN 1 ½" MIN. EDGE DISTANCE FROM ALL EDGES. 4' WIDE PANELS REQUIRE (4) FASTENERS TOP AND BOTTOM. 5' WIDE PANELS REQUIRE (4) FASTENERS TOP AND BOTTOM. CORNER PANELS REQUIRE (3) FASTENERS TOP AND BOTTOM PER SIDE.
3. WHEN FASTENER BOLT HEAD OR NUT BEARS DIRECTLY ON SURFACE OF STEALTHSKIN PANEL, TIGHTEN PANEL BOLTS ONLY ½ TURN PAST SNUG, APPLY THREAD LOCK COMPOUND TO THE THREADS OF METAL BOLTS. USE THIN BEAD OF EPOXY TO LOCK THE NUTS OF FRP BOLTS AND STEALTH® STAINLESS STEEL PANEL BOLTS. USE WASHER OR FLANGED HEAD BOLT, OR FASTENER WITH LARGE BEARING SURFACE.
4. PANELS WILL EXPAND AND CONTRACT DUE TO TEMPERATURE. WHEN INSTALLING PANELS IN COLD TEMPERATURES, EVENLY SPACE PANELS ALONG LENGTH OF SCREEN WALL WITH EQUAL GAPS BETWEEN PANELS TO ALLOW FOR EXPANSION DURING WARM TEMPERATURES.
5. ADJACENT FLAT PANELS ARE JOINED BY A VERTICAL FOAM SPLINE THAT IS INSERTED INTO GROOVES CUT INTO THE SIDE OF EACH PANEL. DO NOT LIFT PANELS BY GROOVES. PANELS MUST BE LIFTED WITH FORCE DIRECTED ONTO PANEL SURFACE.
6. ADJACENT RADIUS PANELS ARE JOINED BY A VERTICAL H-CHANNEL. INSERT PANELS INTO EACH SIDE OF H-CHANNEL.
7. RADIUS PANELS MUST BE EVENLY SPACED ALONG RADIUS SUPPORT. CONTRACTOR TO MEASURE LENGTH OF RADIUS SUPPORT AND DIVIDE BY THE NUMBER OF RADIUS PANELS TO DETERMINE PROPER SPACING. H-CHANNEL CONNECTORS ARE USED TO COVER THE GAP BETWEEN PANELS AND TO ALLOW FOR PANEL EXPANSION AND CONTRACTION.
8. SURFACES OF PANELS SHALL BE COATED WITH SUITABLE PAINT FOR UV PROTECTION. TOP EDGE OF PANEL MUST BE COVERED TO PREVENT WATER TRAVEL BETWEEN PANELS. USE SHERWIN WILLIAMS "COROTHANE II" OR PRE APPROVED EQUIVALENT.
9. EXPOSED TOP AND SIDE FOAM EDGES OF PANELS MUST BE COVERED OR COATED FOR UV PROTECTION. STEALTH® WILL PROVIDE PANEL EDGE CAPS TO BE FIELD APPLIED FOR THIS PURPOSE FOR MOST APPLICATIONS. PANEL EDGE CAPS TO BE SECURED WITH TEK SCREW INSTALLED @ 18" MAXIMUM SPACING ON THE INSIDE FACE OF THE PANEL.

DISCLAIMERS:

1. ALL STRUCTURAL COMPONENTS TO BE CONNECTED TOGETHER SHALL BE COMPLETELY FIT UP ON THE GROUND OR OTHERWISE VERIFIED FOR COMPATIBILITY PRIOR TO LIFTING ANY COMPONENT INTO PLACE. REPAIRS REQUIRED DUE TO FIT-UP OR CONNECTION COMPATIBILITY PROBLEMS AFTER PARTIAL ERECTION ARE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.
2. ALTHOUGH RARE, EXCESSIVE DEFLECTION SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN SLIM LINE OR MONOPOLE STRUCTURES AT LOW WIND SPEEDS. BECAUSE THE PHENOMENON IS INFLUENCED BY MANY INTERACTING VARIABLES, MOVEMENT AND OSCILLATIONS ARE GENERALLY UNPREDICTABLE. THE TOWER OWNER MUST PERIODICALLY OBSERVE THE STRUCTURE FOR EXCESSIVE DEFLECTION AND ANY RESULTING STRUCTURAL DAMAGE OR BOLT LOOSENING. IN THE EVENT OF EXCESSIVE MOVEMENT, VECTOR STRUCTURAL ENGINEERS MUST BE NOTIFIED IMMEDIATELY. MODIFICATIONS TO THE STRUCTURE MAY BE REQUIRED AT THE OWNER'S EXPENSE. THE CHANGES MAY ALTER THE AESTHETIC APPEARANCE OF THE STRUCTURE.

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BY: JSC
DATE: 4/24/14

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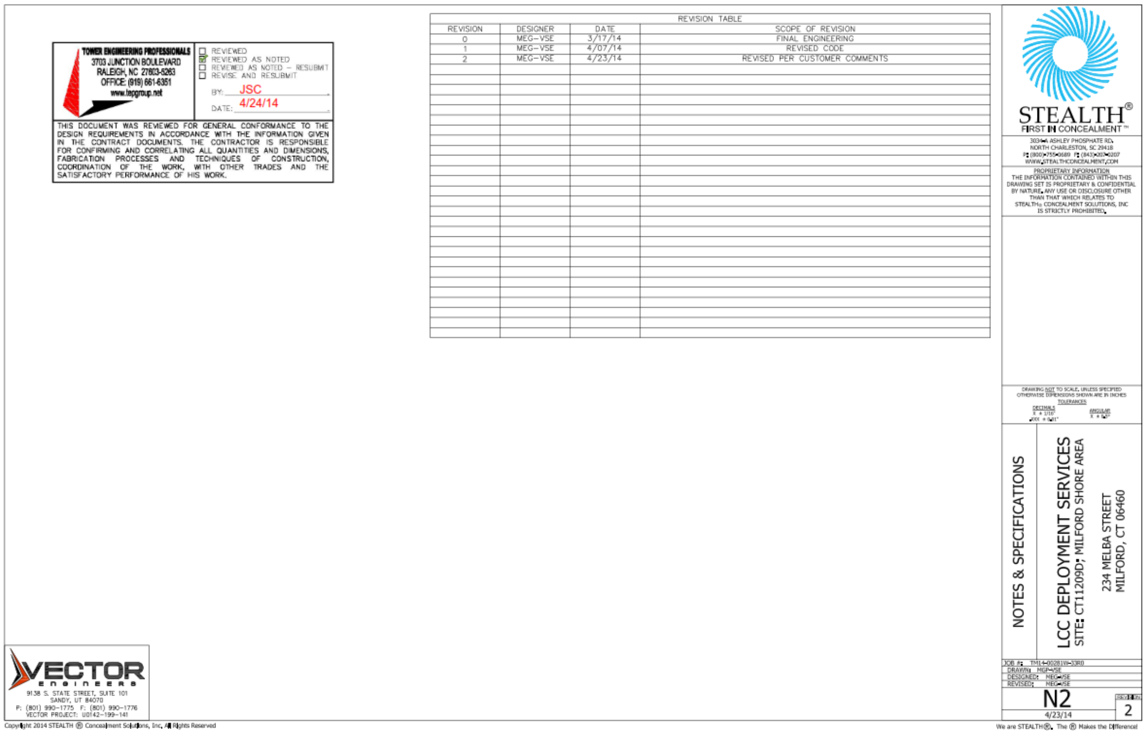
REVISION TABLE
REVISION | DESIGNER | DATE | SCOPE OF REVISION
0 | MEG-VSE | 3/17/14 | FINAL ENGINEERING
1 | MEG-VSE | 4/07/14 | REVISED CODE
2 | MEG-VSE | 4/23/14 | REVISED PER CUSTOMER COMMENTS
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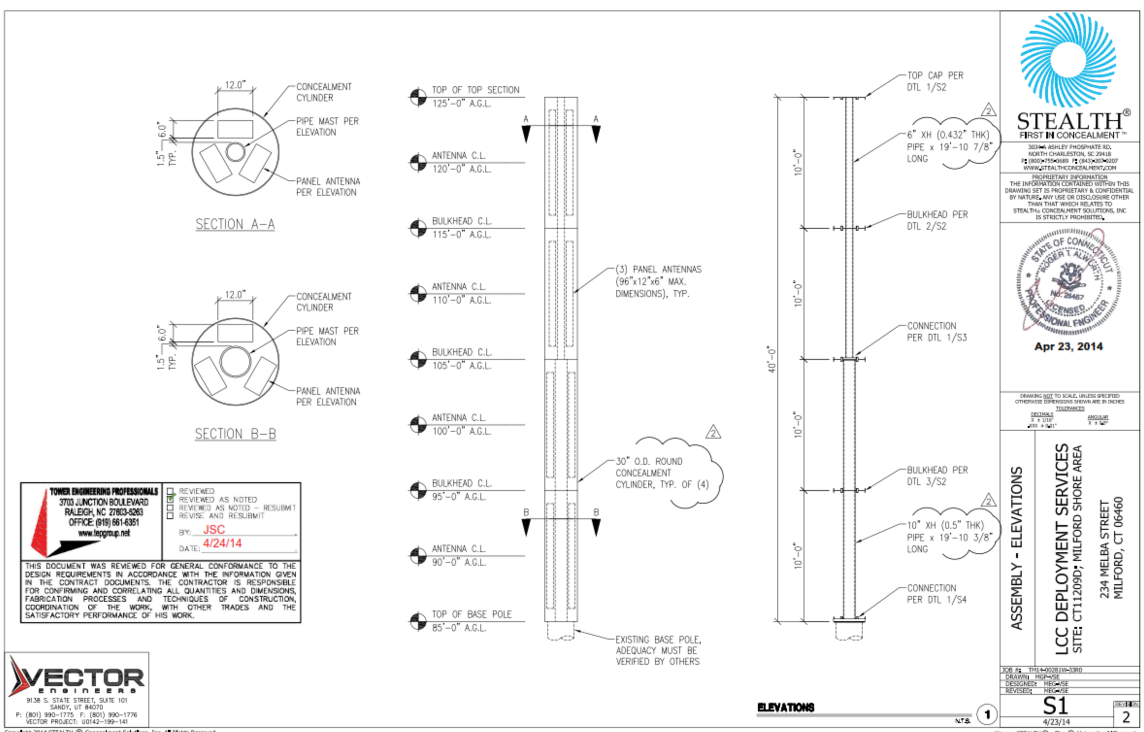
12.0"
CONCEALMENT CYLINDER
PIPE MAST PER ELEVATION
PANEL ANTENNA PER ELEVATION
6.0"
1.5" TYP.
SECTION A-A
SECTION B-B
TOP OF TOP SECTION 125'-0" A.G.L.
ANTENNA C.L. 120'-0" A.G.L.
BULKHEAD C.L. 115'-0" A.G.L.
ANTENNA C.L. 110'-0" A.G.L.
BULKHEAD C.L. 105'-0" A.G.L.
ANTENNA C.L. 100'-0" A.G.L.
BULKHEAD C.L. 95'-0" A.G.L.
ANTENNA C.L. 90'-0" A.G.L.
TOP OF BASE POLE 85'-0" A.G.L.
(3) PANEL ANTENNAS (96"x12"x6" MAX. DIMENSIONS), TYP.
30" O.D. ROUND CONCEALMENT CYLINDER, TYP. OF (4)
EXISTING BASE POLE, ADEQUACY MUST BE VERIFIED BY OTHERS
TOP CAP PER DTL 1/S2
6" XH (0.432" THK) PIPE x 19'-10 7/8" LONG
BULKHEAD PER DTL 2/S2
CONNECTION PER DTL 1/S3
BULKHEAD PER DTL 3/S2
10" XH (0.5" THK) PIPE x 19'-10 3/8" LONG
CONNECTION PER DTL 1/S4
10'-0"
40'-0"
ELEVATIONS
N.T.S.
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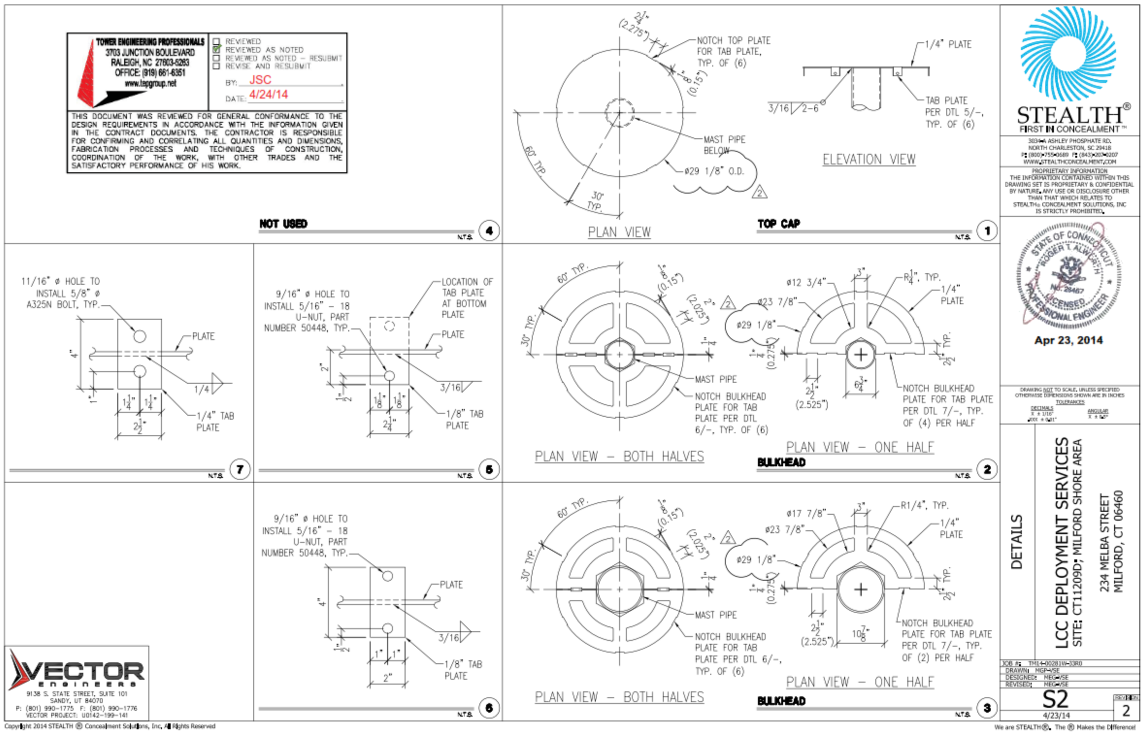
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NOT USED
NOTCH TOP PLATE FOR TAB PLATE, TYP. OF (6)
MAST PIPE BELOW
ø29 1/8" O.D.
PLAN VIEW
1/4" PLATE
TAB PLATE PER DTL 5/-, TYP. OF (6)
ELEVATION VIEW
TOP CAP
STEALTH®
FIRST IN CONCEALMENT
11/16" ø HOLE TO INSTALL 5/8" ø A325N BOLT, TYP.
PLATE
1/4" TAB PLATE
9/16" ø HOLE TO INSTALL 5/16" - 18 U-NUT, PART NUMBER 50448, TYP.
LOCATION OF TAB PLATE AT BOTTOM PLATE
1/8" TAB PLATE
MAST PIPE
NOTCH BULKHEAD PLATE FOR TAB PLATE PER DTL 6/-, TYP. OF (6)
PLAN VIEW - BOTH HALVES
NOTCH BULKHEAD PLATE FOR TAB PLATE PER DTL 7/-, TYP. OF (4) PER HALF
PLAN VIEW - ONE HALF
BULKHEAD
NOTCH BULKHEAD PLATE FOR TAB PLATE PER DTL 7/-, TYP. OF (2) PER HALF
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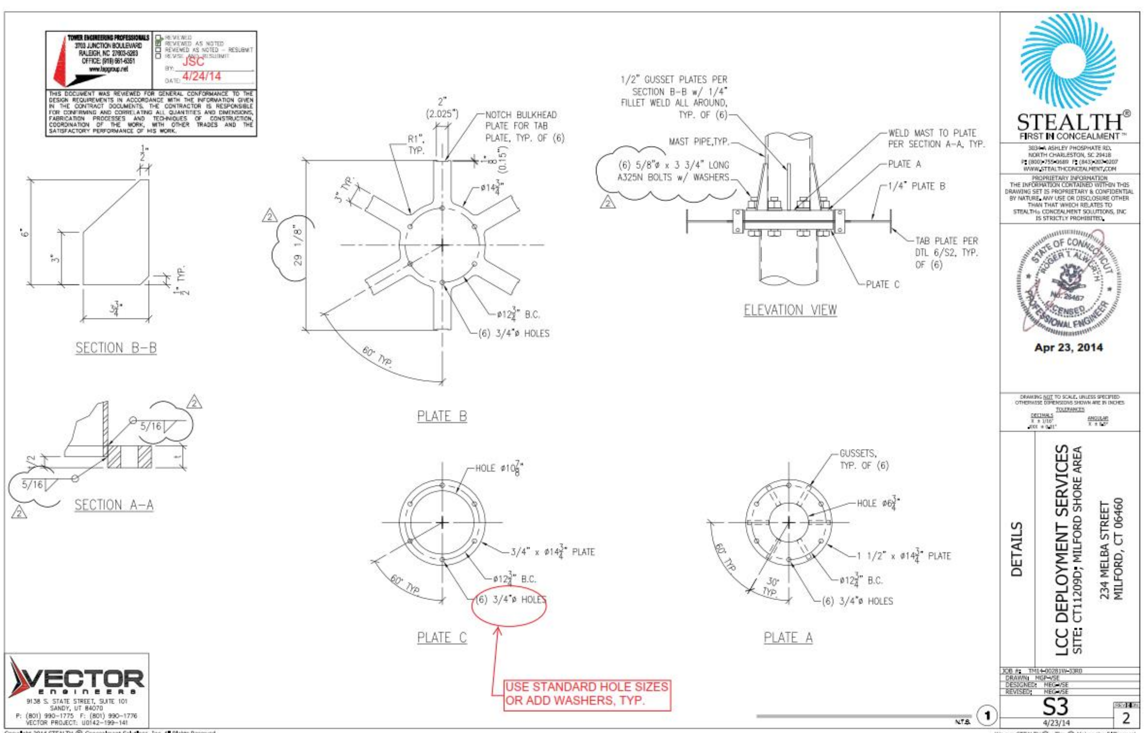
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SECTION B-B
SECTION A-A
NOTCH BULKHEAD PLATE FOR TAB PLATE, TYP. OF (6)
(6) 3/4"ø HOLES
PLATE B
1/2" GUSSET PLATES PER SECTION B-B w/ 1/4" FILLET WELD ALL AROUND, TYP. OF (6)
MAST PIPE,TYP.
(6) 5/8"ø x 3 3/4" LONG A325N BOLTS w/ WASHERS
WELD MAST TO PLATE PER SECTION A-A, TYP.
PLATE A
1/4" PLATE B
TAB PLATE PER DTL 6/S2, TYP. OF (6)
PLATE C
ELEVATION VIEW
GUSSETS, TYP. OF (6)
PLATE C
PLATE A
USE STANDARD HOLE SIZES OR ADD WASHERS, TYP.
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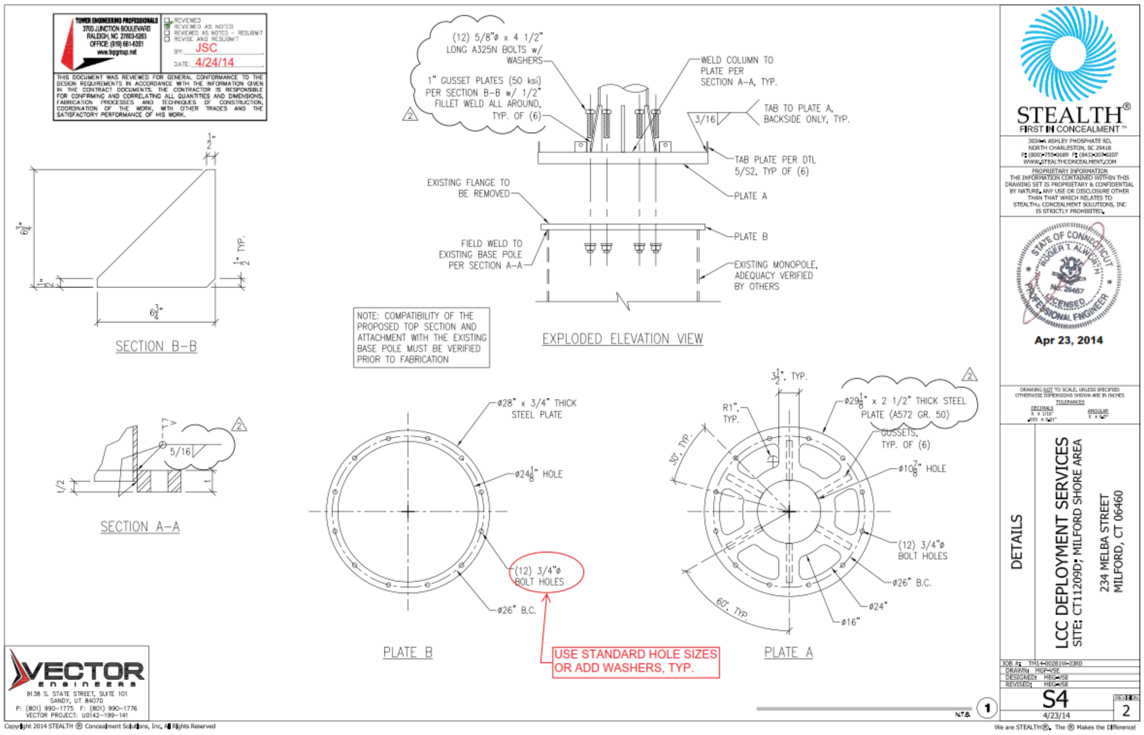
SITE: CT11209D; MILFORD SHORE AREA
234 MELBA STREET
MILFORD, CT 06460
S3
4/23/14
2


TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
REVIEWED AS NOTED
JSC
4/24/14
THIS DOCUMENT WAS REVIEWED FOR GENERAL CONFORMANCE TO THE DESIGN REQUIREMENTS IN ACCORDANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THE WORK WITH OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.
(12) 5/8"ø x 4 1/2" LONG A325N BOLTS w/ WASHERS
1" GUSSET PLATES (50 ksi) PER SECTION B-B w/ 1/2" FILLET WELD ALL AROUND, TYP. OF (6)
WELD COLUMN TO PLATE PER SECTION A-A, TYP.
TAB TO PLATE A, BACKSIDE ONLY, TYP.
TAB PLATE PER DTL 5/S2, TYP OF (6)
PLATE A
EXISTING FLANGE TO BE REMOVED
PLATE B
FIELD WELD TO EXISTING BASE POLE PER SECTION A-A
EXISTING MONOPOLE, ADEQUACY VERIFIED BY OTHERS
NOTE: COMPATIBILITY OF THE PROPOSED TOP SECTION AND ATTACHMENT WITH THE EXISTING BASE POLE MUST BE VERIFIED PRIOR TO FABRICATION
EXPLODED ELEVATION VIEW
SECTION B-B
SECTION A-A
ø28" x 3/4" THICK STEEL PLATE
(12) 3/4"ø BOLT HOLES
ø26" B.C.
USE STANDARD HOLE SIZES OR ADD WASHERS, TYP.
PLATE B
ø29 1/8" x 2 1/2" THICK STEEL PLATE (A572 GR. 50)
GUSSETS, TYP. OF (6)
(12) 3/4"ø BOLT HOLES
ø26" B.C.
ø24"
ø16"
PLATE A
STEALTH®
FIRST IN CONCEALMENT
Apr 23, 2014
DETAILS
LCC DEPLOYMENT SERVICES
SITE: CT11209D; MILFORD SHORE AREA
234 MELBA STREET
MILFORD, CT 06460
S4
4/23/14
VECTOR ENGINEERS
9138 S. STATE STREET, SUITE 101
SANDY, UT 84070
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6.1.3 MATERIAL TEST REPORT (MTR)

B20 CRS 6.625 X .432 80 A500 BARE

SOUTHLAND TUBE INCORPORATED

3525 Richard Arrington, Jr., Blvd. N.
Birmingham, AL 35234
Phone (205) 251-1884
Lab Fax (205) 421-4561
Lab@SouthlandTube.com

TEST REPORT

Customer Name: MARMON/KEYSTONE - CHARLOTTE
Customer PO No: 70-55092 -/

Heat No.:	SC1063	Spec/Grade:	A500-10/B/C
Description:	CARBON STEEL TUBING	Print Date:	5/22/2013
Size/Length:	6" Sch 80 42'	Wall Thickness:	0.4320

Carbon (C):	0.1900	Tin (Sn):	0.0050	Vanadium (V):	0.0020
Manganese (Mn):	0.3900	Nickel (Ni):	0.0400	Columbium (Cb):	0.0000
Phosphorus (P):	0.0060	Chromium (Cr):	0.0300	Titanium (Ti):	0.0000
Sulphur (S):	0.0050	Molybdenum (Mo):	0.0100	Boron (B):	0.0001
Silicon (Si):	0.0090	Aluminum (Al):	0.0270	Calcium (Ca):	0.0016
Copper (Cu):	0.1000	Nitrogen (N):	0.0080	Carbon Equiv. (CE):	0.2727

Sample Number	Sample Date	Tensile (psi)	Yield (psi)	Elongation (%)
SL37579	4/26/2013	68,300	55,800	29.50

We hereby certify that the above figures are correct as contained in the records of this company. Tensile testing (if applicable) is performed according to ASTM A370 and ASTM E8 (Yield Strength determined using 0.2% offset method).

QC'D
By: JKV
Date:
MAY 2 8 2013

Daniel Lerew
Director of Quality
Southland Tube Incorporated

Melted & Manufactured in the U.S.A.

STI Pickup No: 05TP049 STI Order No: 00304518 STI Item No: 6.625RS8042

NUCOR

NUCOR STEEL TUSCALOOSA, INC.

MILL TEST CERTIFICATE

1700 HOLT RD N.E.
Tuscaloosa, AL 35404-1000
800 800-8204

Load Number	Tally	Mill Order Number	PO NO / Line NO	Part Number	Certificate Number	Prepared
C051910	00000000536421	N-127054-001	APP-6743731 1		L457462-1	01/21/2014 03:36

Grade

Order Description:
A36, 0.2500 IN x 72.000 IN x 240.000 IN
Quality Plan Description:
A36/SA36/A70936: ASTM A36-08/ASME SA36-03/A709-36-10

Customer:

Sold TO:
KLOECKNER METALS Alpharetta GA
Ship TO:
KLOECKNER METALS Alpharetta GA

Shipped Item	Heat/Slab Number	Certified By	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Cb	V	Al	Ti	N2	B	Ca	Sn	CEV
3L1456D	A3Y4616-02 ***	A3Y4616	0.19	0.90	0.008	0.003	0.18	0.20	0.06	0.07	0.019	0.000	0.001	0.034	0.001	0.005	0.0001	0.0031	0.008	0.37
3L1457B	A3Y4616-03 ***	A3Y4616	0.19	0.90	0.008	0.003	0.18	0.20	0.06	0.07	0.019	0.000	0.001	0.034	0.001	0.005	0.0001	0.0031	0.008	0.37
3L1457C	A3Y4616-03 ***	A3Y4616	0.19	0.90	0.008	0.003	0.18	0.20	0.06	0.07	0.019	0.000	0.001	0.034	0.001	0.005	0.0001	0.0031	0.008	0.37
3L1457D	A3Y4616-03 ***	A3Y4616	0.19	0.90	0.008	0.003	0.18	0.20	0.06	0.07	0.019	0.000	0.001	0.034	0.001	0.005	0.0001	0.0031	0.008	0.37

Mercury has not come in contact with this product during the manufacturing process nor has any mercury been used by the manufacturing process. Certified in accordance with EN 10204 3.1. No weld repair has been performed on this material.
CERTIFIED IN ACCORDANCE WITH "EN 10204 3.1.B" NACE MR0175 Annex 2.1.2 compliant Manufactured to a fully killed fine grain practice. NUTEMPER TEMPER PASSED plate from coil
ISO 9001:2008 Registered, PED Certified

"***" indicates Heats melted and Manufactured in the U.S.A.

We hereby certify that the product described above passed all of the tests required by the specifications.

Dr. Quilin Yu - Metallurgist

NUCOR
PLATE MILL
P.O.Box 279
Winton, NC 27986
(252) 358-3700

Mill Test Report

Page 1

NUCOR It's our Nature!

Issuing Date : 04/11/2014 B/L No. : 384924 Load No. : 388932 Our Order No. : 126013/7 Cust. Order No. : 6777224

Vehicle No: ELS 8565

Specification : 1.5000" x 96.000" x 480.000"
ASTM A36-12/ASTM A709 Grade 36-13a/AASHTO M270Grade 36/ASME SA36 2011 Addenda, 2013 AASHTO M270 36

Sold To : KLOECKNER METALS CORP
500 COLONIAL CTR PKWY STE 500
ROSWELL,GA 30076

Ship To : FERRO UNION SOUTHEAST INC
2005 GRASSLAND PARKWAY
ALPHARETTA,GA 30004

Marking :

Heat No	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al(tot)	V	Nb	Ti	N	Ca	B	Sn	CEQ	PCM
4502602	0.17	0.83	0.014	0.004	0.21	0.30	0.08	0.08	0.02	0.024	0.003	0.001	0.002		0.0015	0.0000	0.011	0.36	0.24

Tensile Test								Charpy Impacts											
Plate Serial No	Pieces	Tons	Dir.	(psi) Yield	(psi) Tensile	Elongation % in 2"	Elongation % in 8"	Dir.	1	(%) shear	2	(%) shear	3	(%) shear	Ave.	(%) shear	Size	Temp	Min Ave.
4502602-04	2	19.60	T	42,400	72,100		18.6												
			T	42,600	72,600		20.6												

Manufactured to fully killed fine grain practice by Electric Arc Furnace. Welding or weld repair was not performed on this material. Mercury has not been used in the direct manufacturing of this material. Produced as continuous cast discrete plate as-rolled, unless otherwise noted in Specification.

Yield by 0.5EUL method unless otherwise specified. Ceq = C+(Mn/6)+((Cr+Mo+V)/5)+((Cu+Ni)/15)

Pcm = C+(Si/30)+(Mn/20)+(Cu/20)+(Ni/60)+(Cr/20)+(Mo/15)+(V/10)+5B

Melted and manufactured in the USA. ISO 9001:2008 certified (#006063) by SRI Quality System Registrar (#0985-09). PED 97/23/EC 7/2 Annex 1, Para. 4.3 Compliant. DIN 50049 3.1 EN 10204 3.1B(2004), DIN EN 10204 3.1(2005) compliant. For ABS grades only, Quality Assurance certificate 14-MMPQA-723

We hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with the applicable specifications, including customer specifications.

T. A. Depretis, Metallurgist

04/11/2014 10:53:59 AM

NUCOR
NUCOR STEEL TUSCALOOSA, INC.

MILL TEST CERTIFICATE

1700 HOLT RD N.E.
Tuscaloosa, AL 35404-1000
800 800-8204
customerservice@nucortusk.com

Load Number	Tally	Mill Order Number	PO NO | Line NO	Part Number	Certificate Number	Prepared
T061994	00000000553279	N-129749-001	APP-6777606 1		L469902-1	03/27/2014 19:47

Grade

Order Description: Hot Roll Plate From Coil
A36, 0.5000 IN x 72.000 IN x 480.000 IN
Quality Plan Description:
A36/SA36/A70936: ASTN A36-08/ASME SA36-03/A709-36-10

Customer:
Sold TO:
KLOECKNER METALS Alpharetta GA
Ship TO:
KLOECKNER METALS Alpharetta GA

Shipped Item	Heat/Slab Number	Certified By	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Cb	V	Al	Ti	N2	B	Ca	Sn	CEV	ACI
4C2617F	B4P6287-03 ***	B4P6287	0.18	0.86	0.013	0.003	0.05	0.21	0.05	0.06	0.016	0.000	0.001	0.037	0.001	0.006	0.0000	0.0022	0.006	0.35	

Shipped Item	Certified By	Heat Number	Yield ksi	Tensile ksi	Y/T %	ELONGATION % 2"	ELONGATION % 8"	Bend OK?	Hard HB	Charpy Impacts (ft-lbs) Size mm	1	2	3	Avg	Shear % 1	2	3	Avg	Test Temp
4C2617F	S4C2614FTT	B4P6287 ***	47.8	70.2	68.1	37.7													
4C2617F	S4C2615FTT	B4P6287 ***	49.7	69.6	71.4	40.3													
4C2617F	S4C2614MTT	B4P6287 ***	49.3	66.3	74.4	38.8													
4C2617F	S4C2615MTT	B4P6287 ***	49.1	66.2	74.2	35.7													

Items: 1 PCS: 2 Weight: 9801.2 LBS

Mercury has not come in contact with this product during the manufacturing process nor has any mercury been used by the manufacturing process. Certified in accordance with EN 10204 3.1. No weld repair has been performed on this material.
CERTIFIED IN ACCORDANCE WITH "EN 10204 3.1.B" NACE MR0175 Annex 2.1.2 compliant Manufactured to a fully killed fine grain practice. NUTEMPER TEMPER PASSED plate from coil
ISO 9001:2008 Registered, PED Certified

*** Indicates Heats melted and Manufactured in the U.S.A.

We hereby certify that the product described above passed all of the tests required by the specifications.

Dr. Quilin Yu - Metallurgist

NUCOR
PLATE MILL
P.O.Box 279
Winton, NC 27986
(252) 356-3700

Mill Test Report

Page 1

NUCOR It's our Nature.

Issuing Date : 03/11/2013 B/L No. : 351339 Load No. : 353253 Our Order No. : 108817/8 Cust. Order No. : 6623626

Vehicle No: TRK 16 TRL 175

Specification : 2.7500" x 96.000" x 480.000"
ASTM A572 Grade 50-12/ASTM A709 Grade 50-11/AASHTO M270-50
Type 2

Sold To : Kloeckner Metals Corporation
500 Colonial Center Parkway
Suite 500
ROSWELL,GA 30076

Ship To : FERRO UNION SOUTHEAST, INC.
2005 GRASSLAND PARKWAY
ALPHARETTA,GA 30004

Marking :

Heat No	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al(tot)	V	Nb	Ti	N	Ca	B	Sn	CEQ	PCM
3501552	0.20	1.28	0.022	0.002	0.24	0.15	0.08	0.08	0.02	0.034	0.068	0.001	0.002		0.0026	0.0004	0.008	0.46	0.30

Tensile Test

Plate Serial No	Pieces	Tons	Dir.	(psi) Yield	(psi) Tensile	Elongation % in 2"	Elongation % in 8"
3501552-05	1	17.96	T	53,900	85,100	31.5	
			T	52,300	83,100	32.5	

Charpy Impacts

Dir.	1	(ft-lbs) shear	2	(ft-lbs) shear	3	(ft-lbs) shear	Ave.	(ft-lbs) shear	Size	Temp	Min Ave.

Manufactured to fully killed fine grain practice by Electric Arc Furnace. Welding or weld repair was not performed on this material. Mercury has not been used in the direct manufacturing of this material. Produced as continuous cast discrete plate as-rolled, unless otherwise noted in Specification.

Yield by 0.5EUL method unless otherwise specified. Ceq = C+(Mn/6)+((Cr+Mo+V)/5)+((Cu+Ni)/15)

Pcm = C+(Si/30)+(Mn/20)+(Cu/20)+(Ni/60)+(Cr/20)+(Mo/15)+(V/10)+5B

Melted and manufactured in the USA. ISO 9001:2008 certified (#0080053) by SRI Quality System Registrar (80985-09). PED 97/23/EC 7/2 Annex 1, Para. 4.3 Compliant. DIN 50049 3.1.B/EN 10204 3.1B(2004), DIN EN 10204 3.1(2005) compliant. For ABS grades only, Quality Assurance certificate 09-MMPQA-546

We hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with the applicable specifications, including customer specifications.

T. A. Depretis

03/11/2013 2:13:24 PM

T. A. Depretis, Metallurgist

NUCOR
NUCOR STEEL TUSCALOOSA, INC.

MILL TEST CERTIFICATE

1700 HOLT RD N.E.
Tuscaloosa, AL 35404-1000
800 800-8204
customerservice@nucortusk.com

Load Number	Tally	Mill Order Number	PO NO | Line NO	Part Number	Certificate Number	Prepared
C063490	00000000555706	N-129543-001	APP-6774996 1		S55570601-1	04/14/2014 11:23

Grade

Order Description: Hot Roll Plate
A572, 1.0000 IN x 96.000 IN x 480.000 IN
Quality Plan Description:
A57250 .750-1.0: ASTM A572-50-07/A709-50/M270-50

Customer:

Sold TO:
KLOECKNER METALS Alpharetta GA
Ship TO:
KLOECKNER METALS Alpharetta GA

Shipped Item	Heat/Slab Number	Certified By	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Cb	V	Al	Ti	N2	B	Ca	Sn	CEV	ACI
4D0533BA	B4Q6496-01 ***	B4Q6496	0.20	1.16	0.009	0.006	0.19	0.15	0.07	0.08	0.025	0.000	0.072	0.028	0.001	0.007	0.0002	0.0044	0.007	0.44	
4D0533CA	B4Q6496-01 ***	B4Q6496	0.20	1.16	0.009	0.006	0.19	0.15	0.07	0.08	0.025	0.000	0.072	0.028	0.001	0.007	0.0002	0.0044	0.007	0.44	
4D0533DA	B4Q6496-01 ***	B4Q6496	0.20	1.16	0.009	0.006	0.19	0.15	0.07	0.08	0.025	0.000	0.072	0.028	0.001	0.007	0.0002	0.0044	0.007	0.44	

Shipped Item	Certified By	Heat Number	Yield ksi	Tensile ksi	Y/T %	ELONGATION % 2"	ELONGATION % 8"	Bend OK?	Hard HB	Charpy Impacts (ft-lbs) Size mm	1	2	3	Avg	Shear % 1	2	3	Avg	Test Temp
4D0533BA	S4D0533FTT	B4Q6496 ***	63.1	87.8	71.9		23.8												
4D0533CA	S4D0533FTT	B4Q6496 ***	63.1	87.8	71.9		23.8												
4D0533DA	S4D0533FTT	B4Q6496 ***	63.1	87.8	71.9		23.8												

Items: 3 **PCS:** 3 **Weight:** 39204.9 LBS

Mercury has not come in contact with this product during the manufacturing process nor has any mercury been used by the manufacturing process. Certified in accordance with EN 10204 3.1. No weld repair has been performed on this material. Produced as continuous cast discrete plate, as rolled. Manufactured to a fully killed practice fine grain.
ISO 9001:2008 Registered, PED Certified

"***" Indicates Heats melted and Manufactured in the U.S.A.

We hereby certify that the product described above passed all of the tests required by the specifications.

Dr. Qulin Yu - Metallurgist

UNITED STATES STEEL

TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049 "type 3.1")

DATE: 01/13/11
TIME: 04:05:46
SERIAL NO: L0034497

MILL ORDER/ITEM NO	SHIPPERS NO.	P.O. NUMBER	VEHICLE I.D
DR00723 01	T97790	020601	RVH6381 OH

SOLD TO ADDRESS	MAIL TO ADDRESS	VENDOR
TUBULAR STEEL INC ATTN ACCTS PAYABLE 1031 EXECUTIVE PARKWAY DR SAINT LOUIS MO 63141-6351	TUBULAR STEEL INC ATTN ACCTS PAYABLE 1031 EXECUTIVE PARKWAY DR SAINT LOUIS MO 63141-6351	USS TUBULAR PRODUCTS 2199 EAST 28TH ST. LORAIN, OH 44055

SPECIFICATION AND GRADE

PIPE CARBON SMLS STD PIPE API 5L-*44TH ED DTD OCT 2007 AND ISO 3183:2007 MOD PSL-1 GRADE B AND GRADE X42 R N OR Q ASTM A53-*07 ASTM A106-*08 GRADE B QUAD STENCIL ASME SA53-*2010 EDITION ASME SA106-*2010 EDITION GRADE B BLK REG MILL COAT PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 *:2003/COR.1:2005 AND MR0103-2007

MATERIAL COND: AS ROLLED | O.D.: 2.375(60.325) in (mm) | WALL: 0.436 (11.074) in (mm)

PRODUCT IDENTIFICATION	TENSILE TEST TYPE/ ORIENTATION	TEST COND.	GAUGE WIDTH IN	YIELD PSI	RT % .50	TENSILE PSI	Y/T	ELONG % (IN 2")	HARDNESS SCALE: HRB	MIN HYDRO PSI	DWELL(SEC)
				MIN: 42100 MAX:		MIN: 70000 MAX:	MAX:	MIN: 25.0	MIN: MAX: 99.0	2970	5
FA0577	STRIP/L/B	AR	0.750	47800	.50	80500	0.59	35.1	B 83.6	2970	5
HA0601	STRIP/L/B	AR	0.750	51500	.50	81000	0.63	35.2	B 82.0	2970	5
		**	END OF DATA THIS SHEET	**							

LEGEND: L - LONGITUDINAL, U - UPSET, T - TRANSVERSE, NM - NORMALIZED, QT - QUENCH & TEMPERED, SR - STRESS RELIEVED, AR - AS ROLLED, TR - THERMOMECHANICAL ROLLED, B - BODY, W - WELD

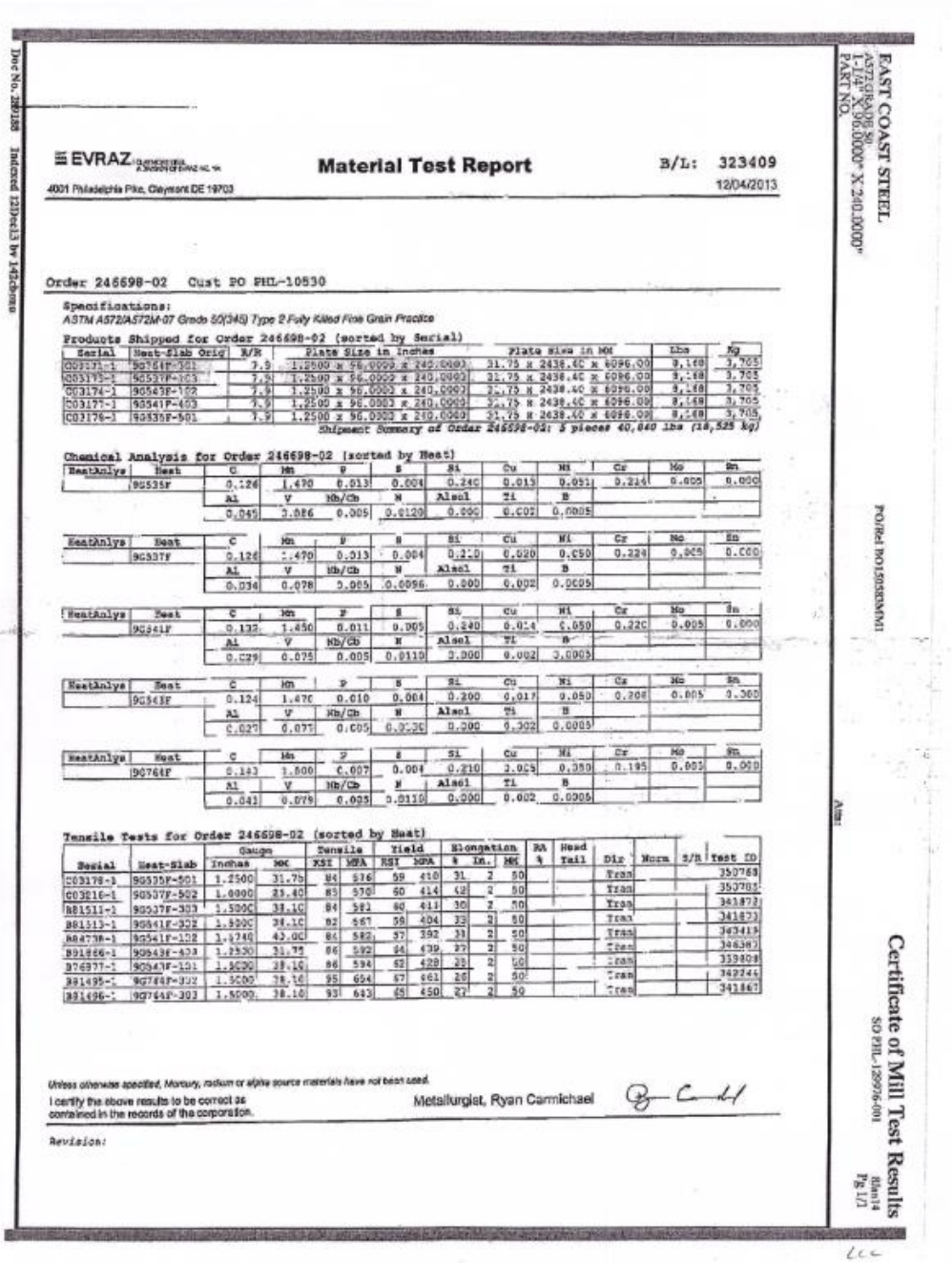
PRODUCT IDENTIFICATION	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	TI	CB	CO	C.E.* MAX .50
FA0577	HEAT	22	100	013	005	23	15	12	17	01	027		00	0002	001	000		.44
FA0577	PROD	23	99	011	006	25	14	11	16	02	032		00	0004	002	001		.45
FA0577	PROD	23	100	010	005	25	14	11	17	02	034		00	0004	002	002		.45
HA0601	HEAT	23	97	008	005	23	15	09	17	02	032		00	0000	002	001		.45
HA0601	PROD	22	97	009	005	24	14	09	17	02	042		00	0003	003	001		.44
HA0601	PROD	23	98	010	005	25	14	09	17	02	044		00	0003	003	002		.45
		**	END OF DATA THIS SHEET	**														

*C.E. IS BASED ON THE FOLLOWING EQUATION(S): CE=C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT.

PAGE 1 OF 2

For Milford Shore area 130739
Po# 412375- Rec 3-13-14



EAST COAST STEEL
ASTM A572/A572M-07 Gr 50(345) Type 2
1.1/4" X 96.0000" X 240.0000"
PART NO.

Doc No. 280188 Indexed 12/Dec/13 by 142chess

EVRAZ
4001 Philadelphia Pike, Claymont DE 19703

Material Test Report

B/L: 323409
12/04/2013

PO/Rel PO150583MM01

Order 246698-02 Cust PO PHL-10530

Specifications:
ASTM A572/A572M-07 Grade 50(345) Type 2 Fully Killed Fine Grain Practice

Products Shipped for Order 246698-02 (sorted by Serial)

Serial	Heat-Slab Orig	B/N	Plate Size in Inches	Plate Size in MM	Lbs	Kg
C03171-1	90764F-301	7.9	1.2500 x 96.0000 x 240.0000	31.75 X 2438.40 X 6096.00	9,168	3,705
C03173-1	90537F-303	7.9	1.2500 x 96.0000 x 240.0000	31.75 X 2438.40 X 6096.00	9,168	3,705
C03174-1	90543F-302	7.9	1.2500 x 96.0000 x 240.0000	31.75 X 2438.40 X 6096.00	9,168	3,705
C03177-1	90541F-403	7.9	1.2500 x 96.0000 x 240.0000	31.75 X 2438.40 X 6096.00	9,168	3,705
C03178-1	90535F-501	7.9	1.2500 x 96.0000 x 240.0000	31.75 X 2438.40 X 6096.00	9,168	3,705

Shipment Summary of Order 246698-02: 5 pieces 40,840 lbs (18,525 kg)

Chemical Analysis for Order 246698-02 (sorted by Heat)

HeatAnlys	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	90535F	0.126	1.470	0.013	0.004	0.240	0.013	0.051	0.214	0.005	0.000
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.045	0.086	0.005	0.0120	0.000	0.002	0.0005			

HeatAnlys	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	90537F	0.126	1.470	0.013	0.004	0.210	0.020	0.050	0.224	0.005	0.000
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.034	0.078	0.005	0.0096	0.000	0.002	0.0005			

HeatAnlys	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	90541F	0.132	1.450	0.011	0.005	0.240	0.014	0.050	0.220	0.005	0.000
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.029	0.075	0.005	0.0110	0.000	0.002	0.0005			

HeatAnlys	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	90543F	0.124	1.470	0.010	0.004	0.200	0.017	0.050	0.208	0.005	0.000
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.027	0.077	0.005	0.0120	0.000	0.002	0.0005			

HeatAnlys	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	90764F	0.143	1.500	0.007	0.004	0.210	0.005	0.050	0.195	0.003	0.000
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.041	0.079	0.005	0.0110	0.000	0.002	0.0005			

Tensile Tests for Order 246698-02 (sorted by Heat)

Serial	Heat-Slab	Gauge Inches	Gauge MM	Tensile KST	Tensile MPA	Yield KST	Yield MPA	Elongation %	Elongation In.	Elongation MM	RA %	Head Tail	Dir	Norm	S/R	Test ID
C03178-1	90535F-501	1.2500	31.75	84	576	59	410	31	2	50			Tran			350768
C03216-1	90537F-502	1.0000	25.40	85	570	60	414	42	2	50			Tran			350705
B81511-1	90537F-303	1.5000	38.10	84	582	60	411	30	2	50			Tran			341873
B81313-1	90541F-302	1.5000	38.10	82	567	58	404	33	2	50			Tran			340419
B84738-1	90541F-102	1.6240	42.00	86	582	57	392	33	2	50			Tran			348383
B91866-1	90543F-403	1.2530	31.75	86	592	64	439	27	2	50			Tran			353808
B76977-1	90543F-101	1.5020	38.10	86	594	62	428	25	2	50			Tran			342244
B81495-1	90764F-302	1.5000	38.10	95	654	67	461	26	2	50			Tran			341867
B81496-1	90764F-303	1.5000	38.10	93	643	65	450	27	2	50			Tran			341867

Unless otherwise specified, Mercury, radium or alpha source materials have not been used.

I certify the above results to be correct as contained in the records of the corporation.

Metallurgist, Ryan Carmichael

Revision:

Certificate of Mill Test Results
SO PHL-120976-001
Sheet 14
Pg 1/1

Independence Tube

6226 W. 74th St
Chicago, IL 60638
708-496-0380
Fax: 708-563-1950

independencetube.com
itctube.com
Certificate Number: MAR 870452

Sold By:
INDEPENDENCE TUBE CORPORATION
6226 W. 74th St.
Chicago, IL 60638
Tel: 708-496-0380
Fax: 708-563-1950

Sold To:
1311 - MARMON KEYSTONE, LLC
1000 REMINGTON BLVD
SUITE 305
630-633-3400
BOLINGBROOK, IL 60440

Purchase Order No: 61-56849-5
Sales Order No: MAR 205945 - 2
Bill of Lading No: MAR 122787 - 6
Invoice No: MAR 561566 - 1

Shipped: 3/29/2012
Invoiced: 3/29/2012

Ship To:
1 - MARMON KEYSTONE CORP
10700 MARMON DRIVE
ATTN: PURCHASING DEPT.
BOLINGBROOK, IL 60440

CERTIFICATE of ANALYSIS and TESTS

Customer Part No:

ROUND A500 GRADE B(C)
10.750"OD (10"NPS)X SCH80 X 30'

Certificate No: MAR 870452
Test Date: 3/23/2012

Total Pieces	Total Weight
5	9,665

Heat Number: A101808

Bundle Tag	Yield, Tensile Strength, Elongation, Measurements	Y/T Ratio	Pieces	Weight
340712	YLD=62440/TEN=73130/ELG=36.9	0.8538	2	3,866
340713	YLD=62440/TEN=73130/ELG=36.9	0.8538	2	3,866
340714	YLD=62440/TEN=73130/ELG=36.9	0.8538	1	1,933

Heat Number
A101808

*** Chemical Analysis ***
C=0.2080 Mn=0.4520 P=0.0110 S=0.0020 Si=0.0300 Al=0.0230 Cu=0.1000
Carbon Eq.=0.2833 Carbon Eq. = C + (Mn/6)

MELTED & MANUFACTURED IN THE USA

Certification:

I certify that the above results are a true and correct copy of records prepared and maintained by Independence Tube Corporation. Sworn this day, 3/23/2012

Jose Martinez, QMS Manager

WE PROUDLY MANUFACTURE ALL OF OUR HSS IN THE USA.
INDEPENDENCE TUBE PRODUCT IS MANUFACTURED, TESTED,
AND INSPECTED IN ACCORDANCE WITH ASTM STANDARDS.

CURRENT STANDARDS:
.....A500/A500M-10a
.....A513-07
.....A252-98 (2002)

Q. C. REVIEWED

Page - 1

ARCELORMITTAL PLATE LLC

TEST CERTIFICATE

PAGE NO: 01 OF 02
FILE NO: 1507-01-07
MILL ORDER NO: 18505-001
MELT NO: C7990
DATE: 08/07/13

SEND TO: 01-0

PLATE DIMENSIONS / DESCRIPTION

TOTAL QTY	GAUGE	WIDTH	LENGTH	DESCRIPTION	PIECE WEIGHT
10	3/4"	96"	240"	RECTANGLE	4901#

CUSTOMER INFORMATION

CUSTOMER PO: PHL-10199

PART NO. 004

SPECIFICATION(S)

THIS MATERIAL HAS BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH PURCHASE ORDER REQUIREMENTS AND SPECIFICATION(S).

ASTM A709-GR50 YR 10 TYPE-2
SPEC MOD FOR PHYSICALS IMPACTS WAIVED ASTM A572 07
GR50 TYPE 2, CSA G40.21 04 GR50W
THE MANAGEMENT SYSTEMS FOR MANUFACTURE OF THIS PRODUCT ARE CERTIFIED TO ISO 9001:2008 (CERTIFICATE NO. 30130) AND ISO 14001 (CERTIFICATE NO. 009496).

CHEMICAL COMPOSITION

	C	MN	P	S	CU	SI	NI	CR	MO
MELT:C7990	.12	1.16	.012	.005	.33	.22	.36	.12	.09

	V	AL	CB
MELT:C7990	.031	.020	.002

MANUFACTURE

FINE GRAIN PRACTICE

TENSILE PROPERTIES

LOC	DIR	YIELD STRENGTH PSI X 100	TENSILE STRENGTH PSI X 100	ELONGATION GAGE LGTH	%
BOT.	TRANS.	609	809	2.00"	37.0
BOT.	TRANS.	548	770	8.00"	21.0

WE HEREBY CERTIFY THE ABOVE INFORMATION IS CORRECT:

ARCELORMITTAL PLATE LLC
QUALITY ASSURANCE LABORATORY
139 MODENA ROAD
COATESVILLE, PA 19320

Elinore Zaplitny
SUPERVISOR - TEST REPORTING
ELINORE ZAPLITNY

Attn:

6.1.4 NDE REPORT OF MONOPOLE BASE PLATE

See Section 6.2.4 Contractor's Certified Weld Inspection.

kloeckner metals

KLOECKNER METALS CORPORATION

Kloeckner Metals Corp - APP
2005 Grassland Pkwy
Alpharetta,GA 30004

05/23/14 11:56 AM Page 1 of 2

Load no. 1982905

Sold To: 775
Atlantic Fabricators Inc.
7331 Industry Drive
Charleston, SC 29418
Phone # (843)552-9572

Ship To: 1
Atlantic Fabricators Inc.
7331 Industry Dr
North Charleston, SC 29418-8493
Phone # (843)552-9572

Via Common Carrier
FOB Delivered
Freight Prepaid
Carrier AVERITT EXPRESS
Truck #

Control #	73036989
Bill of Lading	73036989
Ship Date	05/23/14

Comments JD ACTUAL WEIGHT 600 LBS CLASS 50 1 SKID

CUST PO:14795-1495 **Order#:**10955983 **Entered By:**SCLARK

Line	Item	Description	PVC	Size	Pcs	Net Weight	
1		Strip Mill Plate 1/4 " Astm A36		29.125 OD DWG	1	60	
Heat Num: A3Y4616 Mill Id: 03 Pieces: 1							Line/Rel
FTG							
2		Strip Mill Plate 1/4 " Astm A36		14.5625 X 29.125 NEST/DWG	2	60	
Heat Num: A3Y4616 Mill Id: 03 Pieces: 2							Line/Rel
FTG							
3		Strip Mill Plate 1/4 " Astm A36		14.5625 X 29.125 NEST/DWG	2	60	
Heat Num: A3Y4616 Mill Id: 03 Pieces: 2							Line/Rel
FTG							
4		Mill Rolled Plate 1-1/2" Astm A36 /Asme-Sa36		14.75 OD DWG	1	93	
Heat Num: 4502602 Mill Id: 04 Pieces: 1							Line/Rel
FTG							
5		Strip Mill Plate 1/4 " Astm A36		29.125 OD DWG	1	60	
Heat Num: A3Y4616 Mill Id: 03 Pieces: 1							Line/Rel
FTG							

kloeckner metals

KLOECKNER METALS CORPORATION

Kloeckner Metals Corp - APP
2005 Grassland Pkwy
Alpharetta,GA 30004

Load no. 1982905

Sold To: 775
Atlantic Fabricators Inc.
7331 Industry Drive
Charleston, SC 29418
Phone # (843)552-9572

Ship To: 1
Atlantic Fabricators Inc.
7331 Industry Dr
North Charleston, SC 29418-8493
Phone # (843)552-9572

Via Common Carrier
FOB Delivered
Freight Prepaid
Carrier AVERITT EXPRESS
Truck #

Control #	73036989
Bill of Lading	73036989
Ship Date	05/23/14

Comments JD ACTUAL WEIGHT 600 LBS CLASS 50 1 SKID

Line	Item	Description	PVC	Size	Pcs	Net Weight	
6	Mill	Rolled Plate 3/4" Astm A36 /Asme-Sa36		14.75 OD DWG	1	46	
Heat Num: 4503374 Mill Id: 09 Pieces: 1							Line/Rel
FTG							
7	Mill	Rolled Plate 1/2" Astm A36 /Asme-Sa36		3.75 X 6 NEST/DWG	6	19	
Heat Num: B4P6287 Mill Id: 03 Pieces: 6							Line/Rel
FTG							
8	Mill	Rolled Plate 2-3/4" A572 Gr 50		29.125 OD DWG	1	662	
Heat Num: 3501552 Mill Id: 05 Pieces: 1							Line/Rel
FTG							
9	Mill	Rolled Plate 3/4" Astm A36 /Asme-Sa36		28 OD DWG	1	167	
Heat Num: 4503374 Mill Id: 09 Pieces: 1							Line/Rel
FTG							
10	Mill	Rolled Plate 1" A572 Gr 50		6.75 X 6.75 NEST/DWG	6	78	
Heat Num: B4Q6496 Mill Id: 02 Pieces: 6							Line/Rel
FTG							

Total Pieces	Gross Wgt	Tare Wgt	Net Wgt
22	[redacted]	0	[redacted]

Carrier Signature Customer Signature Shipper Signature /Date

Purchase Order

PO Number
412376

LCC Deployment Services, Inc.
7900 Westpark Drive, Suite A300
Mclean, VA 22102

Ship To: LCC Deployment Services, Inc.
2242 Old Marlton Pike
Marlton, NJ 08053

Vendor: East Coast Steel, Inc.
317 Salina Road
Sewell, NJ 08080

Bill To: LCC Deployment Services, Inc.
7900 Westpark Drive, Suite A300
Mclean, VA 22102

PAYMENT TERMS	FOB	DATE OF ORDER	FREIGHT TERMS
Net 30		03/11/2014	Prepaid
DATE EXPECTED	SITE		REFERENCE
03/11/2014	130739 - Milford Shore Area		130739

ITEM	DESCRIPTION	QUANTITY	U.O.M.	UNIT PRICE	AMOUNT
A-D-Subcontractor-Equipment	PL - 1-1/4" x 1-13/16" x 1'-6" cut to size per provided sketch - A572-50 Ready 5-6 days	4	Each	$13.00	$52.00
A-D-Subcontractor-Equipment	PL - 3/4" x 2-3/8"OD x 1-1/4" ID - A572-50	8	Each	$5.00	$40.00
A-D-Subcontractor-Equipment	FB - 1-1/4" x 4-1/4" x 4'-6" cut to size and drilled per provided sketch - A572-50	3	Each	$156.00	$468.00
				Total:	$ 560.00

SUPPLIER INSTRUCTIONS

1. Invoice must reference Purchase Order Number listed above or supplier will experience payment delays.
2. Invoice should be emailed to "AP_TEAM@lcc.com"
3. Process order with the above shipping method, terms, prices, and specifications.
4. Please notify LCC's contact person immediately if you are unable to ship as specified. Upon acceptance of this purchase order seller agrees to adhere to LCC terms and conditions located at http://www.lcc.com/index.php/en/purchasing-terms-conditions , as amended from time to time, which are incorporated herein by this reference, with the same force and effect as if they were given in full text.

LCC APPROVAL

Procurement Dept. 03/11/2014
LCC Authorized Agent Date

DYWIDAG-SYSTEMS INTERNATIONAL

SHIP-TO ADDRESS:

LCC Deployment Services, Inc.
Customer pick up at DSI plant
TOUGHKENAMON, PA 19374
Contact: Rob Pennington
Phone No.: 703- 873-2357

Dywidag Systems International USA, Inc.

Dywidag Systems International
1263 Newark Rd.
Toughkenamon, PA 19374
Phone No: 610-268-2221
Fax No.: 610-268-3053
E-Mail: dsiamerica@dsiamerica.com

Job No.	J089410
Department	PTE70
Shipment Method	Customer Pick Up
Carrier	
Your Reference:	412367
	Revision 1
External Document No.	412367

Ship Ticket ST365336

Order No.	**CO124111**
Customer No.	C001893
Contact	Sandy Crump
Document Date	March 12, 2014
Shipment Date	March 12, 2014
Page No.	1

Pos.	Quantity	Unit	Description	Item No.	Location	Backorder
12	4	pieces	1"(26MM) THREADBAR® x 25'-9" lg (26MM) GRADE 150 GALVANIZED	B26E GALV	PA	0
15	1	pieces	1"(26MM) THREADBAR® x 4'-0" lg (26MM) GRADE 150 GALVANIZED	B26E GALV	PA	0
30	12	pieces	1" HEXNUT GALVANIZED F/CTD H# 395786(91229)	B26E20758	PA	0
40	8	pieces	#9 GALV FLAT HARDENED WASHER	B09U93180	PA	0
45	1	pieces	1" COUPLER GALVANIZED F/CTD L=7.75"/ H# 122518(87665)	B26E30858	PA	0

Net Weight: 346.39 lbs
Gross Weight: 346.39 lbs

packed by: _____

act. delivery date: _____

Milford Stores

EAST COAST STEEL INC.

317 SALINA ROAD
SEWELL, NJ 08080
856-582-6776
FAX 856-582-0288

PACKING SLIP

Date	Invoice #
3/11/2014	152386

Bill To	Ship To
LCC DEPLOYMENT SERVICES, INC. 7900 WESTPARK DRIVE, SUITE A300 MCLEAN, VA 22102	2242 OLD MARLTON PIKE MARLTON, NJ. 08053 856-810-1658 *SEND MTRS WITH ALL ORDERS*

P.O. NUMBER	TERMS	DUE DATE	REP	Ship VIA	FOB
412378	N30	4/10/2014	CD	PICKUP	ECS

Qty	Description
4	1" A572-50 PLATE 2" X 5"
4	1-1/4" A572-50 PLATE 2" X 5"
	DELIVERY CHARGE
	NJ Sales Tax

TERMS & CONDITIONS:
Random lengths are estimates only, overages to be paid by customer.
Shipping weights calculated based on material theoretical weights.
ECS must be notified within ten days of any discrepancies.
VISIT US AT WWW.EASTCOASTSTEEL.NET

EAST COAST STEEL INC.
317 SALINA ROAD
SEWELL, NJ 08080
856-582-6776
FAX 856-582-0288

PACKING SLIP

Date	Invoice #
3/11/2014	152366

Bill To	Ship To
LCC DEPLOYMENT SERVICES, INC. 7900 WESTPARK DRIVE, SUITE A300 MCLEAN, VA 22102	2242 OLD MARLTON PIKE MARLTON, NJ. 08053 856-810-1658 *SEND MTRS WITH ALL ORDERS*

P.O. NUMBER	TERMS	DUE DATE	REP	Ship VIA	FOB
412376	N30	4/10/2014	CD	PICKUP	ECS

Qty	Description
4	1-1/4" A572-50 PLATE 1-13/16" X 18" CUT PER DRAWING
8	3/4" A572-50 PLATE 2-3/8" OD X 1-1/4" ID
3	1-1/4" A572-50 PLATE 4-1/4" X 54" W/ (14) 1-3/16" HOLES DRILLED PER DRAWING
	SEND MTR'S WITH SHIPMENT NJ Sales Tax

TERMS & CONDITIONS:
Random lengths are estimates only, overages to be paid by customer.
Shipping weights calculated based on material theoretical weights.
ECS must be notified within ten days of any discrepancies.
VISIT US AT WWW.EASTCOASTSTEEL.NET

Tubular Steel, Inc.
Since 1953
"Performance you can count on"

Tubular Steel inc
100 Canal Road
Fairless Hills, PA 19030
Telephone : (314) 851-9200
Fax .....: (314) 851-9336

Ship to:
LCC Deployment Services Inc
2242 Old Marlton Pike
Marlton, NJ 08053

Bill to:
LCC Deployment Services Inc
7900 Westpark Drive
Suite A300
Mc Lean, VA 22102

Pro forma packing slip

Number .....:
Ship date .....: 3/12/2014
Page .....: 1 of 1
Sales order .....: SO-378729
Customer PO# .....: 412375
Mode of delivery .....: Small package
Terms of delivery .....: Prepaid - freight
Freighted by .....: Carrier

Item size	Ordered	Unit	Delivered	Weight	Cust part # / po #
2.375x0.436 (2" sch XXH) HF Seamless Pipe ASTM A106-B	3' 6"	ft	3' 6"	31.60	Part# 130739

Heat #	Length	Pcs	Qty	Packaging
HA0601	3' 6"	1	3' 6"	1 Loose Piece(s)

Rec'd from UPS - 3-13-14 9:40 AM
PO# 412375 for
MILFORD SHORE AREA - 130739

Receipt: _____

CONSTRUCTION

6.2.1 CONSTRUCTION INSPECTIONS

LCC Deployment Services Inc.
2242 Old Marlton Pike, Marlton, NJ 08053
856-810-1658 (Ph) 856-810-1659 (Fax)

To: Crown Castle

Subject: Construction inspection

Site: **Milford Shore Area - 825998**

August 12, 2014

Please be advised that all work was completed per drawings dated **09/12/2012** by **Tower Engineering Professionals**, in accordance with industry standards and contract documents including modification drawings and specifications, state and local regulations, OSHA, and engineering standards. On-site cold galvanizing was applied in accordance with Crown ENG-BUL-10149.

Please let me know if you have any questions.

Thank you,

Keith A. Stackhouse
Structural Construction Manager
LCC Deployment Services

6.2.2 FOUNDATION INSPECTIONS

From: Ryan Rimmele <rrimmele@tepgroup.net>
Sent: Friday, January 9, 2015 1:13 PM
To: Keith_ Stackhouse
Cc: Bruno, Jerry (Contractor); SGS PMI; lccmods
Subject: RE: Milford Shore (BU825998), TEP No. 100459 Waiver for foundation inspection

Hi Keith,

We can waive the requirement. We were looking to get the stuff usually associated with the anchor bolt verification, so as long as you have that information we are good.

Thanks,
Ryan

_ _ _ _ _ _ _
Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351 Ext. 2402|Fax: (919) 661-6350

From: Keith_ Stackhouse [mailto:keith_stackhouse@lcc.com]
Sent: Friday, January 09, 2015 1:02 PM
To: Ryan Rimmele
Cc: Bruno, Jerry (Contractor); SGS PMI; lccmods
Subject: Milford Shore (BU825998), TEP No. 100459 Waiver for foundation inspection

Hello Ryan,

Could you waive the foundation inspection found in the MI check list on page N-1 of the SSD, there was no foundation work needed on this project.

Thanks,

Keith A. Stackhouse
Structural Construction Manager

LCC Construction Services
2500 Sylon Blvd.
Hainesport, NJ 08036

(Cell) 609-367-6107

6.2.3 POST INSTALLED ANCHOR ROD VERIFICATION

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

FIELD VISIT REPORT

DATE: December 12, 2014 **TIME:** 8:30 AM

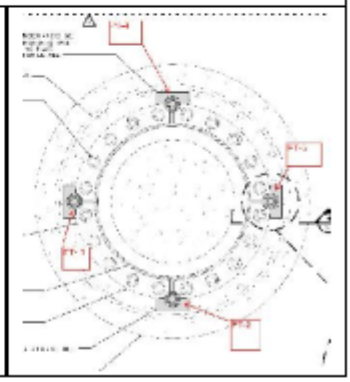
TO: LCC
ATTN: Keith Stackhouse
PHONE: 609.367.6107
EMAIL: keith_stackhouse@lcc.com

PREPARED BY: Dan Reid
PHONE: 203.488.0580 ext. 151
EMAIL: dreid@centekeng.com

SUBMITTED BY: Carlo F. Centore, PE
PHONE: 203.488.0580 ext. 122
EMAIL: cfcentore@centekeng.com

CENTEK NO.: 14137.000
PROJECT NAME: T-Mobile CT11209D
CC: Brenden Foster (LCC)

The following was observed, discussed, reviewed and/or resolved at the site, which requires action by the Contractor unless noted otherwise. Items shall remain on this ongoing report until resolved to the satisfaction of this office.

121214. 1	Purpose of field visit was to confirm compliance with the Tower Engineering Professionals (Job #100459) Tower Modification Drawing S-3 dated 03/06/2014 (with TEP issued redlines) for installation of four (4) post-installed anchor rods.	
121214. 2	Weather conditions were cloudy with a morning temperature of 28ºF. The Contractor was on site readying the site for tower base modifications and installation of anchor rods.	
121214. 3	Anchor Hole Depths Confirmed: ▪ **PT-1**: 18'-11" ▪ **PT-2**: 18'-8" ▪ **PT-3**: 18'-8" ▪ **PT-4**: 18'-6" Specified Minimum Depth of 18'-6" (± 2")	

**IF YOU DO NOT RECEIVE ALL PAGES AS NOTED ABOVE,
PLEASE CONTACT OUR OFFICE IMMEDIATELY.
PAGE 1 OF 4**

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121214. 4	**PT-1** (See note **121214.4** above)	
121214. 5	**PT-2** (See note **121214.4** above)	
121214. 6	**PT-3** (See note **121214.4** above)	
121214. 7	**PT-4** (See note **121214.4** above)	
121214. 8	Typical at all anchor locations: Concrete core diameter verified as 2" Ø.	

**IF YOU DO NOT RECEIVE ALL PAGES AS NOTED ABOVE,
PLEASE CONTACT OUR OFFICE IMMEDIATELY.
PAGE 2 OF 4**

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121214. 9	Anchor rods confirmed as 1" Ø x 24'-1" DYWIDAG Grade 150. Contractor was notified to provide Centek with copies of anchor rod material certifications prior to closeout of the project.	
121214. 10	The specified Hilti HIT-RE 500 epoxy adhesive was used to install the anchor rods. Anchor holes were brushed & blown clean prior to filling with adhesive. Once anchors were lowered into place, excess adhesive was cleaned off flush with the baseplate surface. Adehrance to the manufacturer's installation recommendations was confirmed.	
121214. 11	(See note **121214.10** above)	

**IF YOU DO NOT RECEIVE ALL PAGES AS NOTED ABOVE,
PLEASE CONTACT OUR OFFICE IMMEDIATELY.
PAGE 3 OF 4**

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121214. 12	(See note **121214.10** above)	
121214. 13	(See note **121214.10** above)	
121214. 14	Installation of all four (4) anchor rods confirmed as complete. The Contractor was advised to contact Centek for scheduling of anchor pull test allowing for a minimum of 72 hours for adhesive cure time.	

From: Ryan Rimmele
Sent: Thursday, January 15, 2015 5:15 PM
To: Keith_ Stackhouse
Cc: Bruno, Jerry (Contractor); SGS PMI; lccmods
Subject: RE: Milford Shore Area - 825998 - 130739 - EOR review

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Milford Shore Area - 825998 - 130739

Keith,

The increased drill hole is acceptable.

If you don't have the information required to satisfy Crown's pull test standard, I'm going to defer that approval to Crown. They will need to approve the deviation from their standards.

Thanks,
Ryan

Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351 Ext. 2402|Fax: (919) 661-6350

From: Keith_ Stackhouse [mailto:keith_stackhouse@lcc.com]
Sent: Thursday, January 15, 2015 3:50 PM
To: Ryan Rimmele
Cc: Bruno, Jerry (Contractor); SGS PMI; lccmods
Subject: Milford Shore Area - 825998 - 130739 - EOR review

Hello Ryan,

You had given us permission to drill a 1.75 inch hole, the core driller confirmed they drilled a 1.75" hole. The core driller supplied the attached photos, I believe because of the condition of the concrete and the condition found during the core drilling caused the hole to appear to be 2". Could you approve of the deviation, by the way; the anchor rods passed the proof test.

As per our earlier conversation, the Stealth drawing trump your drawing and we installed the ¾" flange plate instead of the 1-1/2" flange illustrated in the TEP drawings.

In addition, We had to hire a 3rd party inspection firm to witness the installation of the anchor rods to meet the towns building permit process.
Could you approve of the anchor rod installation in lieu of not having photos of the drilling, brushing, hosing, vacuuming and rod length?
I have attached the PS for the anchor rods and the reports from Centek engineering for your review.

Thanks,

Keith A. Stackhouse
Structural Construction Manager

LCC Construction Services
2500 Sylon Blvd.
Hainesport, NJ 08036

(Cell) 609-367-6107
keith_stackhouse@lcc.com

6.2.4 CONTRACTOR'S CERTIFIED WELD INSPECTION

MATERIALS TESTING, INC.

55 LAURA STREET • NEW HAVEN, CONNECTICUT 06512 • (203)468-5216
42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860)423-1972
materialstestinginc.com

Client: Centek Engineering
63-2 North Branford Road
Branford, CT 06405
Attn: Dan Reid

Date: 02-03-15
Report No.: S-1002R*

Project: Communications Tower CT 11209D
234 Melba Street
Milford, CT

Subject: **MAGNETIC PARTICLE EXAMINATION OF WELDS - FIELD**

Inspector on site to perform Magnetic Particle Examination of Welds in Accordance with the Guidelines of the American Welding Society D1.1 Structural Welding Code. The results of testing are as follows:

LOCATION OR MEMBER	AREA	INTERPRETATION		REPAIRS		REMARKS
		ACCEPT	REJECT	ACCEPT	REJECT	
New Mast Flange	*1	✓				*1 outside overhead welds

Method of Inspection:

☒ Dry ☐ Wet ☐ Residual ☐ Continuous Unit Type: Mangaflux Y7
☒ AC ☐ DC ☐ Half-Wave ☒ Yoke ☐ Prod

Manufacturer or Contractor LCC

Remarks: * Reinspection of new ¾" thick mast flange welded to existing mast top (elevation 85'). Note area visually rejected on 1-15-15 by CWI inspector - has been reworked prior to visit. Welds were painted at time of testing. Each end of rewelded location was retested along with repair area - welds found acceptable - no indications found. See report dated 1-15-15 for additional information. Client's certified welding inspector was present to oversee all testing performed.

Materials Testing, Inc. Technician Henry Daricek Level: II

Technician Certified in Accordance with MTI NDT Procedure WP-001.

William J. Soucy

*** Revised for clarification as requested.**

1cc: Client

SW

MATERIALS TESTING, INC.

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Client: Centek Engineering
63-2 North Branford Road
Branford, CT 06405
Attn: Dan Reid

Date: 02-03-15
Report No.: S-1002

Project: Communications Tower CT 11209D
234 Melba Street
Milford, CT

Subject: MAGNETIC PARTICLE EXAMINATION OF WELDS - FIELD

Inspector on site to perform Magnetic Particle Examination of Welds in Accordance with the Guidelines of the American Welding Society D1.1 Structural Welding Code. The results of testing are as follows:

LOCATION OR MEMBER	AREA	INTERPRETATION		REPAIRS		REMARKS
		ACCEPT	REJECT	ACCEPT	REJECT	
New Mast Flange	*1	✓				*1 outside overhead welds

Method of Inspection:

☒ Dry ☐ Wet ☐ Residual ☐ Continuous Unit Type: Mangaflux Y7
☒ AC ☐ DC ☐ Half-Wave ☒ Yoke ☐ Prod

Manufacturer or Contractor LCC

Remarks: * Reinspection of new ¾" thick mast flange welded to existing mast top (elevation 85'). Note area visually rejected on 1-15-15 by CWI inspector - has been reworked prior to visit, area was painted which affects detection of discontinuities. Each end of rewelded location was reinspected along with repair area - welds found acceptable - no indications found. See report dated 1-15-15 for additional information.

Materials Testing, Inc. Technician Henry Daricek Level: II

Technician Certified in Accordance with MTI NDT Procedure WP-001.

William J. Soucy

1cc: Client

SW

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
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www.CentekEng.com

WELDING INSPECTION REPORT

DATE: February 3, 2015 **TIME:** 8:00 am

TO: LLC
ATTN: Keith Stackhouse
PHONE: 609.367.6107
EMAIL: keith_stackhouse@lcc.com

INSPECTED BY: Chris Thomas
CWI 13031271
PHONE: 203.488.0580 ext. 119
EMAIL: cthomas@centekeng.com

SUBMITTED BY: Carlo F. Centore, PE
PHONE: 203.488.0580 ext. 122
EMAIL: cfcentore@centekeng.com

CENTEK NO.: 14137.000
PROJECT NAME: T-Mobile CT11209D – Milford Shore Area
CC: Brenden Foster (LCC)

The following was observed, discussed, reviewed and/or resolved at the site, which requires action by the Contractor unless noted otherwise. Items shall remain on this ongoing report until resolved to the satisfaction of this office.

020315. 1	This report is a visual evaluation of the repair welds associated with the Top Flange Plate connection per page S4 of the Stealth Shop Drawings prepared for LCC Deployment Services (P/N: TM14-00281W-33R0 Dated: 04/23/14), and per the requirements of the American Welding Society Structural Welding Code D1.1 (2010 Edition).	
020315. 2	Top Flange Plate installation. Refer to initial Welding Inspection Report prepared by Centek Engineering Inc. (Dated 01.15.15) note 011515.7 for additional information. The additional weld metal suggested at the original site visit is confirmed to be added.	

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PAGE 1 OF 2

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020315. 3	(See note **020315.2** above)	
020315. 4	(See note **020315.2** above)	
020315. 5	(See note **020315.2** above)	
020315. 6	Typical use of Mangaflux Magnetic Partial Examination. Refer to Inspection Report prepared by Materials Testing Inc. for additional information.	
020315. 7	This visual evaluation of the repair welds to the Top Flange Plate found them to be per the contract documents and in accordance with AWS D1.1 Clause 6, Table 6.1.	

02.03.15
Christopher Thomas
CWI 13031271
QC1 EXP 3/1/2016

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PAGE 2 OF 2

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WELDING INSPECTION REPORT

DATE: January 15, 2015 **TIME:** 8:30 am

TO: LLC
ATTN: Keith Stackhouse
PHONE: 609.367.6107
EMAIL: keith_stackhouse@lcc.com

INSPECTED BY: Chris Thomas
CWI 13031271
PHONE: 203.488.0580 ext. 119
EMAIL: cthomas@centekeng.com

SUBMITTED BY: Carlo F. Centore, PE
PHONE: 203.488.0580 ext. 122
EMAIL: cfcentore@centekeng.com

CENTEK NO.: 14137.000

PROJECT NAME: T-Mobile CT11209D – Milford Shore Area

CC: Brenden Foster (LCC)

The following was observed, discussed, reviewed and/or resolved at the site, which requires action by the Contractor unless noted otherwise. Items shall remain on this ongoing report until resolved to the satisfaction of this office.

011515. 1	This report is a visual evaluation of the completed welds associated with the newly installed Stiffeners per page S-3 of the Tower Engineering Professionals Modification Drawings prepared for T-Mobile Towers (P/N: 100459 Dated: 03/06/14) and the newly installed Top Flange Plate per page S4 of the Stealth Shop Drawings prepared for LCC Deployment Services (P/N: TM14-00281W-33R0 Dated: 04/23/14), per the requirements of the American Welding Society Structural Welding Code D1.1 (2010 Edition).

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PAGE 1 OF 5

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011515. 2	Typical Stiffener installation. The Stiffeners are called out to be welded to the pole with 5/16" fillets, the infield conditions were observed to be closer to a 7/16" fillets. The Pipe section of the Stiffeners are called out to be welded to the existing base plate and base plate extensions with Complete Joint Penetrations having 30° bevel. A 7/16" (assumed cover) fillet is observed in these locations. The Plate section of the Stiffeners are called out to be welded to the existing base plate with Complete Joint Penetrations having 45° bevel and a 3/16" cover fillet. A 7/16" (assumed cover) fillet is observed in these locations. Base Plate Extensions are called out to be welded to the existing base plate with Complete Joint Penetrations having 30° bevel. This detail is confirmed.	
011515. 3	(See note **011515.3** above) Typical Stiffener to Base Plate Extension connection.	
011515. 4	(See note **011515.3** above) Typical Base Plate Extension to Base Plate connection.	

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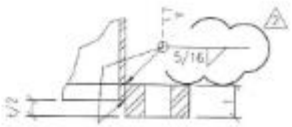
011515. 5	(See note **011515.3** above) Typical Stiffener to Pole Connection.	
011515. 6	(See note **011515.3** above) Stiffener to Pole Connection.	
011515. 7	Top Flange Plate installation. The Top Flange Plate is called out to be welded to the pole with 5/16" fillets top and bottom and the Top Flange Plate is to be concentric around the newly cut edge of the tower pole with the edge being located halfway through the thickness of the Top Flange Plate. Exact location of pole edge relative to Top Flange Plate is unknown but apparent to be lower than top face of Top Flange Plate. A weld with 7/16" face size is used for the upper connection. The lower connection is welded as an overhead 5/16" fillet. <u>Exceptions:</u> For the lower connection a length of weld about half the circumference to the south side has a horizontal leg closest to 3/16". It is explained by the weldor that this leg is held back across this location to allow room for bolting. Suggestion to the weldor and contractor is to add additional weld metal to location between the bolt holes. It is unconfirmed if this addition weld metal was added.	 SECTION A–A *Detail on sheet S4 of the Stealth Shop Drawings.*

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011515. 8	(See note **011515.8** above) Upper connection.	
011515. 9	(See note **011515.8** above) Upper connection.	
011515. 10	(See note **011515.8** above) Upper connection.	
011515. 11	(See note **011515.8** above) Lower connection.	

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011515. 12	(See note **011515.8** above) Lower connection.	
011515. 13	(See note **011515.8** above) Lower connection.	
011515. 14	(See note **011515.8** above) Lower connection to south side of pole.	
011515. 15	(See note **011515.8** above) Lower connection to south side of pole showing undersized horizontal leg.	
011515. 16	Aside from the noted exceptions, the visual evaluation of the newly installed Stiffeners and Top Flange Plate found them to be welded to the existing tower per the contract documents. All welds without noted exceptions are in accordance with AWS D1.1 Clause 6, Table 6.1.	

2/15/15
Christopher Thomas
CWI 13031271
QC1 EXP. 3/1/2016

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MATERIALS TESTING, INC.

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42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860)423-1972
materialstestinginc.com

DATE: 12-22-14

REPORT NO: S-1000

CLIENT: Centek Engineering
63-2 North Branford Road
Branford, CT 06405
Attn: Dan Reid

PROJECT: Communications Tower CT 11209D
234 Melba Street
Milford, CT

SUBJECT: **ULTRASONIC INSPECTION - FIELD**

A site visit was made this date to inspect existing Tower #CT 11209D. A meeting was held with client's CWI Inspector Chris Thomas. No erector/welder was on site during today's inspection. Picture were taken by client.

All welds noted already completed and area has been painted.

I) Inspections: ultrasonic inspections limited to ± 50% of welds, due to limited access caused by either shape of items or adjustment parts (anchors, nuts, etc.).

No magnetic particle testing was performed due to rain/wet conditions.

A) Welds:

Existing tower to existing base ultrasonic testing.
New stiffener with 2" diameter XXS x 9" pipe.

1) Base of stiffener 1 13/16" wide, scan limited to 50% center area of 1 13/16" width.

2) Complete joint penetration of 2" diameter bottom to both existing base plate and extension new plate not inspected due to curvature.

3) Extension new plate to existing base not ultrasonic tested due to access limitations.

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materialstestinginc.com

Client: Centek Engineering

Date: 12-22-14
Report No: S-1000
Page: 2 of 2

Project: Communications Tower CT 11209D
234 Melba Street
Milford, CT

Subject: ULTRASONIC TESTING - FIELD

Inspector on Site to Perform Ultrasonic Inspection of Complete Penetration Welds in Accordance with the Guidelines of the American Welding Society D1.1 Structural Welding Code. The Results of Testing are as Follows:

Testing Parameters:

1. Connection Type: ☐ Moment ☐ Splice ☒ Other
2. Transducer Angle: 0/70° 3. Unit Type Sonic 1200S
4. From Face: A and B 5. Leg: 1-2 6. Reference Level (b): 40db

LOCATION (TF=TOP FLANGE/BF=BOTTOM FLANGE)	FLOOR LEVEL	DISCONTINUITY					INITIAL	REPAIR	EVALUATION ACCEPT/ REJECT
		a	c	d	LENGTH	DEPTH			
Reference S-3, Revision #1, dated 03-06-14, section view for inspections noted.									
1) Stiffener #1 to base plate.	50%						✓		Accept
2) Stiffener #2 to base plate.	50%						✓		Accept
3) Stiffener #3 to base plate.	50%						✓		Accept
4) Stiffener #4 to base plate.	50%						✓		Accept
Existing tower to base plate.									
5) Tower to existing base.	50%						✓		Accept

Location of Defect, if any, marked directly on member.

Material Parameters: Welding Process: * Thickness: 7/16" to 1 ¼" range
Weld Joint: * Backing? - No for stiffeners

Remarks: *Both existing and new work completed and painted prior to visit.
Inspection limited due to access as reported. No weld indications noted.
Four new stiffener, locations shifted due to existing structure conditions.

a: Indication Level; c: Attenuation Factor; d: Indication Rating
Technician certified in accordance with Materials Testing, Inc. NDT Procedure WP-001.

Materials Testing, Inc. Technician Henry Daricek Level: II

William J. Soucy

1cc: Client

lgs

MATERIALS TESTING, INC.

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DATE: 01-15-15

REPORT NO: S-1001

CLIENT: Centek Engineering
63-2 North Branford Road
Branford, CT 06405
Attn: Dan Reid

PROJECT: Communications Tower CT 11209D
234 Melba Street
Milford, CT

SUBJECT: **ULTRASONIC TESTING - FIELD**

Drawings: Revision #1 (03-06-14) - T-1, N-5, S-2 and S-3.
Revision #0 (09-12-12) - N-1 thru N-4, S-1 and S-4 thru S-6,

Note: Site Drawing issued by Stealth: Drawing S-3, Rev. #3, dated 03-05-14 (stamped May 2nd, 2014) by P.E. Conn #26467, Roger T. Alworth).

I) Reinspection of tower base 1 ¼" thick stiffeners marked PL-1 at four (4) locations.

A) Due to corrective welds made to items marked on report, dated 12-22-14, items were reinspected.

II) Elevation 85'± Splice Detail B/S-5 for new flange added at top of existing mast where existing flange was removed.

Note: the following changes subject to Design Engineer's review and approval.

A) Inspector's Drawing S-5 shows new 1 ½" thick flange with 1" diameter A325 bolts.

Installer's Drawing S-3 shows ¾" thick flange and ⅝" diameter bolts.

Installation used requirements of S-3 (¾" plate flange) upper sections not added at time of visit.

Note also ¾" flange was shipped bolted to base flange of upper new mast as supplied by fabricator.

Contd.

Attachment #1 shows approximate field welds used in place of implied fully penetration shown on S-5. Resulting field welds on attachment #1 are as follows:

1) Mast bevel inward - new flange fits partly down around outside mast face. Bevel was filled with weld for depth of ⅜"±. Exterior overhead fillet weld added between mast exterior face to underside of new flange. Resulting fillet weld is 5/16" leg to mast and ¼" to flange. Flange weld held back (smaller) to avoid bolt holes.

Additional pictures to be part of client's report.

MATERIALS TESTING, INC.

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materialstestinginc.com

Client: Centek Engineering

Date: 01-15-15
Report No.: S-1001

Project: Communications Tower CT 11209D
234 Melba Street
Milford, CT

Subject: MAGNETIC PARTICLE EXAMINATION OF WELDS

Inspector on site to perform Magnetic Particle Examination of Welds in Accordance with the Guidelines of the American Welding Society D1.1 Structural Welding Code. The results of testing are as follows:

LOCATION OR MEMBER	INTERPRETATION		REPAIRS		REMARKS
	ACCEPT	REJECT	ACCEPT	REJECT	
A) Detail H/S-3, 1 ¼" new stiffeners	✓*				Four (4) new stiffeners
B) See attachment #1 for as-built field welds at 85' elevation splice					
1) Inside weld mast to flange	✓				Partial penetration
2) Outside overhead mast to flange	✓				Fillet weld

Method of Inspection:

☒ Dry ☐ Wet ☐ Residual ☐ Continuous Unit Type: Mangaflux Y7 AC/DC
☒ AC ☐ DC ☐ Half-Wave ☒ Yoke ☐ Prod

Manufacturer or Contractor LCC

Remarks: *Noted stiffener field welds reinspected from 12-22-14 report due to additional welds added to correct marked up locations on 12-22-14.

Materials Testing, Inc. Technician Henry Daricek Level: II

Technician Certified in Accordance with MTI NDT Procedure WP-001.

William J. Soucy

1cc: Client
Attachment (1)

lgs

MATERIALS TESTING, INC.
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WELDING INSPECTION
Specific Scope Accredited

DATE: 1-15-2015

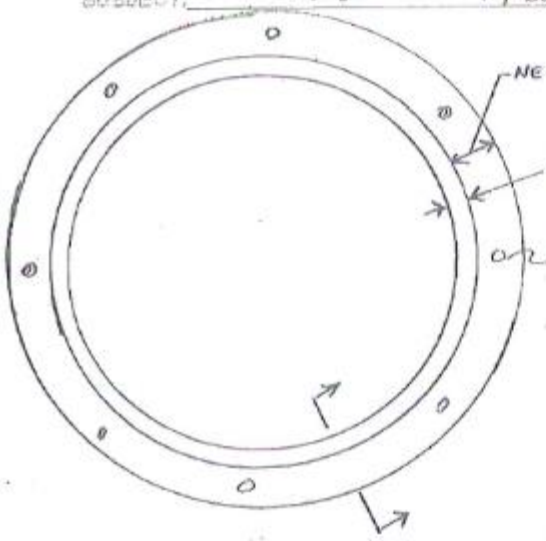
REPORT NO:

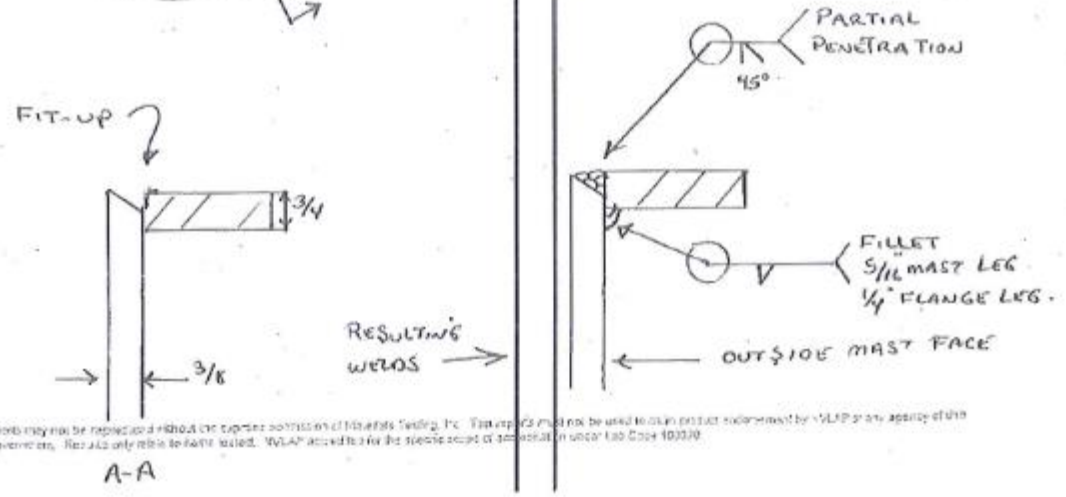
~~PAGE 3 of 4~~
ATTACHMENT

CLIENT:

PROJECT: T-MOBILE SITE CT11209D MILFORD SHORE AREA
234 MELBA STREET MILFORD CT

SUBJECT: ATTACHMENT #1 AS BUILT WELDS





A-A

American Welding Society

Certifies that Welding Inspector

Christopher Thomas

has complied with the requirements of AWS QC1,
Standard for AWS Certification of Welding Inspectors

13031271
CERTIFICATE NUMBER

March 1, 2016
EXPIRATION DATE

AMERICAN WELDING SOCIETY INCORPORATED 1932 NEW YORK

Nancy C. Cole
AWS PRESIDENT

Bill Belnke
AWS QUALIFICATION COMMITTEE CHAIR

Ron K. Wilson
AWS CERTIFICATION COMMITTEE CHAIR

American Welding Society®

Certifies that Welding Inspector

Henry G Daricek

has complied with the requirements of AWS QC1,
Standard for AWS Certification of Welding Inspectors

90070051
CERTIFICATE NUMBER

July 1 2017
EXPIRATION DATE

AWS PRESIDENT

AWS QUALIFICATION COMMITTEE CHAIR

AWS CERTIFICATION COMMITTEE CHAIR

INTERNATIONAL CODE COUNCIL

HENRY DARICEK

The International Code Council attests that the individual named on this certificate has satisfactorily demonstrated knowledge as required by the International Code Council by successfully completing the prescribed written examination based on codes and standards then in effect, and is hereby issued this certification as:

Structural Steel and Bolting Special Inspector

Given this day of February 3, 2010

Certificate No. 5300592-S1

Ronald L Lynn
President, Board of Directors

Richard P. Weiland
Chief Executive Officer

ICC INTERNATIONAL CODE COUNCIL

INTERNATIONAL CODE COUNCIL, INC. CERTIFIED WASHINGTON, D.C.

This certificate is the property of ICC and must be returned to ICC in the event of suspension or revocation of the certificate.

MATERIALS TESTING, INC.

CERTIFIES THAT

HENRY DARICEK

HAS SUCCESSFULLY COMPLETED
ALL REQUIRED TRAINING AND EXAMINATIONS
IN ACCORDANCE WITH MTI NDT PROCEDURE
WP-001 AND SNT-TC-1A
AND HAS SHOWN CONTINUED SATISFACTORY PERFORMANCE
FOR:

METHOD *MAGNETIC PARTICLE TESTING* LEVEL *II*

EXAMS ADMINISTERED BY: *HELLIER ASSOCIATES*

CERTIFYING AUTHORITY

WILLIAM J. SOUCY DATE 4/2/13

EXPIRATION DATE: 4/12/16

SOCIO-SL

SOIC LEGAL FORMS

MATERIALS TESTING, INC.

CERTIFIES THAT

HENRY DARICEK

HAS SUCCESSFULLY COMPLETED
ALL REQUIRED TRAINING AND EXAMINATIONS
IN ACCORDANCE WITH MTI NDT PROCEDURE
WP-001 AND SNT-TC-1A
AND HAS SHOWN CONTINUED SATISFACTORY PERFORMANCE
FOR:

METHOD *LIQUID PENETRANT TESTING* LEVEL *II*

EXAMS ADMINISTERED BY: *HELLIER ASSOCIATES*

CERTIFYING AUTHORITY

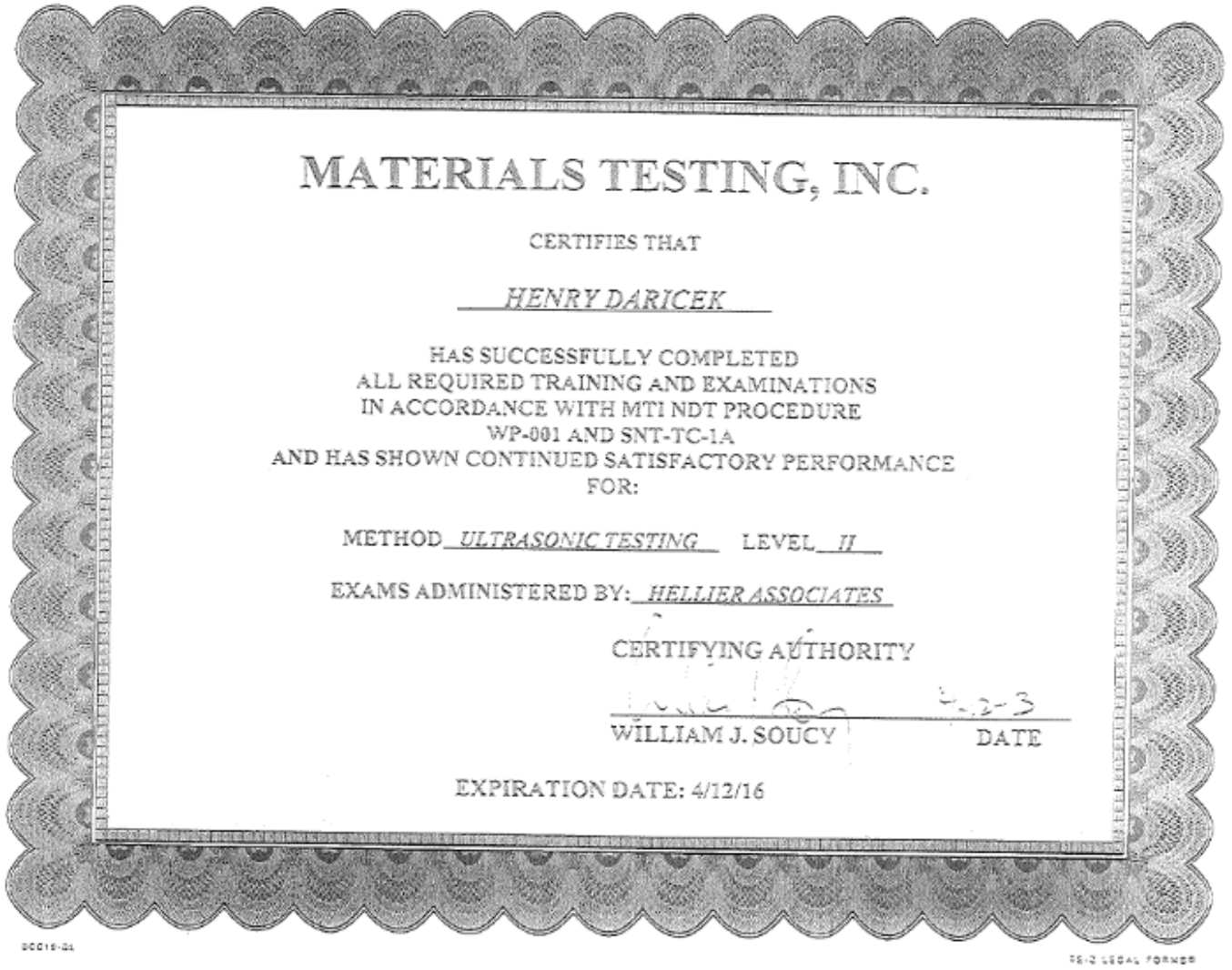
4-1-3

WILLIAM J. SOUCY DATE

EXPIRATION DATE: 4/12/16

GC010-BL

T2-2 LEGAL FORMS



MATERIALS TESTING, INC.

CERTIFIES THAT

HENRY DARICEK

HAS SUCCESSFULLY COMPLETED
ALL REQUIRED TRAINING AND EXAMINATIONS
IN ACCORDANCE WITH MTI NDT PROCEDURE
WP-001 AND SNT-TC-1A
AND HAS SHOWN CONTINUED SATISFACTORY PERFORMANCE
FOR:

METHOD *ULTRASONIC TESTING* LEVEL *II*

EXAMS ADMINISTERED BY: *HELLIER ASSOCIATES*

CERTIFYING AUTHORITY

WILLIAM J. SOUCY — DATE 4-2-3

EXPIRATION DATE: 4/12/16

SC019-01

TS-2 LEGAL FORMER

WTTI

WELDER TRAINING AND TESTING INSTITUTE

WWW.WTTI.COM

1144 N. GRAHAM ST. · ALLENTOWN, PA 18109 · TEL 610-820-9551 · FAX 610-820-0271

WELDER QUALIFICATION TEST RECORD
AWS D1.1

Type of Qualification: *Welder:* ☑ *Welding Operator:* ☐ *Tack Welder:* ☐

Name: Robert McKendry *ID Number:*

Welding Procedure Specification No.: LCC-SMAW-D1.1-G *Rev.:* 0 *Date:*

Variable	*Actual Variable Used in Qualification*	*Qualification Range*
Process / Type:	SMAW / Manual	
Electrode (Single / Multiple):	Single	Single
Current / Polarity:	DC / Positive	
Position:	3G & 4G	All Position Grooves & Fillets
Weld Progression:	Uphill	Uphill
Backing (Yes / No):	Yes	With or Both Sides
Material / Spec.:	ASTM A 36 to ASTM A 36	
Base Metal Thickness (Plate)		
Groove:	1"	1/8" (0.125") - Unlimited
Fillet:	n/a	1/8" (0.125") - Unlimited
Thickness (Pipe / Tube)		
Groove:	n/a	1/8" (0.125") - Unlimited
Fillet:	n/a	1/8" (0.125") - Unlimited
Diameter (Pipe)		
Groove:	n/a	24" OD & Over
Fillet:	n/a	All except T-, K-, & Y-connections
Filler Metal Spec. No.:	A5.1	
Class:	E7018	
F-No.:	F4	F1, F2, F3, F4
Gas / Flux Type:	None	
Other:	n/a	n/a

Visual Inspection

Acceptable Yes: ☑ *No:* ☐

Radiographic Test Results

#1: Radiograph - PASSED

#2: Radiograph - PASSED

Inspector / Interpreter: Leonard J. Macikonycz CWI / WTTI *Lab Number(s):* 20141281 : 20141282

Organization: Welder Training & Testing Institute *Date:* 12/5/2014

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of section 4 of AWS D1.1 (2010) Structural Welding Code—Steel.

Contractor: LCC Deployment Services, Inc. *Authorized by:* _____

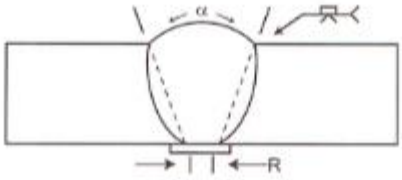
Date: _____

WTTI
WWW.WTTI.COM
WELDER TRAINING AND TESTING INSTITUTE
1144 N. GRAHAM ST. · ALLENTOWN, PA 18109 · TEL 610-820-9551 · FAX 610-820-0271

Welding Procedure Specification (WPS)
AWS D1.1

Company Name: LCC Deployment Services, Inc. **Date:** 12/5/2014 **PQR No. (s):** Pre-Qualified
Revision No.: 0 **Revision Date:** **By:** _____ **Authorized By:** _____
WPS No. (s): LCC-SMAW-D1.1-G **Welding Process(es):** SMAW **Type:** Manual

Joint Detail
Type of Joint: Single V Groove Weld
Backing: With
Single or Double Welded: Single Welded
Root Opening: 1/4" - 5/16"
Groove Angle: 45 - 55°
Back Gouging: Grind
Root Face Dimension: None
Radius (J-U): n/a



Base Metals
Material Group(s): Any Group I, II
to: Any Group I, II
Type or Grade: All to: All
Thickness - Grooves: 1/8"- Unlimited
Fillet: n/a **Diameter (Pipe):** All

Filler Metals

	1	2	3
SFA Spec.:	A 5.1	n/a	n/a
AWS Class:	E7018	n/a	n/a

Flux: n/a **Electrode Flux (Class):** n/a
Other: No increase in Filler Metal Strength

Shielding

Gas(es)	Percent of Composition	Flow Rate (CFH)
n/a	n/a	n/a

Gas Cup Size: n/a

Preheat
See Table 3.2 for additional requirements
Preheat Temp. (Min.): 50 °F *(If below 32°F preheat to a min. of 70°F)*
Interpass Temp. (Min.): 50 °F **(Max.):** 650 °F

Postweld Heat Treatment
Temperature: None
Time: n/a

Position
Position: All position grooves.
Weld Progression: Uphill only.

Electrical Characteristics
Current: DCEP **Power Source:** CC
Transfer Mode (GMAW): n/a
Tungsten Electrode Size: n/a **Type:** n/a

Technique
Stringer or Weave: Both
Single Pass or Multiple Pass (per side): Multiple pass
Number of Electrodes: Single electrode
Electrode Spacing **Longitudinal:** n/a
Lateral: n/a
Angle: n/a
Contact Tube to Work Distance: n/a
Peening: None
Interpass Cleaning: Mechanical Cleaning

Passes	Process	Class	Diameter	Type & Polarity	Amps	Volts	Travel Speed
All	SMAW	E7018	3/32"	DCEP	70 - 110	18 - 24	3 - 4 ipm
All	SMAW	E7018	1/8"	DCEP	90 - 160	20 - 30	4 - 6 ipm
All	SMAW	E7018	5/32"	DCEP	130 - 210	22 - 36	6 - 8 ipm

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Radiographic Inspection Report

Customer: LCC Deployment Services, Inc. ***Date:*** 12/5/2014
WTTI Job #: JOB3508
Welder's Name: Robert McKendry ***Procedure No.:*** RT-1
Material Type: ASTM A 36 ***Material Thickness:*** 1.00" ***Weld Thickness:*** 1.00"
Reinforcement Thickness: 0" ***Diameter / Length:*** n/a ***Source to Film Distance:*** 56"
X-Ray KV: 200 ***MA:*** 5 ***Spot Size:*** Large ***Exposure Time:*** 90 Seconds
Penetrameter: Source Side ***Size:*** 20 / 4T ***Type:*** Hole IQI
Shim Material: Steel ***Shim Thickness:*** .125"
Screens Front: 0.010" ***Back:*** 0.010"
Geometric Unsharpness (UG) Less Than: .020"

Weld Identification	Accept	Reject	Porosity	Slag	Crack	Inc. Pen	Inc. Fusion	Concavity	Convexity	Undercut	Surface	Tungsten	Oxidation	Burn Through	Artifact	Other	Remarks
20141281	X		X														3G, SMAW (Porosity acceptable)
20141282	X																4G, SMAW

Comments: n/a
Acceptance Standard: AWS D1.1-2010
Inspector: Leonard J. Macikonycz NDT Level II / WTTI

Authorized By: ***Date:*** 12/5/2014

ACCREDITED TESTING CERT #3430.02

The services reported in this document were performed in accordance with Welder Training and Testing Institute's Quality System, governed by Quality Manual, Rev. 16, 11/08/13 and AWS Accredited Test Facility (Cert. #900201). WTTI is accredited by A2LA to ISO 17025 for the test methods listed on Testing Cert. 3430.01 and 3430.02. The Scope of Accreditation is available at www.wtti.com.
These recorded results represent only the specimen(s) tested and are in compliance with applicable code(s), standard(s), and or contract requirement(s). At no point during testing or inspection at WTTI's facility has this item come into direct contact with mercury, mercury compounds, or devices containing single boundary containment of such.

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Welding Procedure Specification (WPS)
AWS D1.1

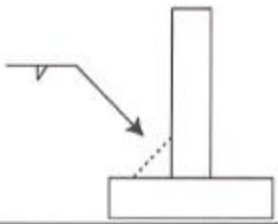
Company Name: LCC Deployment Services, Inc. ***Date:*** 12/5/2014 ***PQR No. (s):*** Pre-Qualified

Revision No.: 0 ***Revision Date:*** ***By:*** _____ ***Authorized By:*** _____

WPS No. (s): LCC-SMAW-D1.1-F ***Welding Process(es):*** SMAW ***Type:*** Manual

Joint Detail

Type of Joint: Fillet Welds Only
Backing: n/a
Single or Double Welded: n/a
Root Opening: n/a
Groove Angle: n/a
Back Gouging: n/a
Root Face Dimension: n/a
Radius (J-U): n/a



Base Metals

Material Group(s): Any Group I, II
to: Any Group I, II
Type or Grade: All to: All
Thickness - Grooves: n/a
Fillet: All ***Diameter (Pipe):*** All except T,K,Y

Postweld Heat Treatment

Temperature: None
Time: n/a

Position

Position: All position fillets
Weld Progression: Uphill Only

Filler Metals

	1	2	3
SFA Spec.:	A 5.1	n/a	n/a
AWS Class:	E7018	n/a	n/a

Flux: n/a ***Electrode Flux (Class):*** n/a
Other: No increase in Filler Metal Strength

Electrical Characteristics

Current: DCEP ***Power Source:*** CC
Transfer Mode (GMAW): n/a
Tungsten Electrode Size: n/a ***Type:*** n/a

Technique

Stringer or Weave: Both
Single Pass or Multiple Pass (per side): Both
Number of Electrodes: Single electrode
Electrode Spacing ***Longitudinal:*** n/a
Lateral: n/a
Angle: n/a
Contact Tube to Work Distance: n/a
Peening: None
Interpass Cleaning: Mechanical Cleaning

Shielding

Gas(es)	***Percent of Composition***	***Flow Rate (CFH)***
n/a	n/a	n/a

Gas Cup Size: n/a

Preheat

See Table 3.2 for additional requirements

Preheat Temp. (Min.): 50 °F *(If below 32°F preheat to a min. of 70°F)*
Interpass Temp. (Min.): 50 °F ***(Max.):*** 650 °F

Passes	***Process***	***Class***	***Diameter***	***Type & Polarity***	***Amps***	***Volts***	***Travel Speed***
All	SMAW	E7018	3/32"	DCEP	70 - 110	18 - 24	3 - 4 ipm
All	SMAW	E7018	1/8"	DCEP	90 - 160	20 - 30	4 - 6 ipm
All	SMAW	E7018	5/32"	DCEP	130 - 210	22 - 36	6 - 8 ipm

Below is a list of Prequalified Basemetals: AWS D1.1

Group #	Steel Specification	
	ASTM A 36	(≤ ¾ IN. [20 MM])
	ASTM A 53	Grade B
	ASTM A 106	Grade B
	ASTM A 131	Grades A, B, CS, D, DS, E
	ASTM A 139	Grade B
	ASTM A 381	Grade Y35
I	ASTM A 500	Grade A, B, C
	ASTM A 501	
	ASTM A 516	Grade 55, 60
	ASTM A 524	Grade I, II
	ASTM A 573	Grade 65, 58
	ASTM A 709	Grade 36 (≤ ¾ in. [20 mm])
	ASTM A 1008 SS	Grade 30, 33 Type I, 40 Type I
	ASTM A 1011 SS	Grade 30, 33, 36 Type I, 40, 45
	API 5L	Grade B, X42
	ABS	Grade A, B, D, CS, DS, E[a]
	ASTM A 36	(> ¾ in. [20 mm])
	ASTM A 131	Grades AH32, DH32, EH32, Grades AH36, DH36, EH36
	ASTM A 441	
	ASTM A 516	Grade 65, 70
	ASTM A 529	Grade 50, 55
	ASTM A 537	Class I
	ASTM A 572	Grade 42, 50, 55
	ASTM A 588[a]	(4 in. [100 mm] and under)
	ASTM A 595	Grade A, B, C
	ASTM A 606[a]	
	ASTM A 618	Grades Ib, II, III
	ASTM A 633	Grade A, C, D, (2 ½ in. [65 mm] and under)
	ASTM A 709	Grade 36 (> ¾ in. [20 mm]), 50, 50 W[a], 50 S, Grade HPS 50W[a]
	ASTM A 710	Grade A, Class 2 > 2 in. [50 mm]
II	ASTM A 808	(2 - ½ in. (65 mm] and under)
	ASTM A 913	Grade 50
	ASTM A 992	
	ASTM A 1008 HSLAS	Grade 45 Class 1, 2, Grade 50 Class 1, 2, Grade 55 Class 1, 2
	ASTM A 1008 HSLAS-F	Grade 50
	ASTM A 1011 HSLAS	Grade 45 Class 1, 2, Grade 50 Class 1, 2 , Grade 55 Class 1, 2
	ASTM A 1011 HSLAS-F	Grade 50
	ASTM A 1011 SS	Grade 50, 55
	ASTM A 1018 HSLAS	Grade 45 Class 1, 2, Grade 50 Class 1, 2, Grade 55 Class 1, 2
	ASTM A 1018 HSLAS-F	Grade 50
	ASTM A 1018 SS	Grade 30, 33, 36, 40
	API 2H	Grade 42, 50
	API 2MT1	Grade 50
	API 2W	Grade 42, 50, 50 T
	API 2Y	Grade 42, 50, 50 T
	API 5L	Grade X52
	ABS	Grades AH32, DH32, EH32, Grades AH36, DH36, EH36[a]
	API 2W	Grade 60
	API 2Y	Grade 60
	ASTM A 572	Grade 60, 65
	ASTM A 537	Class 2[a]
III	ASTM A 633	Grade E[a]
	ASTM A 710	Grade A, Class 2 ≤ 2 in. [50 mm]
	ASTM A 710	Grade A, Class 3 ≤ 2 in. [50 mm]
	ASTM A 913[b]	Grade 60, 65
	ASTM A 1018 HSLAS	Grade 60 Class 2, Grade 70 Class2
	ASTM A 1018 HSLAS-F	Grade 60 Class 2, Grade 70 Class 2
	ASTM A 709	Grade HPS70W
IV	ASTM A 852	

[a] Special welding materials and WPS (e.g., E80XX-X low-alloy electrodes) may be required to match the notch toughness of base metal (for applications involving impact loading or low temperature), or for atmospheric corrosion and weathering characteristics (see 3.7.3).
[b] The heat input limitations of 5.7 shall not apply to ASTM A 913 Grade 60 or 65.

AWS D1.1/D1.1M:2010 an American National Standard Structural Welding Code-Steel, 2010, American Welding Society

PREQUALIFIED WPS REQUIREMENTS
AWS D1.1

Welding Process: SMAW

Variable	Position	Weld Type	
Maximum Electrode Diameter-	Flat	Fillet[a]	5/16"
		Groove[a]	1/4"
		Root Pass	3/16"
	Horizontal	Fillet	1/4"
		Groove	3/16"
	Vertical	All	3/16"[b]
	Overhead	All	3/16"[b]
Maximum Current-	All	Fillet	
	All	Groove weld root pass (with opening)	(Within the range of recommended operation by the filler metal manufacturer)
		Groove weld root pass (without opening)	
		Groove weld fill pass	
		Groove weld cap pass	
Maximum Root Pass Thickness[c]-	Flat	All	3/8"
	Horizontal		5/16"
	Vertical		1/2"
	Overhead		5/16"
Maximum Fill Pass Thickness-	All	All	3/16"
Maximum Single Pass Fillet Weld Size[d]-	Flat	Fillet	3/8"
	Horizontal		5/16"
	Vertical		1/2"
	Overhead		5/16"

[a] Except Root Passes.

[b] 5/32" for EXX14 and low-hydrogen electrodes.

[c] See 3.7.2 for width-to-depth limitations.

[d] See 3.7.3 for requirements for welding unpainted and exposed ASTM A588.

AWS D1.1/D1.1M:2010 an American National Standard Structural Welding Code-Steel, 2010, American Welding Society

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Radiographic Inspection Report

Customer: LCC Deployment Services, Inc. ***Date:*** 1/2/2015
WTTI Job #: JOB3659
Welder's Name: Sergio Huerta ***Procedure No.:*** RT-1
Material Type: ASTM A 36 ***Material Thickness:*** 1.00" ***Weld Thickness:*** 1.00"
Reinforcement Thickness: 0" ***Diameter / Length:*** n/a ***Source to Film Distance:*** 56"
X-Ray KV: 200 ***MA:*** 5 ***Spot Size:*** Large ***Exposure Time:*** 90 Seconds
Penetrameter: Source Side ***Size:*** 20 / 4T ***Type:*** Hole IQI
Shim Material: None used ***Shim Thickness:*** n/a
Screens Front: 0.010" ***Back:*** 0.010"
Geometric Unsharpness (UG) Less Than: .020"

Weld Identification	Accept	Reject	Porosity	Slag	Crack	Inc. Pen	Inc. Fusion	Concavity	Convexity	Undercut	Surface	Tungsten	Oxidation	Burn Through	Artifact	Other	Remarks
201412423	X										X						3G, SMAW (Surface aceptable)
201412424	X			X													4G, SMAW (Slag acceptable)

Comments: n/a
Acceptance Standard: AWS D1.1-2010
Inspector: Leonard J. Macikonycz NDT Level II / WTTI

Authorized By: ***Date:*** 1/2/2015

ACCREDITED
TESTING CERT #3430.02

The services reported in this document were performed in accordance with Welder Training and Testing Institute's Quality System, governed by Quality Manual, Rev. 16, 11/08/13 and AWS Accredited Test Facility (Cert. #9002201). WTTI is accredited by A2LA to ISO 17025 for the test methods listed on Testing Cert. 3430.01 and 3430.02. The Scope of Accreditation is available at www.wtti.com.
These recorded results represent only the specimen(s) tested and are in compliance with applicable code(s), standard(s), and or contract requirement(s). At no point during testing or inspection at WTTI's facility has this item come into direct contact with mercury, mercury compounds, or devices containing single boundary containment of such.

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WELDER QUALIFICATION TEST RECORD
AWS D1.1

Type of Qualification: ***Welder:*** ☑ ***Welding Operator:*** ☐ ***Tack Welder:*** ☐
Name: Sergio Huerta ***ID Number:***
Welding Procedure Specification No.: LCC-SMAW-D1.1-G ***Rev.:*** 0 ***Date:***

Variable	***Actual Variable Used in Qualification***	***Qualification Range***
Process / Type:	SMAW / Manual	
Electrode (Single / Multiple):	Single	Single
Current / Polarity:	DC / Positive	
Position:	3G & 4G	All Position Grooves & Fillets
Weld Progression:	Uphill	Uphill
Backing (Yes / No):	Yes	With or Both Sides
Material / Spec.:	ASTM A 36 to ASTM A 36	
Base Metal		
Thickness (Plate)		
Groove:	1"	1/8" (0.125") - Unlimited
Fillet:	n/a	1/8" (0.125") - Unlimited
Thickness (Pipe / Tube)		
Groove:	n/a	1/8" (0.125") - Unlimited
Fillet:	n/a	1/8" (0.125") - Unlimited
Diameter (Pipe)		
Groove:	n/a	24" OD & Over
Fillet:	n/a	All except T-, K-, & Y-connections
Filler Metal Spec. No.:	A5.1	
Class:	E7018	
F-No.:	F4	F1, F2, F3, F4
Gas / Flux Type:	None	
Other:	n/a	n/a

Visual Inspection
Acceptable ***Yes:*** ☑ ***No:*** ☐

Radiographic Test Results
#1: Radiograph - PASSED
#2: Radiograph - PASSED

Inspector / Interpreter: Leonard J. Macikonycz CWI / WTTI ***Lab Number(s):*** 201412423 : 201412424
Organization: Welder Training & Testing Institute ***Date:*** 1/2/2015

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of section 4 of AWS D1.1 (2010) Structural Welding Code—Steel.

Contractor: LCC Deployment Services, Inc. ***Authorized by:*** _____

Date: _____

WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD

Type of Process SMAW
Name Turner, Tarry Identification No 3245
Welding Procedure Specification No 031 Rev 0 Date 11/16/2013

Variable	Record Actual Values Used in Qualification	Qualification Range
Process/Type	SMAW	
Electrode (single or multiple)	Single	
Current/Polarity	DCEP	
Position	4-G	
Weld Progression	N/A	
Backing (YES or NO)	Yes ASTM A-148-73	
Material/Spec.	ASTM A-148-73 to ASTM A-148-73	
Base Metal		
Thickness: (Plate)	1"	1/8" To Unlimited
Groove		
Fillet		
Thickness: (Pipe/tube)	N/A	
Groove	N/A	
Fillet		
Diameter: (Pipe)	N/A	
Groove	N/A	
Fillet		
Filler Metal		
Spec. No.	ANSI/AWS A5-1	
Class	E11018	
F-No.	F-4	
Gas/Flux Type	N/A	
Other		

AWS QC 1 MARVIN L. TYLER 94070891 CWI

Marvin L. Tyler

VISUAL INSPECTION
Acceptable YES or NO YES

Guided Bend Test Results

Type	Result	Type	Result
Side Bend (2)	Satisfactory		

FILLET TEST RESULTS

Appearance N/A
Fracture Test Root Penetration N/A
(Describe the location, nature, and size of any crack or tearing of the specimen)

Fillet Size N/A
Macroetch N/A

Inspected by Marvin L. Tyler (AWS-CWI) #94070891
Organization TYLER ASSOCIATES, INC.

Test Number 019
Date 11/16/2013

RADIOGRAPHIC TEST RESULTS

Film Identification Number	Result	Remarks	Film Identification Number	Result	Remarks
RADIOGRAPHIC TEST N/A					

Interpreted by
Organization

Test Number
Date

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of section 4, Part C of ANSI/AWS D1.1 Structural Welding Code-Steel 2010 Ed.

Manufacturer or contractor: Tyler Welding Lab, 110 Fairchild Downs Place, Cary, NC 27518 (919) 367-8872 tyweld@juno.com
Authorized by: Marvin Tyler (Welding Engineer & AWS QC-1 CWI) Certified Welding Inspector
Date 11/16/2013

WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD

Type of Process SMAW
Name Turner, Tarry Identification No. 3241
Welding Procedure Specification No. 031 Rev 0 Date 11/16/2013

Variable	Record Actual Values Used in Qualification	Qualification Range
Process/Type	SMAW	
Electrode (single or multiple)	Single	
Current/Polarity	DCEP	
Position	3-G	
Weld Progression	Vertical-Up	
Backing (YES or NO)	Yes ASTM A-148-73	
Material/Spec.	ASTM A-148-73 to ASTM A-148-73	
Base Metal		
Thickness: (Plate)	1"	1/8" To Unlimited
Groove		
Fillet		
Thickness: (Pipe/tube)		
Groove	N/A	
Fillet	N/A	
Diameter: (Pipe)		
Groove	N/A	
Fillet	N/A	
Filler Metal		
Spec. No.	ANSI/AWS A5-1	
Class	E11018	
F-No.	F-4	
Gas/Flux Type	N/A	
Other		

AWS QC 1 MARVIN L. TYLER 94070891 CWI

Marvin L. Tyler

VISUAL INSPECTION
Acceptable YES or NO YES

Guided Bend Test Results

Type	Result	Type	Result
Side Bend (2)	Satisfactory		

FILLET TEST RESULTS

Appearance N/A
Fracture Test Root Penetration N/A
(Describe the location, nature, and size of any crack or tearing of the specimen)
Fillet Size N/A
Macroetch N/A

Inspected by Marvin L. Tyler (AWS-CWI) #94070891
Organization TYLER ASSOCIATES, INC.
Test Number 014
Date 11/16/2013

RADIOGRAPHIC TEST RESULTS

Film Identification Number	Result	Remarks	Film Identification Number	Result	Remarks
RADIOGRAPHIC TEST N/A					

Interpreted by
Organization
Test Number
Date

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of section 4, Part C of ANSI/AWS D1.1 Structural Welding Code-Steel 2010 Ed.

Manufacturer or contractor: Tyler Welding Lab, 110 Fairchild Downs Place, Cary, NC 27518 (919) 367-8872 tyweld@juno.com
Authorized by: Marvin Tyler (Welding Engineer & AWS QC-1 CWI) Certified Welding Inspector
Date 11/16/2013

TJM Inspection Service

P.O. BOX 12105, PLEASANTON, CA 94588

WELDER QUALIFICATION RECORD

Weld Operator: Louis Cornett
Company Name: Advance Welding
Welding Process(es): SMAW
Supporting PQR No. (s): Prequalified

Identification #: 9796
Revision: 0 Date: 5/16/14 By: TM
Authorized By: Tim Massey Date: 5/16/14
Type– Manual ☒ Semi-Automatic ☐
Machine ☐ Automatic ☐

JOINT DESIGN USED
Type: AWS D1.1 B-U2a
Single ☒ Double Weld ☐
Backing: Yes ☒ No ☐ Method
Backing Material: N/A
Root Opening: 1/4" Root Face Dimension 1/4"
Groove Angle: 45° Radius (J-U) ------
Back Gouging: Yes No ☒ Method ---------

POSITION
Position of Groove: 2G,3G,4G Fillet: All
Vertical Progression: Up ☒ Down ☐

ELECTRICAL CHARACTERISTICS
Transfer Mode (GMAW) Short-Circuiting ☐
Globular ☐ Spray ☐
Current: AC☐ DCEP ☒ DCEN ☐ Pulsed ☐
Other

BASE METALS
Material Spec. A 572
Type or Grade 65
Thickness: Groove 1.00 " Fillet ----------
Diameter (Pipe)

Testing All Testing I.A.W. AWS D1.1 (10)
Nick: N/A
Bend Side X6 Acceptable

FILLER METALS
AWS Specification A 5.1
AWS Classification E 8018
Qualified for: 1G, 2G, 3G 4G .125" to Unlimited

TECHNIQUE
Stringer or Weave Bead: Stringer
Multi-pass or Single Pass (per side) Single
Number of Electrodes as required
Electrode Spacing Longitudinal n/a
Lateral n/a
Angle As needed

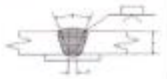
SHIELDING
Flux Lo/High Gas ------
Composition ------
Electrode-Flux (Class) F 4 Flow Rate ------
Gas Cup Size ------

Contact Tube to Work Distance as needed
Peening N/A
Interpass Cleaning: power wire brush / grinder

PREHEAT
Preheat Temp., Min 70° F min
Interpass Temp., Min 70° F Max 250° F

POSTWELD HEAT TREATMENT
Temp. Not permitted
Time

WELDING PROCEDURE

Pass or Weld Layer(s)	Process	Filler Metals		Current		Volts	Travel Speed	Joint Details
		Class	Diam.	Type & Polarity	Amps or Wire Feed Speed			
1	SMAW	E 8018	1/8"	DCEP	123	4.27	N/A	
2-16	" "	" "	" "	" "	120-125	25.1	" "	

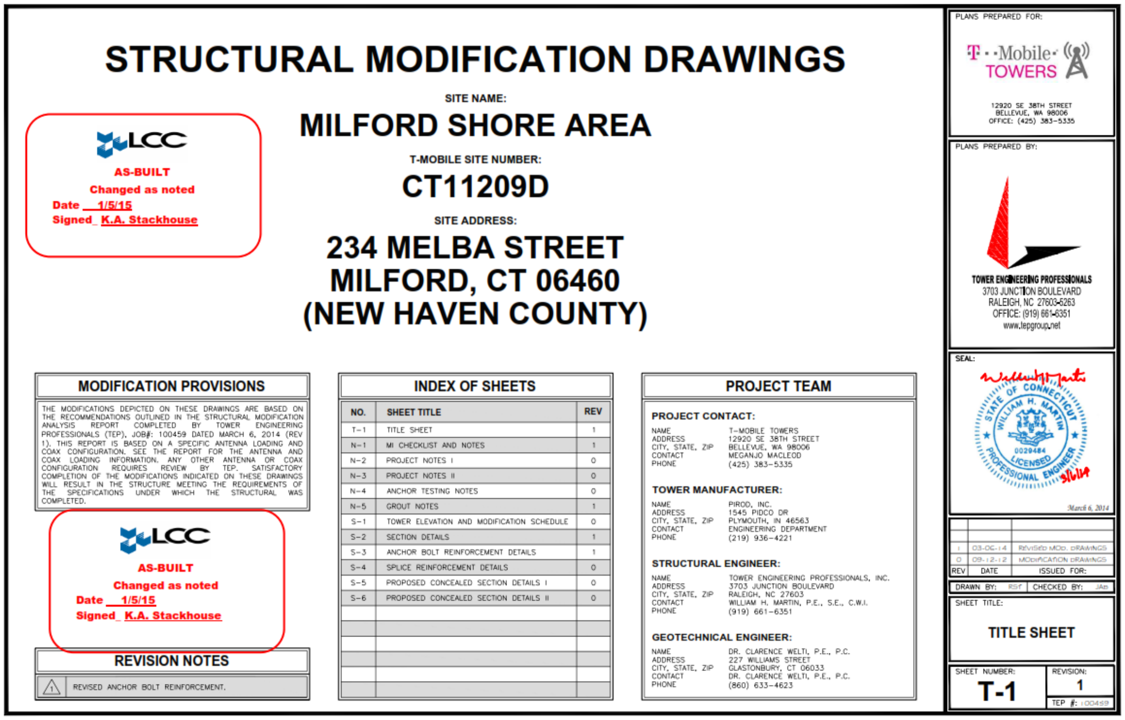
We certify that the data in this record is correct and that the coupons were prepared, welded and tested in accordance with AWS D1.1 10

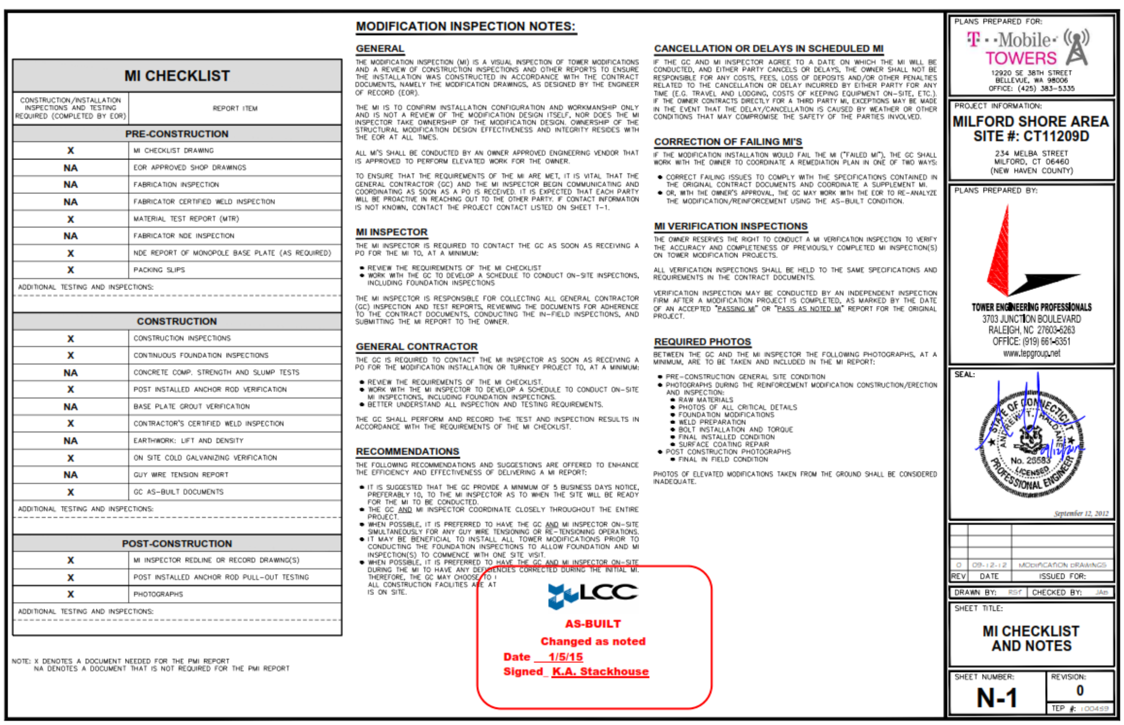
Approved By: _____
Tim Massey CWI # 00020431

Tim L Massey
CWI 00020431
QC1 EXP. 2/1/2015

6.2.5 ON SITE COLD GALVANIZING VERIFICATION

6.2.6 GC AS-BUILT DOCUMENTS





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 PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE 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 AMMENDMENTS.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES 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 IT'S 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 ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE 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.

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

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:
STATE OF CONNECTICUT · ANDREW J. [illegible] · LICENSED PROFESSIONAL ENGINEER
September 12, 2012

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

DRAWN BY: RST | CHECKED BY: JAB

SHEET TITLE: **PROJECT NOTES I**

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

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: STRUCTURAL STEEL:
   - ANGLE: ASTM A36
   - PIPE/TUBE: ASTM A500-50
   - PLATE: ASTM A36 (SELF SUPPORTING AND GUYED TOWERS)
   - PLATE: ASTM A572-50 (MONOPOLE)

   A. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
   B. ALL U-BOLTS, ASTM A193 GRADE B7
   C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
   D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. 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.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. 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.
6. 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.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. 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.
10. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

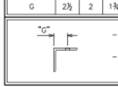
WELDING NOTES:

1. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL".
2. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
3. 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.
4. 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.
5. DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW 0°F. 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.
6. DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
7. FOR ALL WELDING, USE E70XX ELECTRODES.
8. AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OR GRINDING SHALL RECEIVE A COLD-GALVANIZED COATING. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE [illegible] SS OF 3 MILS

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

WORKABLE GAGES

LEG	4	3½	3	2½	2	1¾
G	2½	2	1¾	1⅜	1⅛	1



- WORKABLE GAGES GIVEN IN INCHES
- MATCH EXISTING WHEN APPLICABLE

BOLT TIGHTENING PROCEDURE:

1. TIGHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.

BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.

½"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
⅝"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
¾"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
⅞"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING EIGHT DIA.

½"	BOLTS 2.25 TO 4.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
⅝"	BOLTS 2.75 TO 5.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
¾"	BOLTS 3.25 TO 6.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
⅞"	BOLTS 3.75 TO 7.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT

2. 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:
3. 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.

4. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

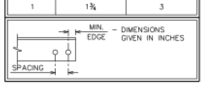
NOMINAL HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
½	9/16	9/16 X 11/16
⅝	11/16	11/16 X ⅞
¾	13/16	13/16 X 1
⅞	15/16	15/16 X 1⅛
1	1 1/16	1 1/16 X 1 5/16

- DIMENSIONS GIVEN IN INCHES

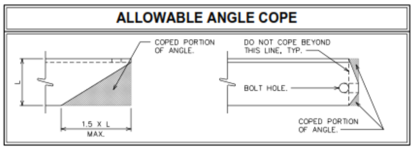
BOLT EDGE AND SPACING

BOLT DIAMETER	MIN. EDGE	SPACING
½	⅞	1½
⅝	1⅛	1⅞
¾	1¼	2¼
⅞	1½	2⅝
1	1¾	3



- DIMENSIONS GIVEN IN INCHES

ALLOWABLE ANGLE COPE



PLANS PREPARED FOR:
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OFFICE: (425) 383-5335

PROJECT INFORMATION:
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SEAL:
STATE OF CONNECTICUT · ANDREW J. [illegible] · LICENSED PROFESSIONAL ENGINEER
September 12, 2012

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

DRAWN BY: RST | CHECKED BY: JAB

SHEET TITLE: **PROJECT NOTES II**

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

GENERAL NOTES:

1. IF EXISTING GROUT IS PRESENT, REFER TO CROWN DOCUMENT ENG-PRC-10012 (BASE PLATE GROUT REPAIR) FOR REPAIR PROCEDURE.
2. PROPRIETARY PRE-BLENDED NON-SHRINK GROUT, MEETING ASTM C1107 OR CORPS OF ENGINEERS SPECIFICATION CRD-C621 SHALL BE USED FOR GROUTING MACHINE BASES AND COLUMN BASEPLATES.
3. GROUT SHALL BE TESTED FOR SPECIFICATION COMPLIANCE PER ASTM C1107 AND ALL APPLICAPABLE STANDARDS REFERENCED IN ASTM C1107.
4. CONSISTENCY TEST, SUCH AS FLOW-CONE TEST (ASTM C939) OR FLOW TABLE TEST (ASTM C230 AND CR27) CAN GIVE AN INDICATION OF THE WORKABILITY, PLACEABILITY, AND WORKING LIFE AND CAN BE USE AS A QUALITY CONTROL MEASURE. TOO SHORT A WORKING TIME (RAPID STIFFENING) CAN RESULT IN INEFFECTIVE PLACEMENT AND CONSOLIDATION, VOIDS, LOSS OF CONTACT AREA WITH GROUT ELEMENT, COLD JOINTS, BLOCKAGE, AND OTHER PROBLEMS IF GROUTING IS NOT PERFORMED IN A TIMELY MANNER. EXCESSIVE WORKING TIME CAN ALLOW BLEEDING AND WATER POCKETS. WORKING TIME SHOULD BE OF A SUFFICIENT PERIOD TO ALLOW FOR TRANSPORT, HANDLING, AND PLACING OF GROUT AT A COMFORTABLE PACE.
5. RE-TEMPERING (ADDING WATER AND REMIXING THE GROUT TO REGAIN ORIGINAL CONSISTENCY) IS NOT PERMITTED.

PREPARATION FOR GROUT:

1. CONCRETE SURFACE TO BE GROUTED MUST BE CLEAN AND FREE OF CURING COMPOUND, OIL, COATING, LAITANCE, AND DIRT. THE SURFACE SHOULD BE ROUGHENED TO DEPTH OF ¼ IN. BY SANDBLASTING, WATER BLASTING, LIGHTWEIGHT CHIPPING, OR OTHER METHODS TO PROVIDE A BETTER MECHANICAL BOND (SEE ASTM D4258 AND D4259).
2. CONCRETE SURFACE SHOULD BE MOISTENED FOR ABOUT 24 HOURS BEFORE GROUTING TO PREVENT MOISTURE LOSS FROM GROUT TO THE CONCRETE; HOWEVER, NO FREE-STANDING WATER SHOULD BE PRESENT WHILE GROUTING.
3. A FORM MAY BE BUILT AROUND THE BASEPLATE, OR SAND DIKES MAY BE USED TO CONFINE THE GROUT. THE TOP OF THE FORM SHOULD EXTEND ABOVE THE BOTTOM OF THE BASEPLATE.

MIXING AND PLACING GROUT:

1. AFTER MIXING, GROUT MUST BE PLACED WITHIN WORKING TIME. GROUT MUST BE PLACED IN A CONTINUES MONOLITHIC MANNER TO AVOID COLD JOINTS AND TO COMPLETELY FILL THE GROUT SPACE AND PRODUCE INTIMATE CONTACT WITH THE GROUTED ITEM. THE GROUT SHOULD BE PLACED IN ONE DIRECTION FROM ONE SIDE TO THE OTHER TO MONITOR GROUT MOVEMENT PROPERLY AND AVOID AIR ENTRAPMENT.
2. STIFF-PLASTIC, PLASTIC, AND FLOWABLE GROUT MAY BE VIBRATED INTO PLACE. VIBRATION OF FLUID MIXES SHOULD BE AVOIDED AS VIBRATION MAY CAUSE BLEEDING AND AIR ENTRAPMENT.
3. AFTER PLACEMENT BUT BEFORE FINAL SET, THE FORM CAN BE REMOVED. THE GROUT CUT BACK AT A 45 DEGREE ANGLE DOWN FROM THE BASEPLATE TO THE CONCRETE BASE, FINISHED WITH A WOOD FLOAT OR BRUSH, AND CURED AT 40 TO 90 DEGREE FAHRENHEIT WITH WET BURLAP OR OTHER METHOD OF WET CURING OR AS SPECIFIED BY THE MANUFACTURE BUT NOT LESS THAN 7 DAYS OF WET CURING. TO AVOID EDGE CRACKING AND SPALLING, A 45 DEGREE GROUT FACE IS RECOMMENDED. INADEQUATE CURING, OR EXCESSIVE FINISHING CAN CAUSE HAIRLINE CRACKS.
4. ONCE COMPLETED, GROUT SHALL BE INSPECTED AND CLASSIFIED PER CROWN DOCUMENT ENG-BUL-10122 (TOWER BASE PLATE GROUT INSPECTION AND CLASSIFICATION).

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

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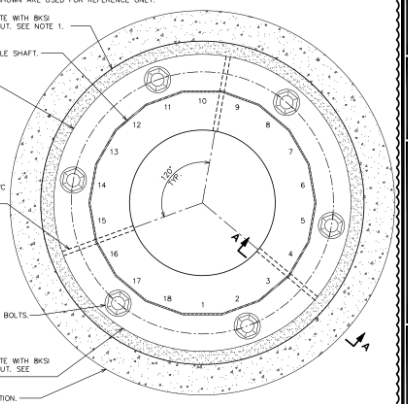
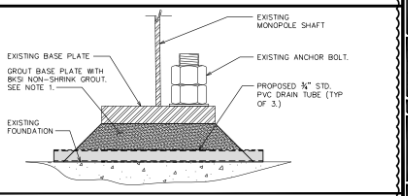
NOTE:

1. THE DETAILS SHOWN ARE USED FOR REFERENCE ONLY.



PLAN VIEW AT BASE
SCALE: N.T.S.



SECTION A-A
SCALE: N.T.S.

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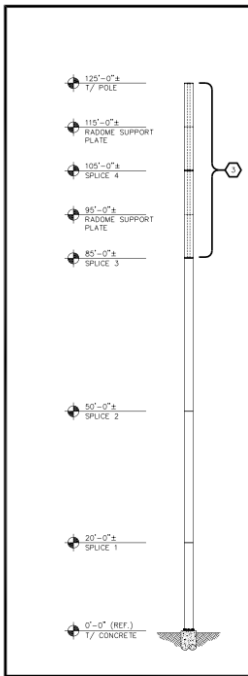
SEAL: STATE OF CONNECTICUT · WILLIAM H. MARTIN · 0029484 · LICENSED PROFESSIONAL ENGINEER
March 6, 2014

REV	DATE	ISSUED FOR:
1	03-06-14	REVISED MOD. DRAWINGS
0	09-12-12	MODIFICATION DRAWINGS

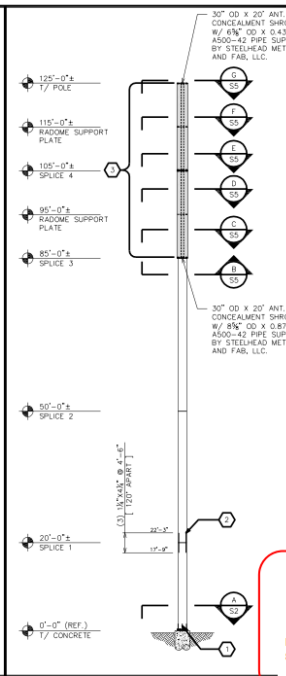
DRAWN BY: RSF CHECKED BY: RJR

SHEET TITLE: **GROUT NOTES**

SHEET NUMBER: **N-5** REVISION: 1
TEP #: 100468



TOWER ELEVATION (EXISTING)
SCALE: 3/64" = 1'-0"



TOWER ELEVATION (PROPOSED)
SCALE: 3/64" = 1'-0"

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:

1. 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.\
2. NDE OF THE CIRCUMFERENTIAL WELD OF THE BASE PLATE TO SHAFT CONNECTION IS REQUIRED. PLEASE SEE ENG-SOW-1033 : TOWER BASE PLATE NDE AND ENG-BUL-10051 : NDE REQUIREMENTS FOR MONOPOLE BASEPLATE TO PREVENT CONNECTION FAILURE. NOTIFY THE EOR AND T-MOBILE TOWERS ENGINEERING IMMEDIATELY IF ANY CRACKS ARE SUSPECTED OR HAVE BEEN IDENTIFIED. THE NDE SHALL INCLUDE ALL EXISTING MODIFICATIONS THAT HAVE BEEN WELDED TO THE BASE PLATE. FULL PENETRATION WELDING TO THE BASEPLATE REQUIRED AS 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 MODIFICATIONS BEING PERFORMED MAY REQUIRE ALTERNATE ANTENNA MOUNTS BE INSTALLED DUE TO 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.

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

0 16 32
SCALE IN FEET

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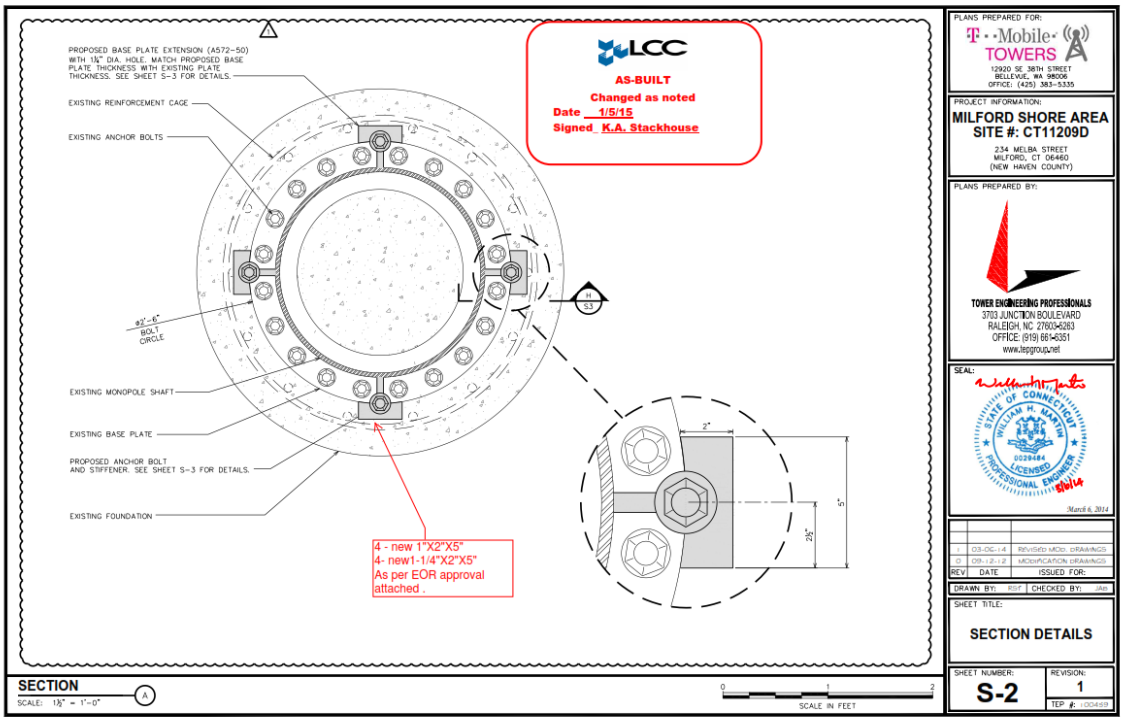
SEAL: STATE OF CONNECTICUT · JAMES A. DALEY · No. 20583 · LICENSED PROFESSIONAL ENGINEER
September 12, 2012

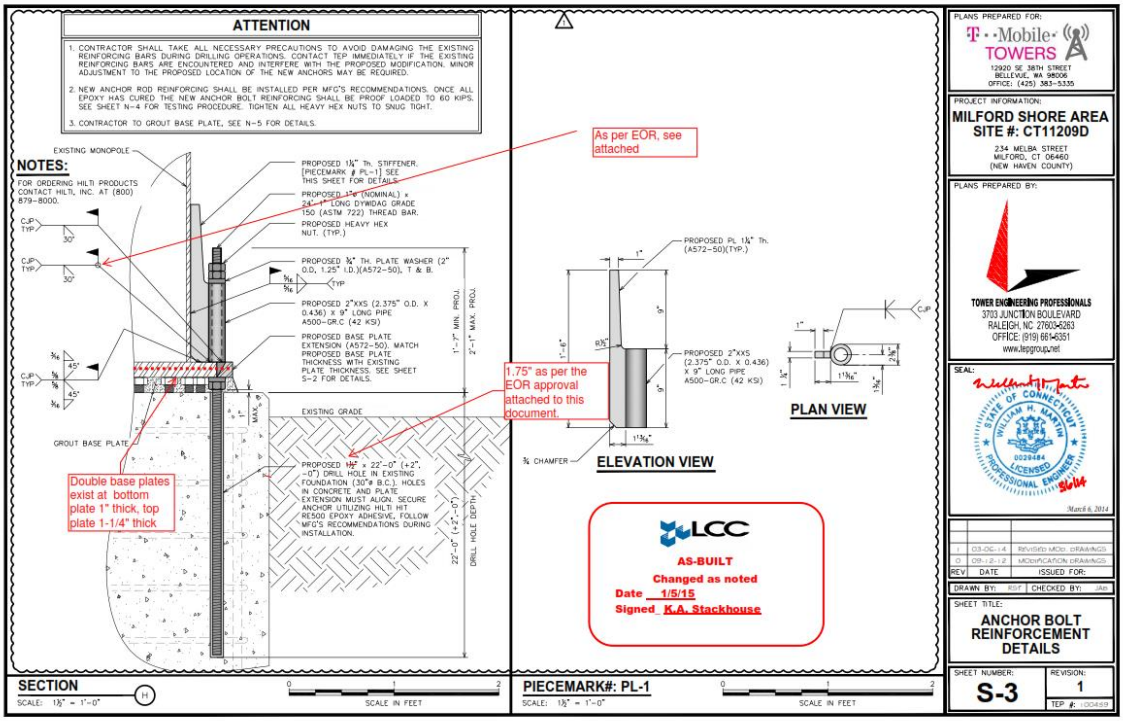
REV	DATE	ISSUED FOR:
0	09-12-12	MODIFICATION DRAWINGS

DRAWN BY: RSF CHECKED BY: JAD

SHEET TITLE: **TOWER ELEVATION AND MODIFICATION SCHEDULE**

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


PROPOSED BASE PLATE EXTENSION (A572-50) WITH 1¾" DIA. HOLE. MATCH PROPOSED BASE PLATE THICKNESS WITH EXISTING PLATE THICKNESS. SEE SHEET S-3 FOR DETAILS.
EXISTING REINFORCEMENT CAGE
EXISTING ANCHOR BOLTS
EXISTING MONOPOLE SHAFT
EXISTING BASE PLATE
PROPOSED ANCHOR BOLT AND STIFFENER: SEE SHEET S-3 FOR DETAILS.
EXISTING FOUNDATION
BOLT CIRCLE
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
4 - new 1"X2"X5"
4- new1-1/4"X2"X5"
As per EOR approval attached .
SECTION
SCALE: 1½" = 1'-0"
SCALE IN FEET
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.tepgroup.net
SEAL:
STATE OF CONNECTICUT
WILLIAM H. MARTIN
0029484
LICENSED
PROFESSIONAL ENGINEER
March 6, 2014
REV DATE ISSUED FOR:
DRAWN BY: CHECKED BY:
SHEET TITLE:
SECTION DETAILS
SHEET NUMBER: S-2
REVISION: 1
TEP #:


ATTENTION
1. 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.
2. 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 60 KIPS. SEE SHEET N-4 FOR TESTING PROCEDURE. TIGHTEN ALL HEAVY HEX NUTS TO SNUG TIGHT.
3. CONTRACTOR TO GROUT BASE PLATE, SEE N-5 FOR DETAILS.
NOTES:
FOR ORDERING HILTI PRODUCTS CONTACT HILTI, INC. AT (800) 879-8000.
EXISTING MONOPOLE
PROPOSED 1¼" Th. STIFFENER. [PIECEMARK # PL-1] SEE THIS SHEET FOR DETAILS
PROPOSED 2¼" (NOMINAL) x 24'-4" LONG DYWIDAG GRADE 150 (ASTM 722) THREAD BAR.
PROPOSED HEAVY HEX NUT. (TYP.)
PROPOSED ¾" TH. PLATE WASHER (2" O.D. 1.25" I.D.)(A572-50), T & B.
PROPOSED 2"XXS (2.375" O.D. X 0.436) X 9" LONG PIPE A500-GR.C (42 KSI)
PROPOSED BASE PLATE EXTENSION (A572-50). MATCH PROPOSED BASE PLATE THICKNESS WITH EXISTING PLATE THICKNESS. SEE SHEET S-2 FOR DETAILS.
EXISTING GRADE
GROUT BASE PLATE
PROPOSED 1½" x 22'-0" (+2", -0") DRILL HOLE IN EXISTING FOUNDATION (30"ø B.C.). HOLES IN CONCRETE AND PLATE EXTENSION MUST ALIGN. SECURE ANCHOR UTILIZING HILTI HIT RE500 EPOXY ADHESIVE, FOLLOW MFG'S RECOMMENDATIONS DURING INSTALLATION.
Double base plates exist at bottom plate 1" thick, top plate 1-1/4" thick
As per EOR, see attached
1.75" as per the EOR approval attached to this document.
PROPOSED PL 1¼" Th. (A572-50)(TYP.)
PROPOSED 2"XXS (2.375" O.D. X 0.436) X 9" LONG PIPE A500-GR.C (42 KSI)
¾ CHAMFER
ELEVATION VIEW
PLAN VIEW
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SECTION
SCALE: 1½" = 1'-0"
SCALE IN FEET
PIECEMARK#: PL-1
SCALE: 1½" = 1'-0"
SCALE IN FEET
PLANS PREPARED FOR:
T-Mobile TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335
PROJECT INFORMATION:
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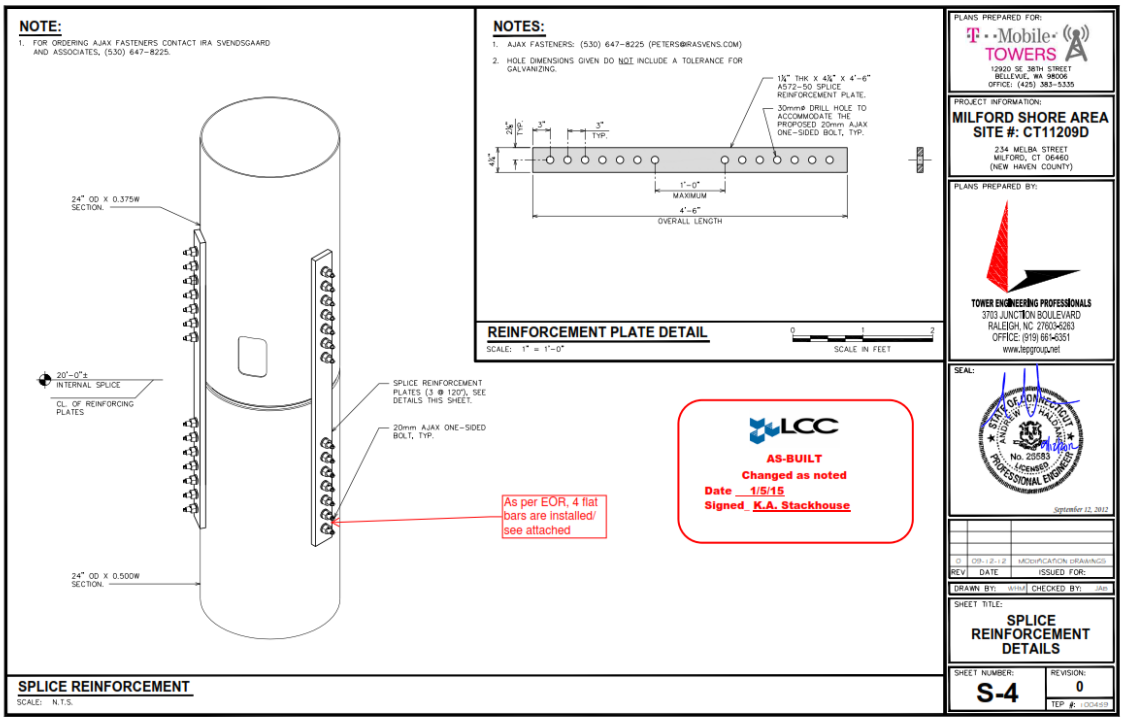
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
STATE OF CONNECTICUT
WILLIAM H. MARTIN
0029484
LICENSED
PROFESSIONAL ENGINEER
March 6, 2014
REV DATE ISSUED FOR:
DRAWN BY: CHECKED BY:
SHEET TITLE:
ANCHOR BOLT REINFORCEMENT DETAILS
SHEET NUMBER: S-3
REVISION: 1
TEP #:


NOTE:
1. FOR ORDERING AJAX FASTENERS CONTACT IRA SVENDSGAARD AND ASSOCIATES, (530) 647-8225.
NOTES:
1. AJAX FASTENERS: (530) 647-8225 (PETERS@IRASVENS.COM)
2. HOLE DIMENSIONS GIVEN DO NOT INCLUDE A TOLERANCE FOR GALVANIZING.
1¼" THK X 4⅜" X 4'-6" A572-50 SPLICE REINFORCEMENT PLATE.
30mmø DRILL HOLE TO ACCOMMODATE THE PROPOSED 20mm AJAX ONE-SIDED BOLT, TYP.
3" TYP.
1'-0" MAXIMUM
4'-6" OVERALL LENGTH
REINFORCEMENT PLATE DETAIL
SCALE: 1" = 1'-0"
SCALE IN FEET
24" OD X 0.375W SECTION.
20'-0"± INTERNAL SPLICE
CL. OF REINFORCING PLATES
SPLICE REINFORCEMENT PLATES (3 @ 120°), SEE DETAILS THIS SHEET.
20mm AJAX ONE-SIDED BOLT, TYP.
24" OD X 0.500W SECTION.
As per EOR, 4 flat bars are installed/ see attached
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SPLICE REINFORCEMENT
SCALE: N.T.S.
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
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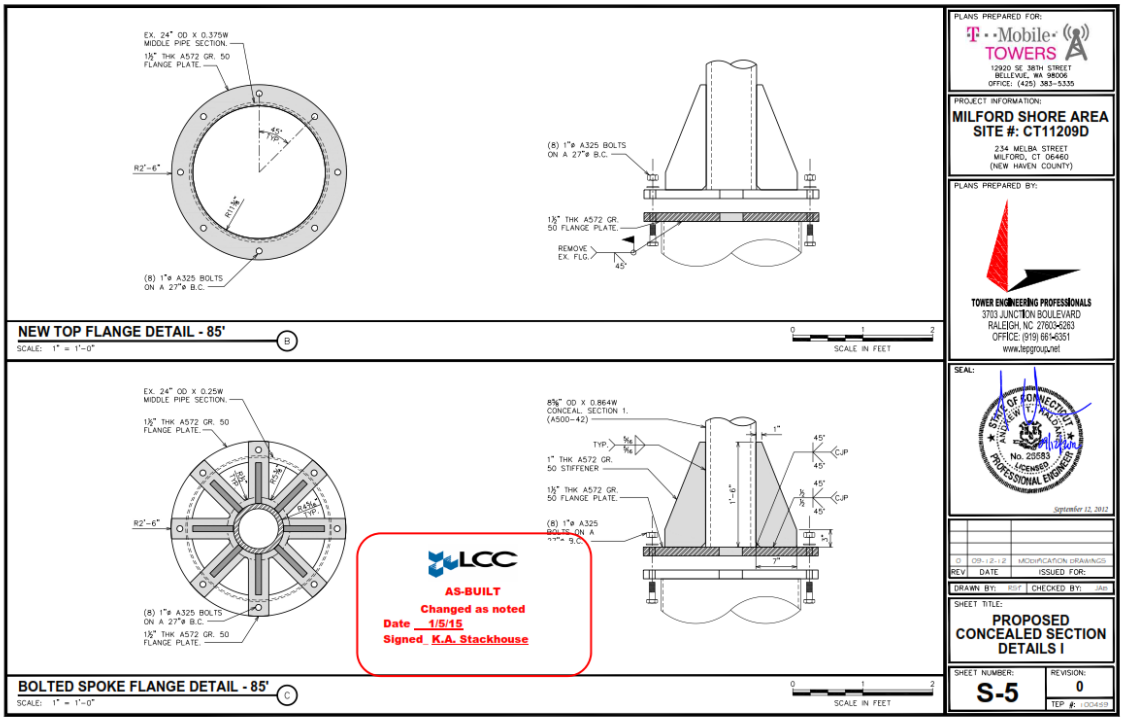
PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
STATE OF CONNECTICUT
No. 20583
LICENSED PROFESSIONAL ENGINEER
September 12, 2012
REV DATE ISSUED FOR:
0 09-12-12 MODIFICATION DRAWINGS
DRAWN BY: CHECKED BY:
SHEET TITLE:
SPLICE REINFORCEMENT DETAILS
SHEET NUMBER: S-4
REVISION: 0
TEP #:


EX. 24" OD X 0.375W MIDDLE PIPE SECTION.
1½" THK A572 GR. 50 FLANGE PLATE.
45° TYP.
R2'-6"
R11¼"
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
1½" THK A572 GR. 50 FLANGE PLATE.
REMOVE EX. FLG.
45°
NEW TOP FLANGE DETAIL - 85'
SCALE: 1" = 1'-0"
B
SCALE IN FEET
EX. 24" OD X 0.25W MIDDLE PIPE SECTION.
1½" THK A572 GR. 50 FLANGE PLATE.
R2'-6"
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
1½" THK A572 GR. 50 FLANGE PLATE.
8⅝" OD X 0.864W CONCEAL. SECTION 1. (A500-42)
TYP.
1" THK A572 GR. 50 STIFFENER
1½" THK A572 GR. 50 FLANGE PLATE.
(8) 1"ø A325 BOLTS ON A
1'-6"
45°
CJP
7"
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
BOLTED SPOKE FLANGE DETAIL - 85'
SCALE: 1" = 1'-0"
C
SCALE IN FEET
PLANS PREPARED FOR:
T-Mobile TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335
PROJECT INFORMATION:
MILFORD SHORE AREA
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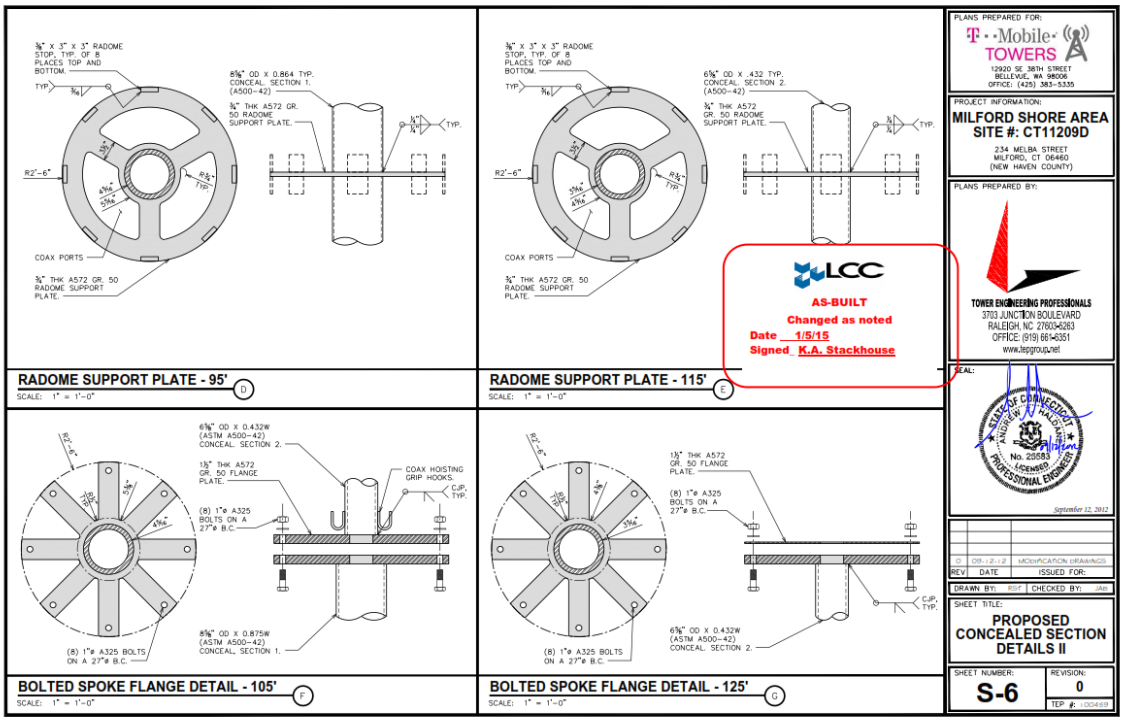
234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)
PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
STATE OF CONNECTICUT
No. 20583
LICENSED PROFESSIONAL ENGINEER
September 12, 2012
REV DATE ISSUED FOR:
0 09-12-12 MODIFICATION DRAWINGS
DRAWN BY: CHECKED BY:
SHEET TITLE:
PROPOSED CONCEALED SECTION DETAILS I
SHEET NUMBER: S-5
REVISION: 0
TEP #:


¾" X 3" X 3" RADOME STOP, TYP. OF 8 PLACES TOP AND BOTTOM.
8⅝" OD X 0.864 TYP. CONCEAL. SECTION 1. (A500-42)
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
TYP.
R2'-6"
COAX PORTS
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
RADOME SUPPORT PLATE - 95'
SCALE: 1" = 1'-0"
D
¾" X 3" X 3" RADOME STOP, TYP. OF 8 PLACES TOP AND BOTTOM.
6⅝" OD X .432 TYP. CONCEAL. SECTION 2. (A500-42)
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
TYP.
R2'-6"
COAX PORTS
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
RADOME SUPPORT PLATE - 115'
SCALE: 1" = 1'-0"
E
6⅝" OD X 0.432W (ASTM A500-42) CONCEAL. SECTION 2.
1½" THK A572 GR. 50 FLANGE PLATE.
COAX HOISTING GRIP HOOKS.
CJP, TYP.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
8⅝" OD X 0.875W (ASTM A500-42) CONCEAL. SECTION 1.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
BOLTED SPOKE FLANGE DETAIL - 105'
SCALE: 1" = 1'-0"
F
1½" THK A572 GR. 50 FLANGE PLATE.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
CJP, TYP.
6⅝" OD X 0.432W (ASTM A500-42) CONCEAL. SECTION 2.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
BOLTED SPOKE FLANGE DETAIL - 125'
SCALE: 1" = 1'-0"
G
PLANS PREPARED FOR:
T-Mobile TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335
PROJECT INFORMATION:
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234 MELBA STREET
MILFORD, CT 06460
(NEW HAVEN COUNTY)
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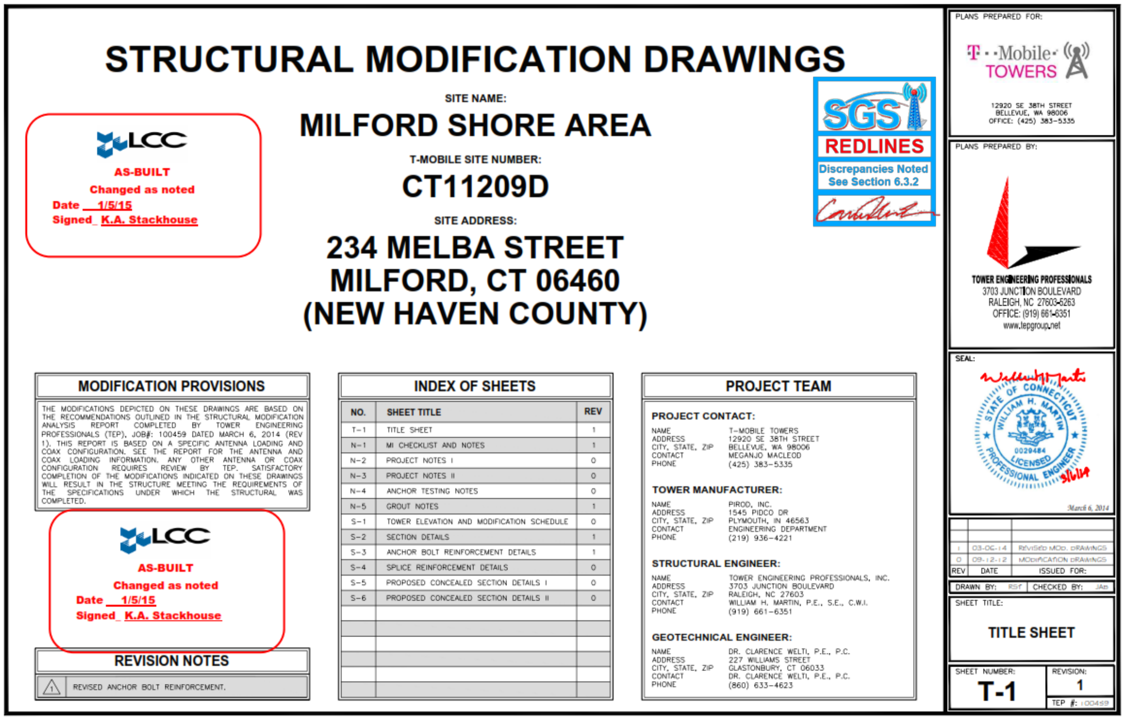
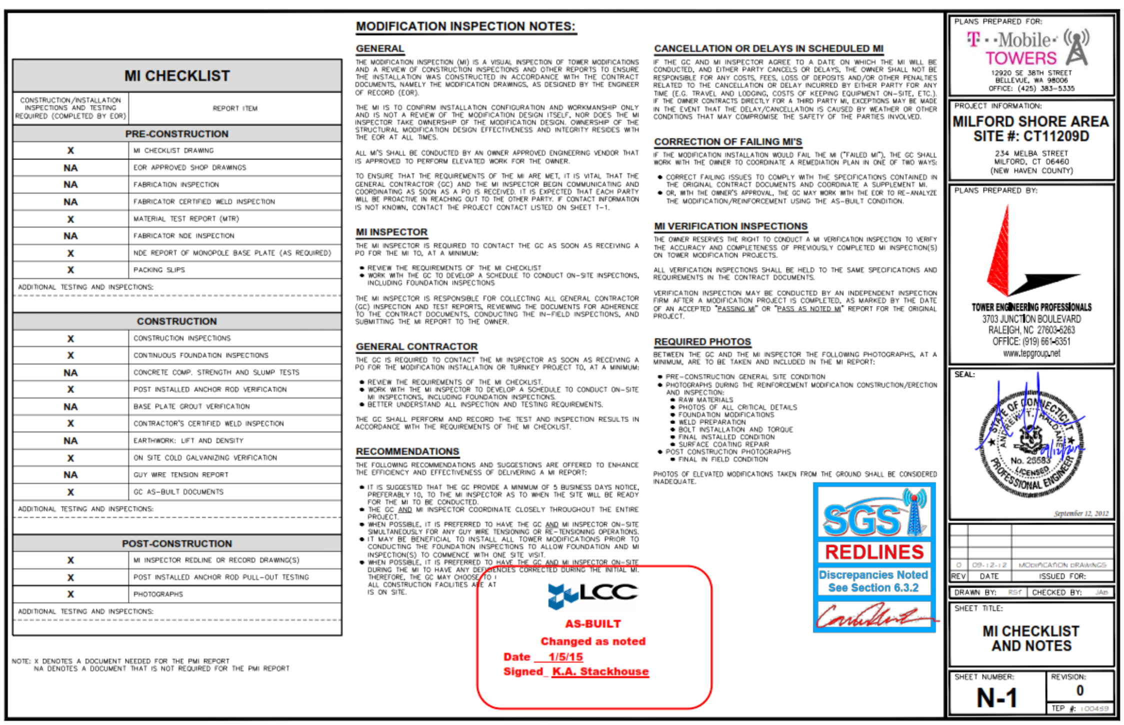
RALEIGH, NC 27603-6263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
STATE OF CONNECTICUT
No. 29583
LICENSED
PROFESSIONAL ENGINEER
September 12, 2012
REV
DATE
ISSUED FOR:
DRAWN BY:
CHECKED BY:
SHEET TITLE:
PROPOSED CONCEALED SECTION DETAILS II
SHEET NUMBER:
S-6
REVISION:
0
TEP #:

POST-CONSTRUCTION

6.3.1 MI INSPECTOR REDLINE OR RECORD DRAWING(S)





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 PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE 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 AMMENDMENTS.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES 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 IT'S 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 ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE 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.

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

SGS
REDLINES
Discrepancies Noted
See Section 6.3.2

PLANS PREPARED FOR:
T-Mobile TOWERS
12920 SE 38TH STREET
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:
TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:
STATE OF CONNECTICUT
ANDREW J. ALDANE
No. 25583
LICENSED
PROFESSIONAL ENGINEER
September 12, 2012

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

DRAWN BY: RST | CHECKED BY: JAB

SHEET TITLE: PROJECT NOTES I

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

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, 9TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: STRUCTURAL STEEL:
   - ANGLE: ASTM A36
   - PIPE/TUBE: ASTM A500-50
   - PLATE: ASTM A36 (SELF SUPPORTING AND GUYED TOWERS)
   - PLATE: ASTM A572-50 (MONOPOLE)

   A. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
   B. ALL U-BOLTS, ASTM A193 GRADE B7
   C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
   D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. 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.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. 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.
6. 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.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. 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.
10. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

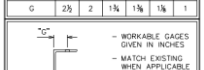
WELDING NOTES:

1. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2008 "STRUCTURAL WELDING CODE-STEEL".
2. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
3. 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.
4. 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.
5. DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW 0°F. 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.
6. DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
7. FOR ALL WELDING, USE E70XX ELECTRODES.
8. AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OR GRINDING SHALL RECEIVE A COLD-GALVANIZED COATING. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE ... SS OF 3 MILS

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

WORKABLE GAGES

LEG	4	3½	3	2½	2	1¾
G	2½	2	1¾	1⅜	1⅛	1



- WORKABLE GAGES GIVEN IN INCHES
- MATCH EXISTING WHEN APPLICABLE

BOLT TIGHTENING PROCEDURE:

1. TIGHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CH...

BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.

½"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
⅝"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
¾"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
⅞"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+⅓ TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING EIGHT DIA.

½"	BOLTS 2.25 TO 4.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
⅝"	BOLTS 2.75 TO 5.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
¾"	BOLTS 3.25 TO 6.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
⅞"	BOLTS 3.75 TO 7.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+½ TURN BEYOND SNUG TIGHT

2. 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:
3. 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.

4. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

SGS
REDLINES
Discrepancies Noted
See Section 6.3.2

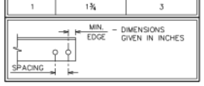
NOMINAL HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
½	9/16	9/16 X 11/16
⅝	11/16	11/16 X ⅞
¾	13/16	13/16 X 1
⅞	15/16	15/16 X 1⅛
1	1 1/16	1 1/16 X 1 5/16

- DIMENSIONS GIVEN IN INCHES

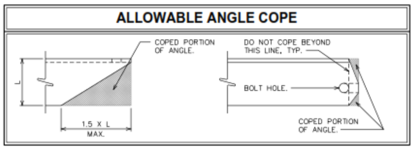
BOLT EDGE AND SPACING

BOLT DIAMETER	MIN. EDGE	SPACING
½	⅞	1½
⅝	1⅛	1⅞
¾	1¼	2¼
⅞	1½	2⅝
1	1¾	3



- DIMENSIONS GIVEN IN INCHES

ALLOWABLE ANGLE COPE



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.tepgroup.net

SEAL:
STATE OF CONNECTICUT
ANDREW J. ALDANE
No. 25583
LICENSED
PROFESSIONAL ENGINEER
September 12, 2012

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

DRAWN BY: RST | CHECKED BY: JAB

SHEET TITLE: PROJECT NOTES II

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

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 PROVED 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.

REMIDIAL 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

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

SGS
REDLINES
Discrepancies Noted
See Section 6.3.2

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
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www.tepgroup.net

SEAL:
STATE OF CONNECTICUT — KEVIN A. STACKHOUSE — No. 29583 — LICENSED PROFESSIONAL ENGINEER
September 12, 2012

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

DRAWN BY: RSF | CHECKED BY: JAH

SHEET TITLE: **ANCHOR TESTING NOTES**

SHEET NUMBER: **N-4** | REVISION: **0**
TEP #: 100469

GENERAL NOTES:

1. IF EXISTING GROUT IS PRESENT, REFER TO CROWN DOCUMENT ENG-PRC-10012 (BASE PLATE GROUT REPAIR) FOR REPAIR PROCEDURE.
2. PROPRIETARY PRE-BLENDED NON-SHRINK GROUT, MEETING ASTM C1107 OR CORPS OF ENGINEERS SPECIFICATION CRD-C621 SHALL BE USED FOR GROUTING MACHINE BASES AND COLUMN BASEPLATES.
3. GROUT SHALL BE TESTED FOR SPECIFICATION COMPLIANCE PER ASTM C1107 AND ALL APPLICAPABLE STANDARDS REFERENCED IN ASTM C1107.
4. CONSISTENCY TEST, SUCH AS FLOW-CONE TEST (ASTM C939) OR FLOW TABLE TEST (ASTM C230 AND C827) CAN GIVE AN INDICATION OF THE WORKABILITY, PLACEABILITY, AND WORKING LIFE AND CAN BE USE AS A QUALITY CONTROL MEASURE. TOO SHORT A WORKING TIME (RAPID STIFFENING) CAN RESULT IN INEFFECTIVE PLACEMENT AND CONSOLIDATION, VOIDS, LOSS OF CONTACT AREA WITH GROUT ELEMENT, COLD JOINTS, BLOCKAGE, AND OTHER PROBLEMS IF GROUTING IS NOT PERFORMED IN A TIMELY MANNER. EXCESSIVE WORKING TIME CAN ALLOW BLEEDING AND WATER POCKETS. WORKING TIME SHOULD BE OF A SUFFICIENT PERIOD TO ALLOW FOR TRANSPORT, HANDLING, AND PLACING OF GROUT AT A COMFORTABLE PACE.
5. RE-TEMPERING (ADDING WATER AND REMIXING THE GROUT TO REGAIN ORIGINAL CONSISTENCY) IS NOT PERMITTED.

PREPARATION FOR GROUT:

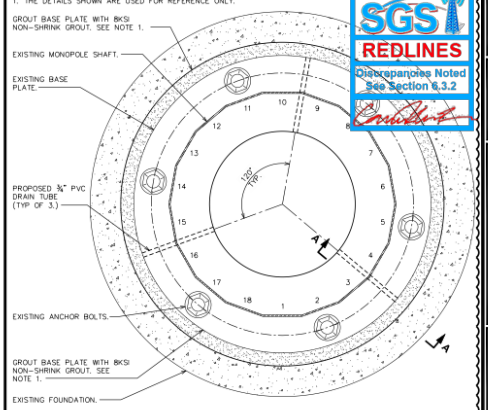
1. CONCRETE SURFACE TO BE GROUTED MUST BE CLEAN AND FREE OF CURING COMPOUND, OIL, COATING, LAITANCE, AND DIRT. THE SURFACE SHOULD BE ROUGHENED TO DEPTH OF ¼ IN. BY SANDBLASTING, WATER BLASTING, LIGHTWEIGHT CHIPPING, OR OTHER METHODS TO PROVIDE A BETTER MECHANICAL BOND (SEE ASTM D4258 AND D4259).
2. CONCRETE SURFACE SHOULD BE MOISTENED FOR ABOUT 24 HOURS BEFORE GROUTING TO PREVENT MOISTURE LOSS FROM GROUT TO THE CONCRETE; HOWEVER, NO FREE-STANDING WATER SHOULD BE PRESENT WHILE GROUTING.
3. A FORM MAY BE BUILT AROUND THE BASEPLATE, OR SAND DIKES MAY BE USED TO CONFINE THE GROUT. THE TOP OF THE FORM SHOULD EXTEND ABOVE THE BOTTOM OF THE BASEPLATE.

MIXING AND PLACING GROUT:

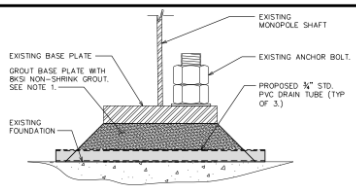
1. AFTER MIXING, GROUT MUST BE PLACED WITHIN WORKING TIME. GROUT MUST BE PLACED IN A CONTINUES MONOLITHIC MANNER TO AVOID COLD JOINTS AND TO COMPLETELY FILL THE GROUT SPACE AND PRODUCE INTIMATE CONTACT WITH THE GROUTED ITEM. THE GROUT SHOULD BE PLACED IN ONE DIRECTION FROM ONE SIDE TO THE OTHER TO MONITOR GROUT MOVEMENT PROPERLY AND AVOID AIR ENTRAPMENT.
2. STIFF-PLASTIC, PLASTIC, AND FLOWABLE GROUT MAY BE VIBRATED INTO PLACE. VIBRATION OF FLUID MIXES SHOULD BE AVOIDED AS VIBRATION MAY CAUSE BLEEDING AND AIR ENTRAPMENT.
3. AFTER PLACEMENT BUT BEFORE FINAL SET, THE FORM CAN BE REMOVED, THE GROUT CUT BACK AT A 45 DEGREE ANGLE DOWN FROM THE BASEPLATE TO THE CONCRETE BASE, FINISHED WITH A WOOD FLOAT OR BRUSH, AND CURED AT 40 TO 90 DEGREE FAHRENHEIT WITH WET BURLAP OR OTHER METHOD OF WET CURING OR AS SPECIFIED BY THE MANUFACTURE BUT NOT LESS THAN 7 DAYS OF WET CURING. TO AVOID EDGE CRACKING AND SPALLING, A 45 DEGREE GROUT FACE IS RECOMMENDED. INADEQUATE CURING, OR EXCESSIVE FINISHING CAN CAUSE HAIRLINE CRACKS.
4. ONCE COMPLETED, GROUT SHALL BE INSPECTED AND CLASSIFIED PER CROWN DOCUMENT ENG-BUL-10122 (TOWER BASE PLATE GROUT INSPECTION AND CLASSIFICATION).

LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse

NOTE:
1. THE DETAILS SHOWN ARE USED FOR REFERENCE ONLY.



PLAN VIEW AT BASE
SCALE: N.T.S.



SECTION A-A
SCALE: N.T.S.

SGS
REDLINES
Discrepancies Noted
See Section 6.3.2

PLANS PREPARED FOR:
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OFFICE: (425) 383-5335

PROJECT INFORMATION:
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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
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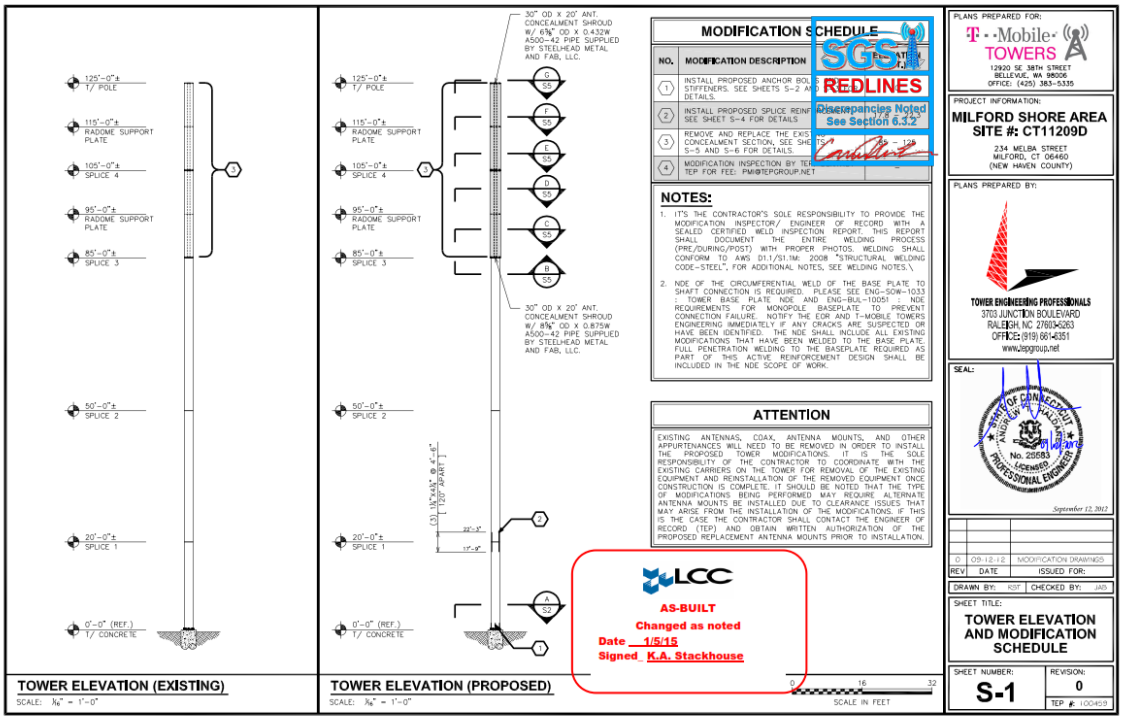
SEAL:
STATE OF CONNECTICUT — WILLIAM H. MARTIN — 0029484 — LICENSED PROFESSIONAL ENGINEER
March 6, 2014

REV	DATE	ISSUED FOR:
1	03-06-14	REVISED MOD. DRAWINGS
0	09-12-12	MODIFICATION DRAWINGS

DRAWN BY: RSF | CHECKED BY: RJB

SHEET TITLE: **GROUT NOTES**

SHEET NUMBER: **N-5** | REVISION: **1**
TEP #: 100469


MODIFICATION SCHEDULE
NO. MODIFICATION DESCRIPTION
NOTES:
ATTENTION
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SGS
REDLINES
Discrepancies Noted
See Section 6.3.2
T-Mobile TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006
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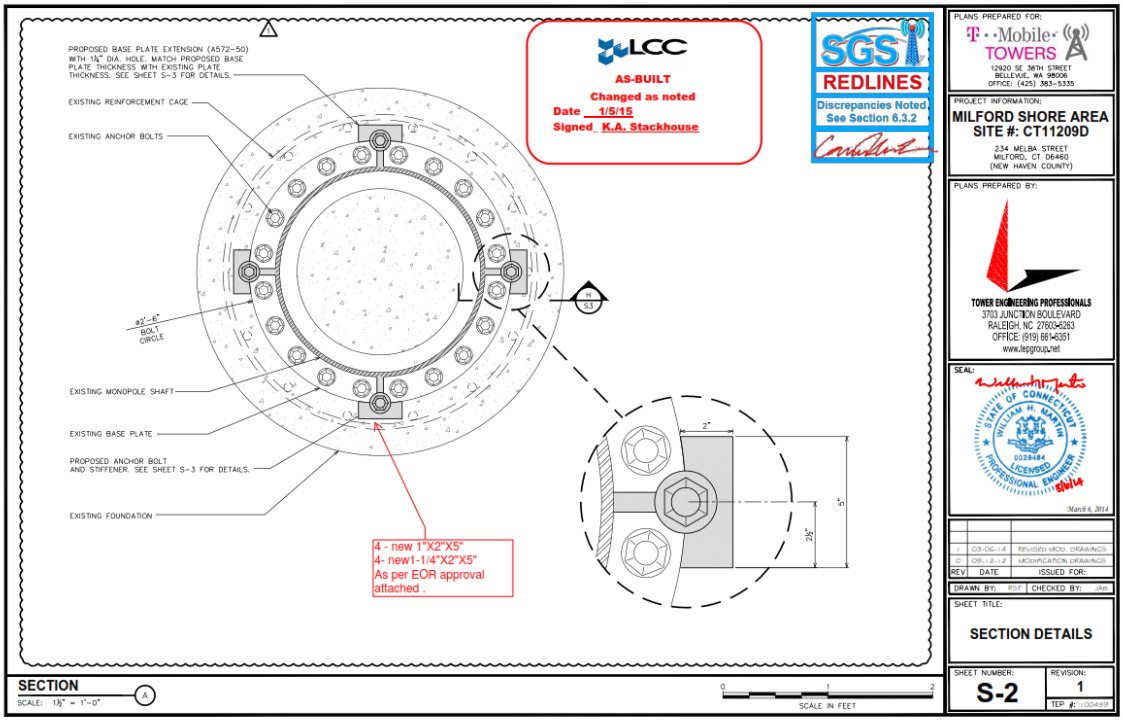
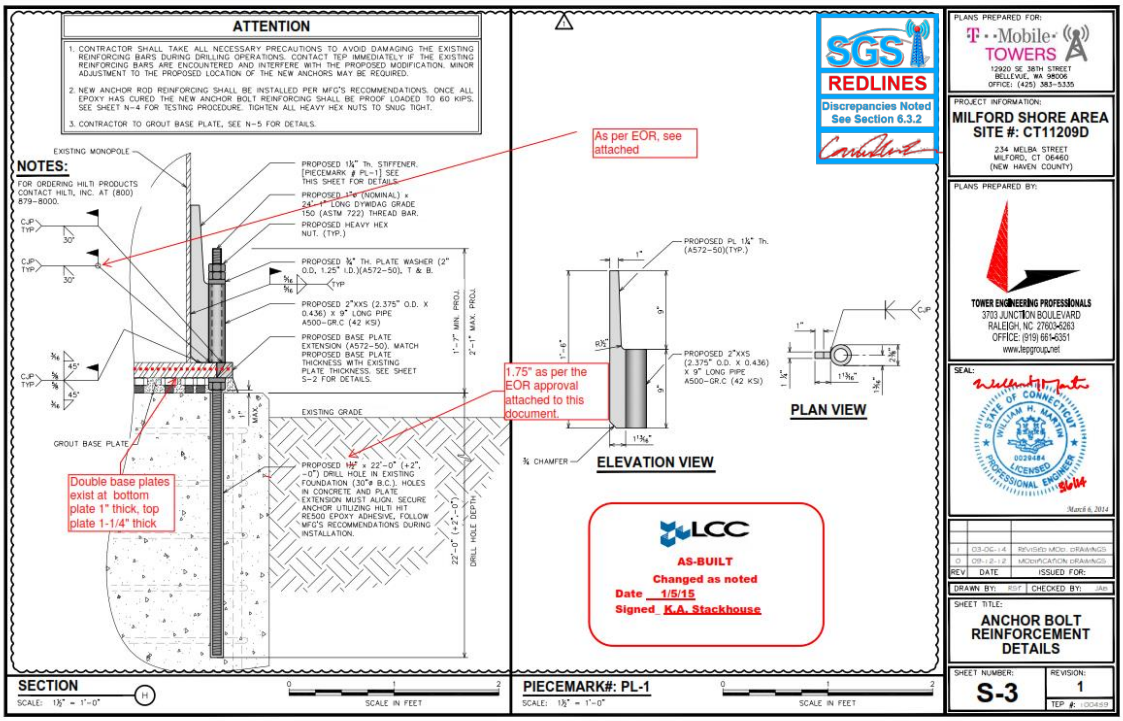
PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
3703 JUNCTION BOULEVARD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
September 12, 2012
SHEET TITLE:
TOWER ELEVATION AND MODIFICATION SCHEDULE
SHEET NUMBER:
S-1
REVISION:
0
TEP #: 100459
TOWER ELEVATION (EXISTING)
TOWER ELEVATION (PROPOSED)
SCALE IN FEET


PROPOSED BASE PLATE EXTENSION (A572-50) WITH 1¾" DIA. HOLE. MATCH PROPOSED BASE PLATE THICKNESS WITH EXISTING PLATE THICKNESS. SEE SHEET S-3 FOR DETAILS.
EXISTING REINFORCEMENT CAGE
EXISTING ANCHOR BOLTS
EXISTING MONOPOLE SHAFT
EXISTING BASE PLATE
PROPOSED ANCHOR BOLT AND STIFFENER. SEE SHEET S-3 FOR DETAILS.
EXISTING FOUNDATION
4 - new 1"X2"X5"
4- new1-1/4"X2"X5"
As per EOR approval attached .
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SGS
REDLINES
Discrepancies Noted
See Section 6.3.2
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.tepgroup.net
SEAL:
March 6, 2014
SHEET TITLE:
SECTION DETAILS
SHEET NUMBER:
S-2
REVISION:
1
TEP #: 100459
SECTION
SCALE IN FEET


ATTENTION
1. 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.
2. 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 60 KIPS. SEE SHEET N-4 FOR TESTING PROCEDURE. TIGHTEN ALL HEAVY HEX NUTS TO SNUG TIGHT.
3. CONTRACTOR TO GROUT BASE PLATE, SEE N-5 FOR DETAILS.
NOTES:
FOR ORDERING HILTI PRODUCTS CONTACT HILTI, INC. AT (800) 879-8000.
EXISTING MONOPOLE
PROPOSED 1¼" Th. STIFFENER. [PIECEMARK # PL-1] SEE THIS SHEET FOR DETAILS.
PROPOSED 1" (NOMINAL) x 24'-4" LONG DYWIDAG GRADE 150 (ASTM 722) THREAD BAR.
PROPOSED HEAVY HEX NUT. (TYP.)
PROPOSED ¾" Th. PLATE WASHER (2" O.D. 1.25" I.D.)(A572-50), T & B.
PROPOSED 2"XXS (2.375" O.D. X 0.436) X 9" LONG PIPE A500-GR.C (42 KSI)
PROPOSED BASE PLATE EXTENSION (A572-50). MATCH PROPOSED BASE PLATE THICKNESS WITH EXISTING PLATE THICKNESS. SEE SHEET S-2 FOR DETAILS.
EXISTING GRADE
GROUT BASE PLATE
PROPOSED 1½" x 22'-0" (+2", -0") DRILL HOLE IN EXISTING FOUNDATION (30"ø B.C.). HOLES IN CONCRETE AND PLATE EXTENSION MUST ALIGN. SECURE ANCHOR UTILIZING HILTI HIT RE500 EPOXY ADHESIVE, FOLLOW MFG'S RECOMMENDATIONS DURING INSTALLATION.
Double base plates exist at bottom plate 1" thick, top plate 1-1/4" thick
1'-3" MIN. PROJ.
2'-1" MAX. PROJ.
22'-0" (+2", -0") DRILL HOLE DEPTH
SECTION
SCALE: 1½" = 1'-0"
SCALE IN FEET
As per EOR, see attached
1.75" as per the EOR approval attached to this document.
PROPOSED PL 1¼" Th. (A572-50)(TYP.)
PROPOSED 2"XXS (2.375" O.D. X 0.436) X 9" LONG PIPE A500-GR.C (42 KSI)
¾ CHAMFER
ELEVATION VIEW
PLAN VIEW
PIECEMARK#: PL-1
SCALE: 1½" = 1'-0"
SCALE IN FEET
SGS
REDLINES
Discrepancies Noted See Section 6.3.2
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
PLANS PREPARED FOR:
T-Mobile TOWERS
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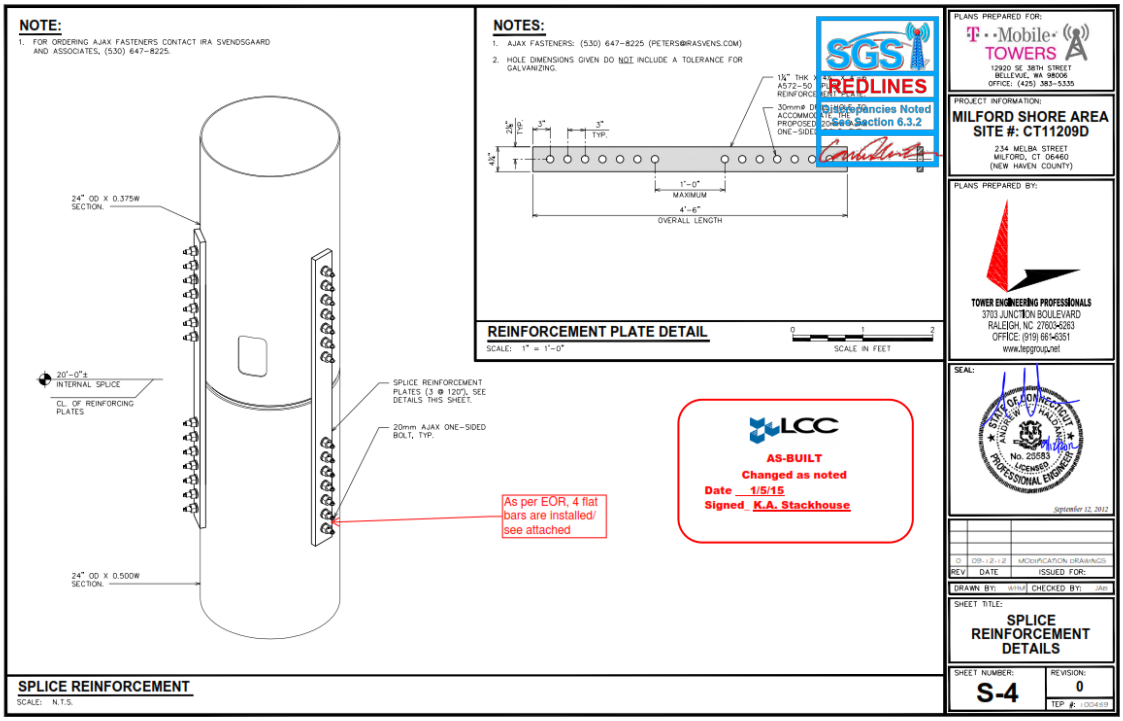
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net
SEAL:
WILLIAM H. MARTIN
STATE OF CONNECTICUT
0029484
LICENSED
PROFESSIONAL ENGINEER
March 6, 2014
REV DATE ISSUED FOR:
1 03-DEC-14 REVISED MOD. DRAWINGS
0 09-DEC-12 MODIFICATION DRAWINGS
DRAWN BY: RSF CHECKED BY: JAH
SHEET TITLE:
ANCHOR BOLT REINFORCEMENT DETAILS
SHEET NUMBER: S-3
REVISION: 1
TEP #: 1004489


NOTE:
1. FOR ORDERING AJAX FASTENERS CONTACT IRA SVENDSGAARD AND ASSOCIATES, (530) 647-8225.
24" OD X 0.375W SECTION.
20'-0"± INTERNAL SPLICE
CL. OF REINFORCING PLATES
SPLICE REINFORCEMENT PLATES (3 @ 120°), SEE DETAILS THIS SHEET.
20mm AJAX ONE-SIDED BOLT, TYP.
As per EOR, 4 flat bars are installed/ see attached
24" OD X 0.500W SECTION.
SPLICE REINFORCEMENT
SCALE: N.T.S.
NOTES:
1. AJAX FASTENERS: (530) 647-8225 (PETERS@IRASVENS.COM)
2. HOLE DIMENSIONS GIVEN DO NOT INCLUDE A TOLERANCE FOR GALVANIZING.
1¼" THK
A572-50
3" TYP.
1'-0" MAXIMUM
4'-6" OVERALL LENGTH
REINFORCEMENT PLATE DETAIL
SCALE: 1" = 1'-0"
SCALE IN FEET
SGS
REDLINES
Discrepancies Noted See Section 6.3.2
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
PLANS PREPARED FOR:
T-Mobile TOWERS
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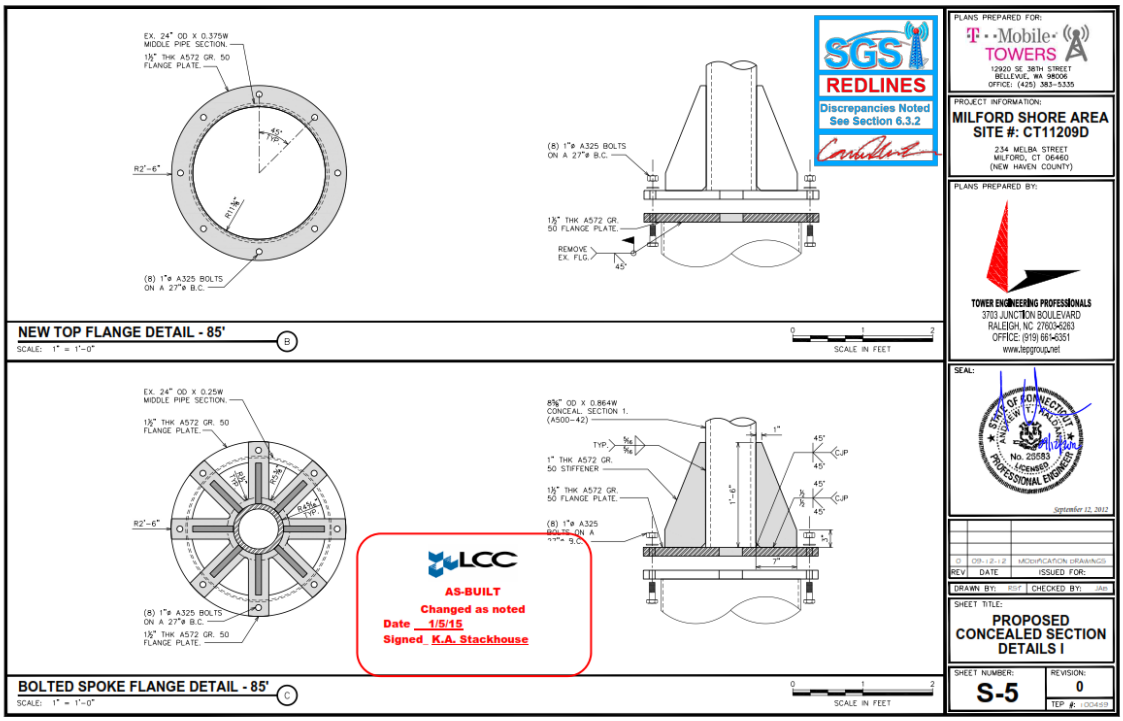
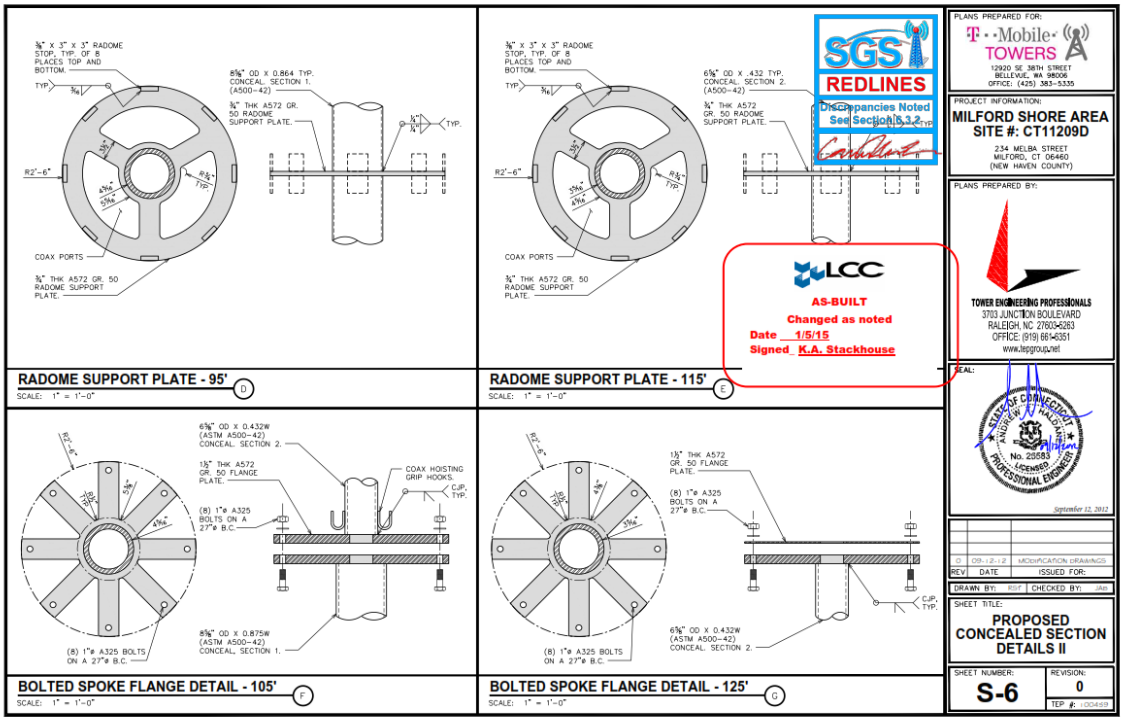
SEAL:
STATE OF CONNECTICUT
No. 20583
LICENSED
PROFESSIONAL ENGINEER
September 12, 2012
REV DATE ISSUED FOR:
0 09-12-12 MODIFICATION DRAWINGS
DRAWN BY: CHECKED BY:
SHEET TITLE:
SPLICE REINFORCEMENT DETAILS
SHEET NUMBER: S-4
REVISION: 0
TEP #: 1004489


EX. 24" OD X 0.375W MIDDLE PIPE SECTION.
1½" THK A572 GR. 50 FLANGE PLATE.
45° TYP.
R2'-6"
R11¼"
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
1½" THK A572 GR. 50 FLANGE PLATE.
REMOVE EX. FLG.
45°
NEW TOP FLANGE DETAIL - 85'
SCALE: 1" = 1'-0"
B
SCALE IN FEET
EX. 24" OD X 0.25W MIDDLE PIPE SECTION.
1½" THK A572 GR. 50 FLANGE PLATE.
R2'-6"
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
1½" THK A572 GR. 50 FLANGE PLATE.
8⅝" OD X 0.864W CONCEAL. SECTION 1. (A500-42)
TYP.
1" THK A572 GR. 50 STIFFENER
1½" THK A572 GR. 50 FLANGE PLATE.
(8) 1"ø A325
1'-6"
45°
CJP
7"
BOLTED SPOKE FLANGE DETAIL - 85'
SCALE: 1" = 1'-0"
C
SCALE IN FEET
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SGS
REDLINES
Discrepancies Noted
See Section 6.3.2
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.tepgroup.net
SEAL:
STATE OF CONNECTICUT
No. 29583
LICENSED PROFESSIONAL ENGINEER
September 12, 2012
REV DATE ISSUED FOR:
0 09-12-12 MODIFICATION DRAWINGS
DRAWN BY: RSF CHECKED BY: JAH
SHEET TITLE:
PROPOSED CONCEALED SECTION DETAILS I
SHEET NUMBER:
S-5
REVISION:
0
TEP #: 100469


⅜" X 3" X 3" RADOME STOP, TYP. OF 8 PLACES TOP AND BOTTOM.
TYP.
8⅝" OD X 0.864 TYP. CONCEAL. SECTION 1. (A500-42)
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
TYP.
R2'-6"
COAX PORTS
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
RADOME SUPPORT PLATE - 95'
SCALE: 1" = 1'-0"
D
6⅝" OD X .432 TYP. CONCEAL. SECTION 2. (A500-42)
¾" THK A572 GR. 50 RADOME SUPPORT PLATE.
RADOME SUPPORT PLATE - 115'
SCALE: 1" = 1'-0"
E
6⅝" OD X 0.432W (ASTM A500-42) CONCEAL. SECTION 2.
1½" THK A572 GR. 50 FLANGE PLATE.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
COAX HOISTING GRIP HOOKS.
CJP, TYP.
8⅝" OD X 0.875W (ASTM A500-42) CONCEAL. SECTION 1.
BOLTED SPOKE FLANGE DETAIL - 105'
SCALE: 1" = 1'-0"
F
1½" THK A572 GR. 50 FLANGE PLATE.
(8) 1"ø A325 BOLTS ON A 27"ø B.C.
6⅝" OD X 0.432W (ASTM A500-42) CONCEAL. SECTION 2.
CJP, TYP.
BOLTED SPOKE FLANGE DETAIL - 125'
SCALE: 1" = 1'-0"
G
LCC
AS-BUILT
Changed as noted
Date 1/5/15
Signed K.A. Stackhouse
SGS
REDLINES
Discrepancies Noted
See Section 6.3.2
PLANS PREPARED FOR:
T-Mobile TOWERS
12920 SE 38TH STREET
BELLEVUE, WA 98006
OFFICE: (425) 383-5335
PROJECT INFORMATION:
MILFORD SHORE AREA
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3703 JUNCTION BOULEVARD
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www.tepgroup.net
SEAL:
STATE OF CONNECTICUT
No. 29583
LICENSED PROFESSIONAL ENGINEER
September 12, 2012
REV DATE ISSUED FOR:
0 09-12-12 MODIFICATION DRAWINGS
DRAWN BY: RSF CHECKED BY: JAH
SHEET TITLE:
PROPOSED CONCEALED SECTION DETAILS II
SHEET NUMBER:
S-6
REVISION:
0
TEP #: 100469

6.3.2 ENGINEER OF RECORD EMAIL

From: Ryan Rimmele [mailto:rrimmele@tepgroup.net]
Sent: Tuesday, November 04, 2014 10:35 AM
To: Tuttle, Steve; Keith_ Stackhouse; Bruno, Jerry (Contractor); Donahue, James (Vendor)
Cc: Jorge Forsythe; D'Amico, Jason (Vendor); Rich Taschek; RJR
Subject: RE: Milford Shore Area - 825998 - Core drilling

Steve,

Yes that is correct. Only difference is that the anchor rods only need to go to 18'-6" (~6" short of the bottom of caisson).

The existing foundation will work with the new equipment installed, but the foundation mod is also acting as anchor bolts, so the mods will need to be installed prior to installing the equipment. If you want we can look into issuing a temporary loading letter, so that they can install earlier.

Thanks,
Ryan

Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351|Fax: (919) 661-6350

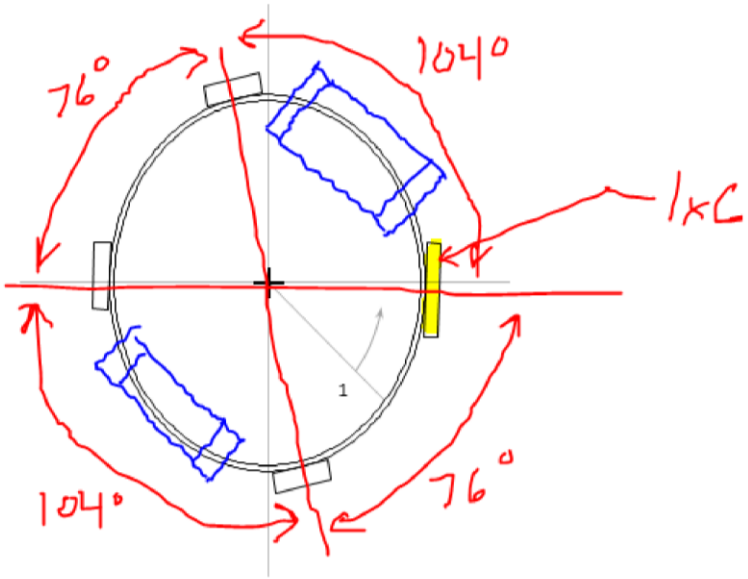
From: Ryan Rimmele
Sent: Thursday, December 04, 2014 3:53 PM
To: Keith_ Stackhouse
Cc: CMRP; lccmods; SGS PMI; Bruno, Jerry (Contractor); Donahue, James (Vendor); Jason D'Amico
Subject: RE: 825998 - Milford Shore Area - LCC Tower Mod Upgrade Forecast Request 11-05-14

Categories: Milford Shore Area - 825998 - 130739

Keith,

Adding a 4th 1"x6" plate works. The % capacity of the flange connection increases from 84% (3 symetric plates) to 86%.

Install the (3) 1.25x4.25 and (1) 1x6 plates as close to the port holes as you can. Based on the dimensions you gave (16" c-c), that comes out to 76/104/76/104 degree spacing. Let me know if you have any questions.



Thanks,
Ryan

Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351|Fax: (919) 661-6350

From: Keith_ Stackhouse [mailto:keith_stackhouse@lcc.com]
Sent: Thursday, December 04, 2014 2:58 PM

From: Tuttle, Steve [mailto:Steve.Tuttle@crowncastle.com]
Sent: Friday, February 20, 2015 10:21 AM
To: Bruno, Jerry (Contractor); McGee, John; Cameron McElreath
Cc: SGS_PMI; Donahue, James (Vendor); D'Amico, Jason (Vendor); Ryan Rimmele
Subject: RE: Milford SHore Area 825998 130549 Crown Approval

As long as under 100% (this is CT.) We are fine.

Thank you,
Steve T.

STEPHEN TUTTLE
Tower Structural Analyst
T: (585) 899-3445

CROWN CASTLE
8 Parkmeadow Drive, Pittsford NY 14534
CrownCastle.com

From: Bruno, Jerry (Contractor)
Sent: Friday, February 20, 2015 8:50 AM
To: McGee, John; Cameron McElreath
Cc: SGS_PMI; Donahue, James (Vendor); D'Amico, Jason (Vendor); Tuttle, Steve; Ryan Rimmele
Subject: RE: Milford SHore Area 825998 130549 Crown Approval

Cameron,

I am fine with this 2% reduction in capacity at the flange connection.

JB

Jerry Bruno
Project Manager Site Modifications – New England
T: (781) 970-0069 | M: (508) 902-7349

CROWN CASTLE
500 West Cummings Park, Suite 3600, Woburn, MA 01801
CrownCastle.com

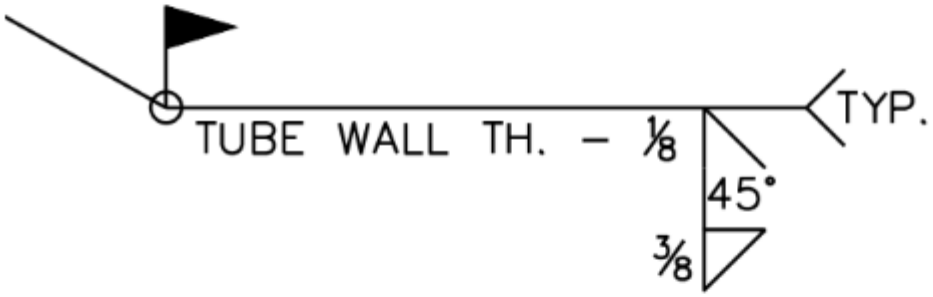
From: Ryan Rimmele
Sent: Saturday, December 06, 2014 10:19 AM
To: Keith_ Stackhouse
Cc: CMRP; lccmods; SGS PMI; Bruno, Jerry (Contractor); Donahue, James (Vendor); Jason D'Amico; Dan Reid
Subject: RE: 825998 - Milford Shore Area - LCC Tower Mod Upgrade Forecast Request 11-05-14

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Milford Shore Area - 825998 - 130739

Hi Keith,

Please use the following detail for the pipe weld. It's a PJP with a fillet cover.



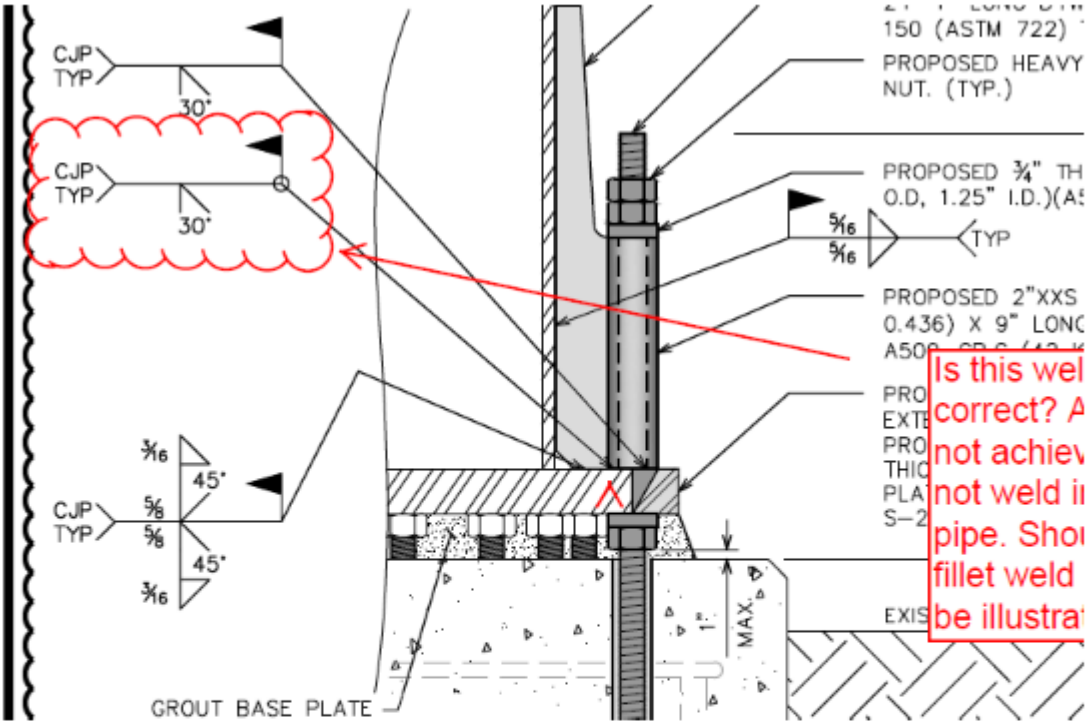
Thanks,
Ryan

Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351|Fax: (919) 661-6350

From: Keith_ Stackhouse [mailto:keith_stackhouse@lcc.com]
Sent: Friday, December 05, 2014 11:13 PM
To: Ryan Rimmele
Cc: CMRP; lccmods; SGS PMI; Bruno, Jerry (Contractor); Donahue, James (Vendor); Jason D'Amico; Dan Reid
Subject: RE: 825998 - Milford Shore Area - LCC Tower Mod Upgrade Forecast Request 11-05-14

Hello Ryan,

I could I get a little clarity for the weld symbols on page S-3 of the CD's, the symbol(CJP) I am referencing is addressing the 2"xx pipe to base plate connection; that particular type weld would be un-achievable. (see snippet)



\

Keith A. Stackhouse
Structural Construction Manager

LCC Construction Services
2500 Sylon Blvd.
Hainesport, NJ 08036

(Cell) 609-367-6107
keith_stackhouse@lcc.com

From: Adam Amortnont
Sent: Monday, March 10, 2014 4:33 PM
To: Klaus Horsch; Morales, Eva; Richard Moore; Stephen Teti
Cc: SM; Rich Taschek
Subject: RE: Milford Shore Area, T-Mobile site number CT11209D, TEP No. 100459

Klaus,

Since there are two plates we are requiring that separate extension plates be welded to the corresponding base plates. Based on the dimension you provided the upper plate will need to be 1" and the lower plate will need to be 1.25". These will need to be flush with the upper and lower surfaces of the existing plates to allow for proper fit-up of the washers and nuts.

As for the pipe, A106 Grade C is acceptable.

Thanks,
Adam

Adam M. Amortnont, P.E.
Division Manager|Tower Engineering Professionals, Inc. (www.tepgroup.net)
3703 Junction Boulevard|Raleigh, NC 27603-5263|Office: (919) 661-6351|Fax: (919) 661-6350

From: Klaus Horsch [mailto:klaus_horsch@LCC.com]
Sent: Friday, March 07, 2014 3:25 PM
To: Adam Amortnont; Morales, Eva; Richard Moore; Stephen Teti
Cc: SM; Rich Taschek
Subject: RE: Milford Shore Area, T-Mobile site number CT11209D, TEP No. 100459

Adam,

It looks as though there are (2) base flanges. We had a guy out at the tower today to measure the thicknesses and he reported back that the bottom flange was 1" while the second was 1-1/4" for an overall of 2-1/4". Are we matching the thickness of just the bottom flange?

Is it acceptable to use A106 B/C pipe which has a min yield of 42 ksi as a substitute for the A500 B?

Thanks,

Klaus Horsch, E.I.T.
856-810-1658 ext. 239

From: Adam Amortnont [mailto:aamortnont@tepgroup.net]
Sent: Thursday, January 30, 2014 5:01 PM
To: Klaus Horsch; 'Morales, Eva'; 'Stephen Teti'
Cc: SM; 'Richard Tascheck'
Subject: RE: Milford Shore Area, T-Mobile site number CT11209D, TEP No. 100459

Klaus,

As long as we have the space, this will likely work. Can you send us the specs for the Dywidag bar and accessories (nut) that you are proposing to use.

Thanks,
Adam

_ _ _ _ _ _ _ _

Adam M. Amortnont, P.E.
Division Manager|Tower Engineering Professionals, Inc. (www.tepgroup.net)
3703 Junction Boulevard|Raleigh, NC 27603-5263|Office: (919) 661-6351|Fax: (919) 661-6350

From: Klaus Horsch [mailto:khorsch@telecomcontracting.com]
Sent: Thursday, January 30, 2014 12:55 PM
To: 'Morales, Eva'; 'Stephen Teti'; Adam Amortnont
Cc: SM; 'Richard Tascheck'
Subject: RE: Milford Shore Area, T-Mobile site number CT11209D, TEP No. 100459

Adam,

Dywidag bars are readily available from stock . Because of time constraints, we will use them.

The Dywidag nut is 3-3/8" in length. The nut will be fitted beneath the base plate.

Will this work in your redesign?

Thanks,

Klaus Horsch, E.I.T.
856-810-1658 ext. 239

Hi Keith,

Since it is thicker than required that change is acceptable. Make sure it is recorded in the as-builts so it can get captured on future analyses.

Thanks,
Ryan

Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351 Ext. 2402|Fax: (919) 661-6350

From: Keith_ Stackhouse [mailto:keith_stackhouse@lcc.com]
Sent: Friday, January 16, 2015 4:34 PM
To: Ryan Rimmele
Cc: Bruno, Jerry (Contractor); SGS PMI; lccmods
Subject: RE: Milford Shore Area - 825998 - 130739 - EOR review

Hello Ryan,

One other came up, it appears that Stealth increase the thickness of one of the plates from 2-1/2" to 2-3/4". See page S4 of the Stealth drawing plate A.I have attached the MTR for your review.(see snippets) Is this deviation acceptable?

Thanks,

<image002.png><image003.png>

<image004.png>

Keith A. Stackhouse
Structural Construction Manager
<image005.gif>
LCC Construction Services
2500 Sylon Blvd.
Hainesport, NJ 08036

(Cell) 609-367-6107
keith_stackhouse@lcc.com

From: Ryan Rimmele [mailto:rrimmele@tepgroup.net]
Sent: Thursday, January 22, 2015 1:18 PM
To: Keith_ Stackhouse
Cc: Bruno, Jerry (Contractor); lccmods; SGS_PMI@sgstowers.com; RJR
Subject: RE: Milford Shore Area - 825998 - Request for EOR review of punch list

Items:

1. Approved
2. Cold-galv per crown standards
3. I cannot tell from the photos, does the extent of the trimming go beyond the extent of the nut? The nut needs to be in full contact with the washer below. This is acceptable if you can confirm that is the case.
4. Approved
5. Approved
6. Install a jam nut below the existing nut
7. The revision 1 drawings are the latest (the ones with the Dywidag anchor rods). The ¾" is correct and approved.
8. Approved

Please make sure deviations from the SDD are accounted for in the redlines/as builts.

Thanks,
Ryan

_ _ _ _ _ _ _
Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351 Ext. 2402|Fax: (919) 661-6350

Subject: FW: Milford Shore Area - 825998 - Request for EOR review of punch list

From: Ryan Rimmele [mailto:rrimmele@tepgroup.net]
Sent: Friday, January 23, 2015 10:58 AM
To: Keith_ Stackhouse; SGS MI
Cc: Bruno, Jerry (Contractor); lccmods; RJR; Devin_ Diehl
Subject: RE: Milford Shore Area - 825998 - Request for EOR review of punch list

I ran the calcs conservatively estimating the loss of bearing area due to the cut washers. Even with the loss of area there is still a sufficient amount of bearing area to full develop the anchor bolt. The as-is condition is approved.

Thanks,
Ryan

_ _ _ _ _ _ _
Ryan Rimmele, P.E., S.E.
Project Engineer | Tower Engineering Professionals, Inc. (www.tepgroup.net)
326 Tryon Road|Raleigh, NC 27603|Office: (919) 661-6351 Ext. 2402|Fax: (919) 661-6350

PUNCH ITEM 1

HEIGHT	FLAT/ARC	PLATE #	PLATE HT START/STOP	DRAWING PG #
Base	-See Below	NA	-NA	S-2

DISCREPANCY:

Drawing call for spacing of anchor rods to be equal, spacing is as follows:
North East anchor rod to North West anchor rod = 1'-0" or 54.7°
North West anchor rod to South West anchor rod = 2'-0" or 109.4°
South West anchor rod to South East anchor rod = 1'-4" or 72.9°
South East anchor rod to North East anchor rod = 2'-3" or 123.0°

ACTIONS NEEDED BY GC:

Obtain EOR approval or install per modification drawings.

PHOTOGRAPHS

PUNCH ITEM 3

HEIGHT	FLAT/ARC	PLATE #	PLATE HT START/STOP	DRAWING PG #
Base	-NA	-NA	-NA	-NA

DISCREPANCY:

Existing anchor bolt washer, located on sides of newly installed stiffeners, were cut to facilitate the newly installed ARB.

ACTIONS NEEDED BY GC:

Obtain EOR approval for existing condition.

PHOTOGRAPHS

SGS_PMI@Sgstowers.com

PUNCH ITEM 4

HEIGHT	FLAT/ARC	PLATE #	PLATE HT START/STOP	DRAWING PG #
Base	-NA	NA-	-NA	-NA

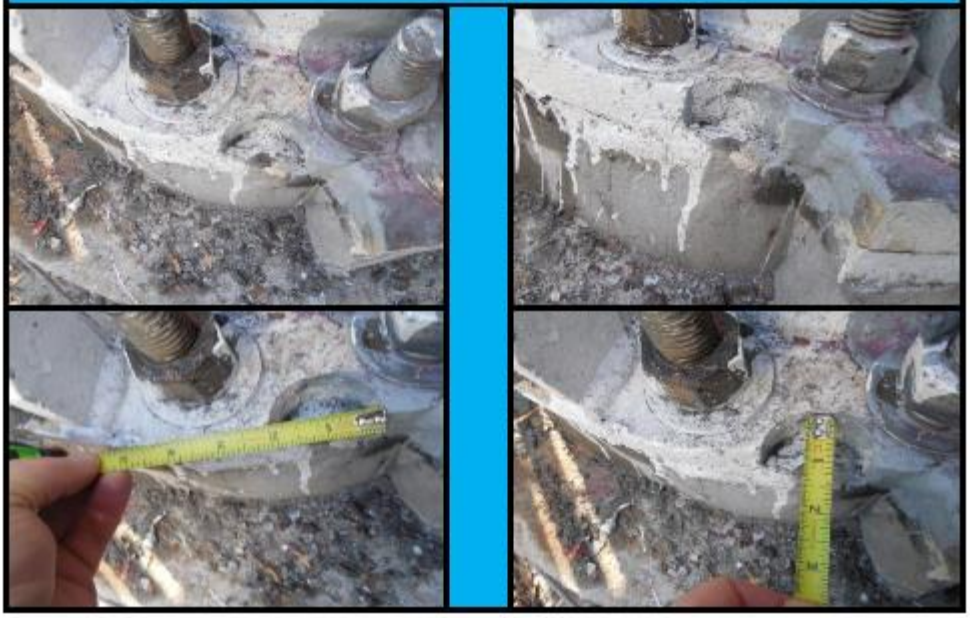
DISCREPANCY:

A 2" x 1 ½" notch has been cut in the base plate. The notch located 2 ½" to left of the North East anchor rod.

ACTIONS NEEDED BY GC:

Obtain EOR approval existing condition.

PHOTOGRAPHS



SGS_PMI@Sgstowers.com

PUNCH ITEM 7

HEIGHT	FLAT/ARC	PLATE #	PLATE HT START/STOP	DRAWING PG #
Base	-NA	-NA	NA-	S-3

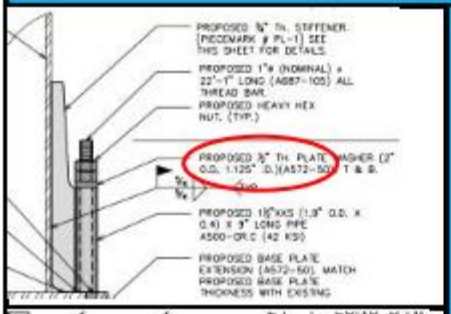
DISCREPANCY:

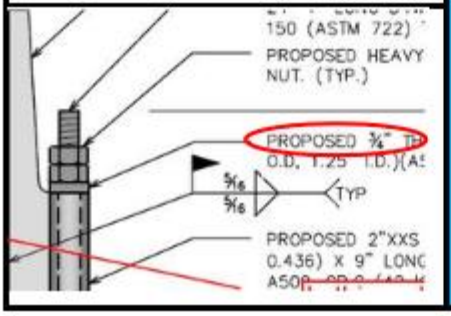
We have conflicting information regarding the washer thickness to be used, please see drawing snippets below. The washer plate measured ¼" thick.

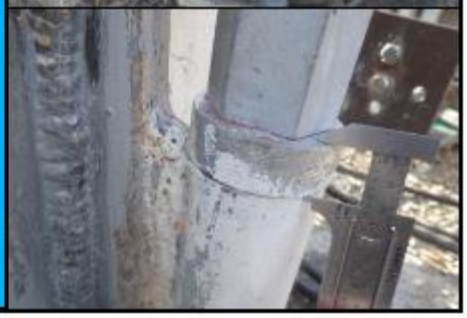
ACTIONS NEEDED BY GC:

Obtain EOR approval for existing condition or install per modification drawings.

PHOTOGRAPHS







PUNCH ITEM 8

HEIGHT	FLAT/ARC	PLATE #	PLATE HT START/STOP	DRAWING PG #
	See Below	1		S-4

DISCREPANCY:

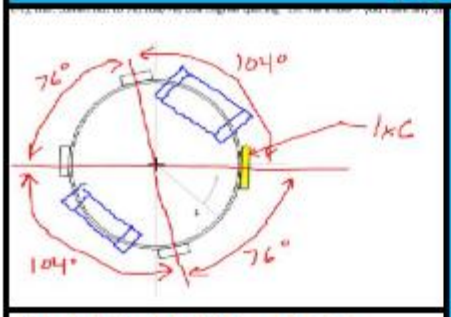
The EOR approved the below separations for the newly installed splice plate. The plate separations observed are listed below

- North plate – North East plate = 1'-1"
- North East plate – South East plate= 1'-3"
- South East plate – South West plate = 1'-2"
- South West plate – North plate = 1'-4"

ACTIONS NEEDED BY GC:

Obtain EOR approval for existing condition or install per modification drawings.

PHOTOGRAPHS



Flat Plate Spacing

	A-B	B-C	C-D	D-A
Plate width	4.25	6	4.25	4.25
Gap (edge-edge)	13	15	14	16
Degree of Sep	80.9°	98.5°	85.6°	95.0°

6.3.3 PHOTOGRAPHS

6.3.4 POST INSTALLED ANCHOR ROD PULL-OUT TESTING

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

FIELD VISIT REPORT

DATE: December 15, 2014 **TIME:** 12:45 PM

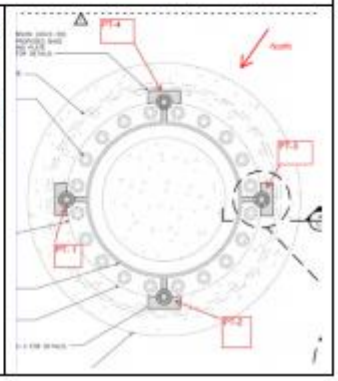
TO: LLC
ATTN: Keith Stackhouse
PHONE: 609.367.6107
EMAIL: keith_stackhouse@lcc.com

PREPARED BY: Chris Thomas
PHONE: 203.488.0580 ext. 119
EMAIL: cthomas@centekeng.com

SUBMITTED BY: Carlo F. Centore, PE
PHONE: 203.488.0580 ext. 122
EMAIL: cfcentore@centekeng.com

CENTEK NO.: 14137.000
PROJECT NAME: T-Mobile CT11209D – Milford Shore Area
CC: Brenden Foster (LCC)

The following was observed, discussed, reviewed and/or resolved at the site, which requires action by the Contractor unless noted otherwise. Items shall remain on this ongoing report until resolved to the satisfaction of this office.

121514. 1	Purpose of field visit was to conduct & document anchor pull tests per Tower Engineering Professionals (Job #100459) Tower Modification Drawings dated 03/06/2014 for installation of four (4) post-installed anchor rods.	
121514. 2	Weather conditions were Sunny with an afternoon temperature of 40ºF.	
121514. 3	Refer to the attached "Anchor Rod Pull Test Field Report" prepared by Centek Engineering for full test results.	
121514. 4	Pull Tests (PT's) were conducted on four (4) of the four (4) installed anchors. Each anchor was pulled with a Dudgeon 60 Ton hydraulic cylinder to the specified 60 kip proof load and released with subsequent cycle testing in 15% increments back to full proof load.	

**IF YOU DO NOT RECEIVE ALL PAGES AS NOTED ABOVE,
PLEASE CONTACT OUR OFFICE IMMEDIATELY.
PAGE 1 OF 4**

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121514. 5	Typical test set up showing dial indicator mounted to tripod, and hydraulic jack set to pull anchor rod.	
121514. 6	(See note **121514.5** above)	
121514. 7	Typical pressure gauge of 5,264 psi at 100% loading of Test Cycle.	

**IF YOU DO NOT RECEIVE ALL PAGES AS NOTED ABOVE,
PLEASE CONTACT OUR OFFICE IMMEDIATELY.
PAGE 2 OF 4**

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121514. 8	Typical Dial Indicator reading at 100% loading of Test Cycle with associated Pressure Gauge reading.	
121514. 9	(See note **121514.8** above)	
121514. 10	Typical Dial Indicator reading 0% loading of Test Cycle with associated Pressure Gauge reading.	
121514. 11	(See note **121514.10** above)	

CENTEK engineering
Centered on Solutions℠

63-2 North Branford Road
Branford, Connecticut 06405
(203) 488-0580
Fax (203) 488-8587
www.CentekEng.com

121514. 12	Documentation of scheduled values of loads & gage pressure readings for the DUDGEON 60 TON hydraulic cylinder are attached to this report.
121514. 13	**PT-1 thru PT-4** meet all test requirements. Reference attached Centek Anchor Rod Field Test Reports dated 12.15.14.

CENTEK engineering

Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Anchor Rod Pull Test Field Report

Site Address: Milford Shore Area - CT11209D - 14137.000
Date: 12.15.14
Time Arrived: 12:45 pm
Weather Conditions: Sunny
Temperature: 40F

Pull Test Number: 1 OF 4

Size & Grade of Anchor Rod: 1" DYWIDAG GRADE 150

Bonding Agent: Hilti HIT-RE 500 Epoxy

Testing Equipment:	DUDGEON 60 Ton 6"

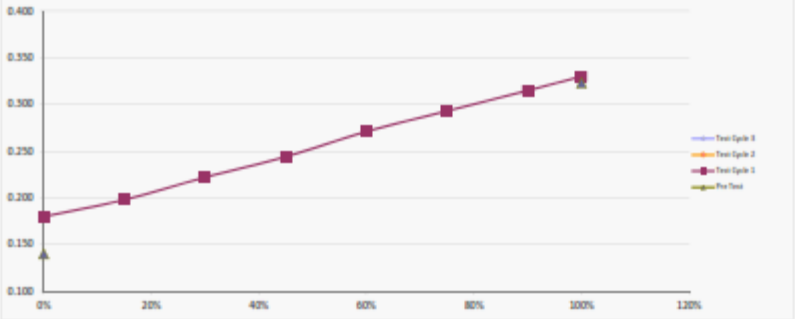
Test Target Load (KIPS):	60

Comments:

Jack-Gauge Calibration	Jack (KIPS)	Gauge (PSI)
0.01140	7.5	700
	30	2600
	60	5025

Target Tension (PRECENT)	Target Jack Load (KIPS)	Target Gauge Pressure (PSI)	Pre Test	Test Cycle 1		Test Cycle 2		Test Cycle 3	
			Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)
0%	0.0	0	0.140	0.180					
15%	9.0	790		0.198	0.198				
30%	18.0	1579		0.222	0.222				
45%	27.0	2369		0.244	0.244				
60%	36.0	3159		0.271	0.271				
75%	45.0	3948		0.293	0.293				
90%	54.0	4738		0.315	0.315				
100%	60.0	5264	0.323	0.330	0.330				
0%	0.0	0	0.180	0.189					
Deflect 0% End minus Deflect 0% Start:									

Check Sustained Deflection:		PASS	(passes if within 0.001")
Check Incremental Residual Deflection, Test Cycle 1:	0.009	PASS	(passes if within 0.010")
Check Incremental Residual Deflection, Test Cycle 2:			(passes if within 0.010")
Check Incremental Residual Deflection, Test Cycle 3:			(passes if within 0.010")
Check Total Residual Deflection:	0.009	PASS	(passes if within 0.050")
Check All:		PASS	



Prepared By: Chris Thomas

CENTEK engineering

Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Anchor Rod Pull Test Field Report

Site Address: Milford Shore Area - CT11209D - 14137.000
Date: 12.15.14
Time Arrived: 1:35 pm
Weather Conditions: Sunny
Temperature: 40F

Pull Test Number: 2 OF 4

Size & Grade of Anchor Rod: 1" DYWIDAG GRADE 150

Bonding Agent: Hilti HIT-RE 500 Epoxy

Testing Equipment:	DUDGEON 60 Ton 6"

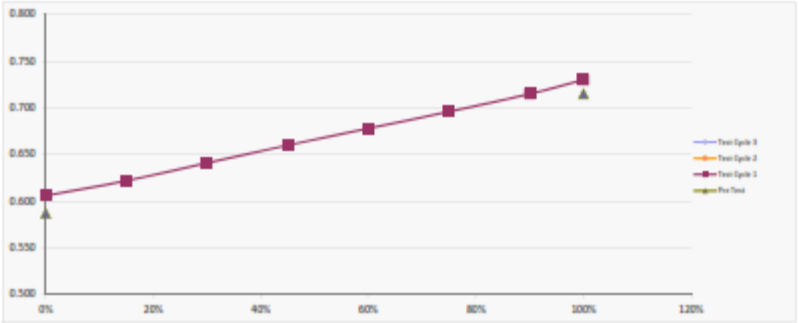
Comments:

Test Target Load (KIPS):	60

Jack-Gauge Calibration	Jack (KIPS)	Gauge (PSI)
0.01140	7.5	700
	30	2600
	60	5025

Target Tension (PRECENT)	Target Jack Load (KIPS)	Target Gauge Pressure (PSI)	Pre Test	Test Cycle 1		Test Cycle 2		Test Cycle 3	
			Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)
0%	0.0	0	0.587	0.606					
15%	9.0	790		0.622	0.622				
30%	18.0	1579		0.641	0.641				
45%	27.0	2369		0.660	0.660				
60%	36.0	3159		0.678	0.678				
75%	45.0	3948		0.696	0.696				
90%	54.0	4738		0.715	0.715				
100%	60.0	5264	0.715	0.730	0.730				
0%	0.0	0	0.606	0.615					
Deflect 0% End minus Deflect 0% Start:									

Check Sustained Deflection:		PASS	(passes if within 0.001")
Check Incremental Residual Deflection, Test Cycle 1:	0.009	PASS	(passes if within 0.010")
Check Incremental Residual Deflection, Test Cycle 2:			(passes if within 0.010")
Check Incremental Residual Deflection, Test Cycle 3:			(passes if within 0.010")
Check Total Residual Deflection:	0.009	PASS	(passes if within 0.050")
Check All:		PASS	



Prepared By: Chris Thomas

CENTEK engineering

Centered on Solutions℠

63-2 North Branford Road
Branford, CT 06405
www.centekeng.com
P: (203) 488-0580
F: (203) 488-8587

Anchor Rod Pull Test Field Report

Site Address: Milford Shore Area - CT11209D - 14137.000
Date: 12.15.14
Time Arrived: 2:25 pm
Weather Conditions: Sunny
Temperature: 39F

Pull Test Number: 3 OF 4

Size & Grade of Anchor Rod: 1" DYWIDAG GRADE 150

Bonding Agent: Hilti HIT-RE 500 Epoxy

Testing Equipment:	DUDGEON 60 Ton 6"

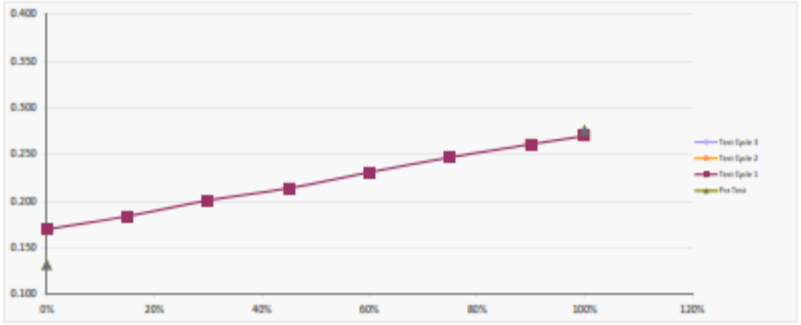
Comments:

Test Target Load (KIPS):	60

Jack-Gauge Calibration	Jack (KIPS)	Gauge (PSI)
0.01140	7.5	700
	30	2600
	60	5025

Target Tension (PRECENT)	Target Jack Load (KIPS)	Target Gauge Pressure (PSI)	Pre Test	Test Cycle 1		Test Cycle 2		Test Cycle 3	
			Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)
0%	0.0	0	0.132	0.170					
15%	9.0	790		0.184	0.184				
30%	18.0	1579		0.201	0.201				
45%	27.0	2369		0.214	0.214				
60%	36.0	3159		0.231	0.231				
75%	45.0	3948		0.247	0.247				
90%	54.0	4738		0.261	0.261				
100%	60.0	5264	0.276	0.270	0.270				
0%	0.0	0	0.170	0.172					
Deflect 0% End minus Deflect 0% Start:									

Check Sustained Deflection:		PASS	**(passes if within 0.001")**
Check Incremental Residual Deflection, Test Cycle 1:	0.002	PASS	**(passes if within 0.010")**
Check Incremental Residual Deflection, Test Cycle 2:			**(passes if within 0.010")**
Check Incremental Residual Deflection, Test Cycle 3:			**(passes if within 0.010")**
Check Total Residual Deflection:	0.002	PASS	**(passes if within 0.050")**
Check All:		PASS	



Prepared By: Chris Thomas

CENTEK engineering

Centered on Solutions℠ www.centekeng.com

63-2 North Branford Road P: (203) 488-0580

Branford, CT 06405 F: (203) 488-8587

Anchor Rod Pull Test Field Report

Site Address: Milford Shore Area - CT11209D - 14137.000

Date: 12.15.14

Time Arrived: 3:15 pm

Weather Conditions: Sunny

Temperature: 38F

Pull Test Number: 4 OF 4

Size & Grade of Anchor Rod: 1" DYWIDAG GRADE 150

Bonding Agent: Hilti HIT-RE 500 Epoxy

Testing Equipment:	DUDGEON 60 Ton 6"

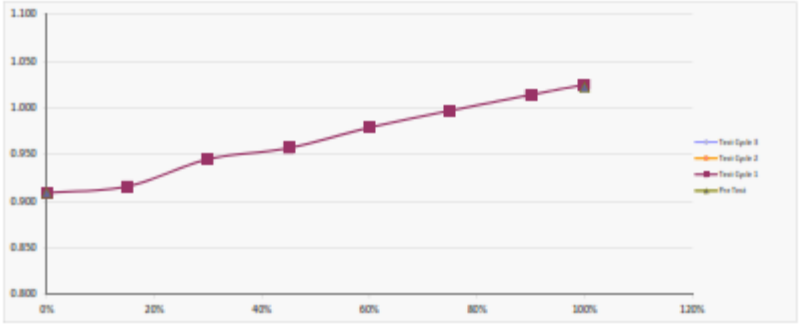
Comments:

Test Target Load (KIPS):	60

Jack-Gauge Calibration	Jack (KIPS)	Gauge (PSI)
0.01140	7.5	700
	30	2800
	60	5025

Target Tension (PRECENT)	Target Jack Load (KIPS)	Target Gauge Pressure (PSI)	Pre Test	Test Cycle 1		Test Cycle 2		Test Cycle 3	
			Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)	Initial Deflection (in)	Sustained Deflection (in)
0%	0.0	0	0.909	0.909					
15%	9.0	790		0.916	0.916				
30%	18.0	1579		0.945	0.945				
45%	27.0	2369		0.957	0.957				
60%	36.0	3159		0.979	0.979				
75%	45.0	3948		0.997	0.997				
90%	54.0	4738		1.014	1.014				
100%	60.0	5264	1.022	1.025	1.025				
0%	0.0	0	0.909	0.912					
Deflect 0% End minus Deflect 0% Start:									

Check Sustained Deflection:		PASS	**(passes if within 0.001")**
Check Incremental Residual Deflection, Test Cycle 1:	0.003	PASS	**(passes if within 0.010")**
Check Incremental Residual Deflection, Test Cycle 2:			**(passes if within 0.010")**
Check Incremental Residual Deflection, Test Cycle 3:			**(passes if within 0.010")**
Check Total Residual Deflection:	0.003	PASS	**(passes if within 0.050")**
Check All:		PASS	



Prepared By: Chris Thomas

Richard Dudgeon, Inc.
100 Hicks Street, Bridgeport, CT 06605
Tel: (203) 336-4459 Fax: (203) 333-8417
Toll Free: 888-383-4366

JACK CALIBRATION REPORT

Cylinder Capacity (Tons) 60, Stroke 6", Serial No. RT4443
(A)Gauge Rating (PSIG) 10,000, Dial Dia. 6", Serial No. 110SCALE (A)
(B)Gauge Rating (PSIG) 10,000, Dial Dia. 6", Serial No. 1109KRAK (B)

Notice: Calibration reports prepared by Richard Dudgeon, Inc. are submitted on a confidential basis and the data contained therein is our customer's proprietary information. Others may not use such reports without the express written consent of Richard Dudgeon, Inc. and it's customers.

Dudgeon Order No. L17954 Order Date 12/17/14 Test Date 12/18/14
Customer CENTEK ENGINEERING Purchase Order No. DAN REID
Test Performed By W.Nold In 50 Ton Tinius Olsen Test Machine Co., Universal Test Machine Serial Number 19249.

Test Method: Cylinder pressure increased in even increments at slow rate by hydraulic pump. Output force of cylinder measured by Test Machine calibrated (within a tolerance of one percent) between 1/2 and 50 tons traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards).

LOAD ON CYLINDER KIPS/TONS	GAUGE READING IN PSI AT RAM EXTENSIONS OF						AVERAGE PRESSURE PSI	
	1 INCHES		3 INCHES		5 INCHES			
	A	B	A	B	A	B	A	B
7½	700	700	700	700	700	700	700	700
15	1325	1350	1325	1350	1325	1350	1325	1350
22½	2000	1975	2000	1975	2000	1975	2000	1975
30	2100	2575	2100	2575	2100	2575	2100	2575
37½	3200	3175	3200	3175	3200	3175	3200	3175
45	3800	3775	3800	3775	3800	3775	3800	3775
52½	4450	4400	4450	4400	4450	4400	4450	4400
60	5075	5000	5075	5000	5075	5000	5075	5000

File: JKCAL2G3COLTO.DOC 8/28/03 Temperature at time of test 70 Deg. F

RICHARD DUDGEON, INC.

100 HICKS STREET BRIDGEPORT, CT 06608 TEL:203-336-4459 FAX:203-333-8417

WWW.DUDGEONJACKS.COM email:APPLICATIONS@DUDGEONJACKS.COM

PRESSURE GAUGE CERTIFICATION

CUSTOMER: **CENTEK ENGINEERING INC.**

CUSTOMER'S ORDER NO.	DUDGEON ORDER NO.	ORDER DATE
Dan Reid	L17954	12/12/14

GAUGE SERIAL NO.	CAPACITY
1102KRAK	10,000 PSI 4" ϕ

WE HEREBY CERTIFY THE ABOVE HYDRAULIC GAUGE HAS BEEN TESTED AGAINST OUR HEISE DIGITAL PRESSURE INDICATOR, SERIAL NO. S7-9400 AND FOUND TO BE WITHIN A STANDARD ACCURACY (PLUS OR MINUS 1/2%) OF FULL SCALE. OUR TEST EQUIPMENT IS TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

REFERENCE PRESSURE (PSI)	GAUGE READING (PSI)
0	50
1000	1050
2000	2025
3000	3025
4000	4025
5000	5050
6000	6050
7000	7050
8000	8050
9000	9050
10000	X

RICHARD DUDGEON, INC.

W. Abed

DATE: 12/12/14

RICHARD DUDGEON, INC.

100 HICKS STREET BRIDGEPORT, CT 06608 TEL:203-336-4459 FAX:203-333-8417

WWW.DUDGEONJACKS.COM email:APPLICATIONS@DUDGEONJACKS.COM

PRESSURE GAUGE CERTIFICATION

CUSTOMER: **CENTEK ENGINEERING INC.**

CUSTOMER'S ORDER NO.	DUDGEON ORDER NO.	ORDER DATE
Dan Reid	L17954	12/12/14

GAUGE SERIAL NO.	CAPACITY
110SOCA6	10,000 PSI 6" ϕ

WE HEREBY CERTIFY THE ABOVE HYDRAULIC GAUGE HAS BEEN TESTED AGAINST OUR HEISE DIGITAL PRESSURE INDICATOR, SERIAL NO. S7-9400 AND FOUND TO BE WITHIN A STANDARD ACCURACY (PLUS OR MINUS 1/2%) OF FULL SCALE. OUR TEST EQUIPMENT IS TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

REFERENCE PRESSURE (PSI)	GAUGE READING (PSI)
0	50
1000	1050
2000	2050
3000	3050
4000	4050
5000	5050
6000	6050
7000	7050
8000	8050
9000	9050
10000	X

RICHARD DUDGEON, INC.

W. Dudgeon

DATE: 12/12/14

MATERIALS TESTING, INC.

55 LAURA STREET • NEW HAVEN, CONNECTICUT 06512 • (203)468-5216
42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860)423-1972
materialstestinginc.com

Client: Centek Engineering
63-2 North Branford Road
Branford, CT 06405
Attn: Dan Reid

Date: 03-16-15
Report No.: S-1003

Project: Communications Tower CT 11209D
234 Melba Street
Milford, CT

Subject: MAGNETIC PARTICLE EXAMINATION OF WELDS - FIELD

As requested a return visit was made to reinspect new flange plate welded to existing mast top. The welds were power brushed to remove paint on weld and adjacent area. Reinspection of welds were found acceptable by magnetic particle examination.

Weld area was repainted to match existing finish. Client's camera was used for various pictures taken.

LOCATION OR MEMBER	AREA	INTERPRETATION		REPAIRS		REMARKS
		ACCEPT	REJECT	ACCEPT	REJECT	
New flange plate to existing pole		✓				

Method of Inspection:

☒ Dry ☐ Wet ☐ Residual ☐ Continuous Unit Type: Mangaflux Y7
☒ AC ☐ DC ☐ Half-Wave ☒ Yoke ☐ Prod

Manufacturer or Contractor NA

Remarks: Reinspection of report dated 1-15-2015 - paint was removed on weld and adjacent area and area was inspected and found acceptable.

Materials Testing, Inc. Technician Henry Daricek Level: II

Technician Certified in Accordance with MTI NDT Procedure WP-001.

AWS QC 1 WILLIAM J. SOUCY 91061231 CWI

William J. Soucy

1cc: Client

SW