



Crown Castle
3530 Toringdon Way Suite 300
Charlotte NC 28277

Jerry Feathers
Tel (704) 405-6549
Fax (724) 416-6484
Email: Jerry.feathers.contractor@crowncastle.com

February 23, 2015

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

RE: T-Mobile-Exempt Modification - Crown Site BU: 822765
T-Mobile Site ID: CT11025B
Located at: 201 Main Street, Newtown, CT 06470

Dear Ms. Bachman:

This letter is to confirm that all construction activity has been completed. Pursuant to the Connecticut Siting Council approval of **EM-T-MOBILE-014-141020**, this letter is to satisfy item number three of the approval letter that the CSC will be notified in writing within 45 days after completion of construction.

Please contact me if you have any questions.

Sincerely,

Jerry Feathers
Property Specialist
704-405-6549





10 INDUSTRIAL AVENUE, SUITE 3
MAHWAH, NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

April 30, 2015

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

RE: EM-T-Mobile-097-141020
T-Mobile Site ID CT11217A
201 Main Street, Newtown, CT
Notice of Construction Complete

Dear Attorney Bachman,

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to notify the Connecticut Siting Council ("Council") that the exempt modification decision conditions have been met and constructed in accordance with the documentation provided at the time of filing.

The Council acknowledged the above referenced T-Mobile notice of exempt modification on November 10, 2014.

The Council imposed the following conditions in its acknowledgment:

- Perform foundation mapping in accordance with the structural analysis report prepared by Paul J. Ford and Co., stamped by Justin Kline on October 6, 2014, prior to the installation of T-Mobile's equipment.
- Within 45 days following completion of the equipment installation, T-Mobile shall provide documentation that its installation complied with the recommendations of the Structural Analysis Report.

The attached Statement of Special Inspections provides evidence of compliance with the conditions outlined by the Council.

In addition, T-Mobile hereby notifies the Council that construction of the acknowledged modifications were complete as of December 31, 2014.

Sincerely,

A handwritten signature in black ink that reads "Jamie Marchini". The signature is written in a cursive style with a horizontal line at the end.

Jamie Marchini

Project Manager

Transcend Wireless LLC on behalf of T-Mobile

10 Industrial Ave, Suite 3

Mahwah, NJ 07430

June 30, 2014



Brian Arriaga
Crown Castle
1200 MacArthur Blvd, STE 200
Mahwah, NJ 07430
(201) 316-9172
Brian.Arriaga.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:	826222
	Crown Castle Site Name:	Newtown/RT-25
	Crown Castle JDE Job Number:	225018
Engineering Firm Designation:	SGS Project Number	130625
Site Data:	201 Main St.	
	Newtown, CT 06470	
	N 41° 22' 41.32", W -73° 16' 26.94"	
	150 Foot Monopole	

Dear Mr. Arriaga,

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 596145. 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	Daniel Sinnott	June 4, 2014
<input checked="" type="checkbox"/> Independent <input type="checkbox"/> EOR <input type="checkbox"/> Turnkey			
Modification Design EOR	Paul J. Ford	Joseph Jacobs, 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	N/A	N/A	N/A
Field NDE for the General Contractor	N/A	N/A	N/A

Table 2 – Documents

Document(s)	Remarks	Source
Modification Drawings Date: 8/21/2013 EOR: Joseph Jacobs, P.E. Job#: 37513-1642	Creator of Drawings: Paul J. Ford Job #: 37513-1642 Date of Drawings: 8/21/2013	CCI Sites Drawing File: 3963744

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 New Micropiles In Existing Foundation. 0'.	Passing	Passing	Passing
Note: A Thicker Bearing Plate was Installed than Designed. See Section 6.1.4 for EOR Approval E-Mail.			

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

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PRE-CONSTRUCTION

6.1.1 MI CHECKLIST DRAWING

37513-1542 PERMIT.DWG

MODIFICATION INSPECTION NOTES

GENERAL
 THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DECIDED BY THE ENGINEER OF RECORD (EOR).
 THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN (EOR). KNOWS THE MI INSPECTOR THE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY REMAINS WITH THE EOR AT ALL TIMES.
 ALL MIs SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (DEV) OR ENGINEERING SERVICE VENDOR (ESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE (ENG-004, 10/73) LIST OF APPROVED MI VENDORS.
 TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A P.O. IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROMPTLY IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).
 REFER TO ENG-SOW-10007, MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR
 THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A P.O. FOR THEM TO, AT A MINIMUM:

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

THE MI INSPECTOR OR RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

GENERAL CONTRACTOR
 THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A P.O. FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

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

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOW-10007.

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

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

CANCELLATION OR DELAYS AS DETAILED IN MI
 IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME, E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY OR CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MIs
 IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI (FAILED MI), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENTAL MI.
- OR WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

MI VERIFICATION INSPECTIONS
 CROWN RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTIONS ON TOWER MODIFICATION PROJECTS.
 ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOW-10007.
 VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADVISORY FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASS/FAIL" OR "PASS AS NOTED" REPORT FOR THE ORIGINAL PROJECT.

PHOTOGRAPHS
 BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - IRON MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - WELD PREPARATION
 - BOLT INSTALLATION AND TORQUE
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
- FINAL IN-FIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.
 THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOW-10007.

MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWINGS
X	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
NA	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT FILE INSTALLATION AND TESTING PLAN TO CROWN AND P.O. FOR REVIEW. TESTING PLAN SHALL INCLUDE DETAILS REGARDING HOW CONTRACTOR INTENDS TO PREVENT INTERACTION BETWEEN THE TEST FILE AND THE EXISTING FOUNDATION DURING TESTING.	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	FOUNDATION INSPECTIONS
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
NA	CONTRACTORS CERTIFIED WELD INSPECTION
NA	EARTHWORK: LIFT AND DENSITY
NA	ON-SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
NA	THIRD PARTY ON-SITE INSPECTION OF BOLT PRETENSION PER CROWN REQUIREMENTS
NA	INSPECTION OF ALKX BOLTS AND OTTS PER REQUIREMENTS ON SHEET S-3
ADDITIONAL TESTING AND INSPECTIONS: VERIFY MICROPILE INSTALLATION DETAILS, SPECIFICALLY MICROPILE SIZES, DRILL HOLE DIAMETERS & DEPTHS, GROUT % AND THAT INSTALLATION WAS PER MANUFACTURER RECOMMENDATION	
POST-CONSTRUCTION	
X	MI INSPECTOR RESOLVE ON RECORD DRAWING(S)
NA	THIRD PARTY ON-SITE BOLT INSPECTION REPORT
NA	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS: PROVIDE REPORT DOCUMENTING RESULTS OF MICROPILE INSTALLATION AND PROOF TESTING	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT
 NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION
 No. PEN 22731
LICENSED PROFESSIONAL ENGINEER

AUG 2 1 2013

ASBUILT 5-26-14
 R.S.T. LCC DEPLOYMENT

PROJECT No: 37513-1542
 DRAWN BY: E.M.S.
 CHECKED BY: K.A.T.
 APPROVED BY: [Signature]
 DATE: 8-20-2013

ISSUE DATE OF PERMIT: 8-20-2013

BU #826222; NEWTOWN/RT-25
 NEWTOWN, CT
 MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PAUL J. FORD AND COMPANY
 STRUCTURAL ENGINEERS
 250 East Broad Street - Suite 600 - Columbus, Ohio 43215
 (614) 221-4678 www.pjfc.com

CROWN CASTLE
 8 PARKMEADOW DRIVE, PITTSFORD, NY 14854
 PH: (516) 896-3445 FAX: (516) 896-3448

6.1.2 EOR APPROVED SHOP DRAWINGS

From: Kyle Thorpe [mailto:KThorpe@pffweb.com]
Sent: Thursday, January 09, 2014 10:51 AM
To: Klaus Horsch
Cc: James Yavorsky; Jeff Hemmings
Subject: RE: Newtown RT 25, BU# 826222

Klaus,

Fab drawings are not required as long as we have some verification of the bearing plates, like shipping slips.

Thank you,

Kyle Thorpe, E.I.
Structural Designer
Main: (614) 221-6679 ext. 2168
Direct: (614) 448-4168
Email: kthorpe@pffweb.com



6.1.3 FABRICATION INSPECTION



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

To:
Subject: **Newtown RT 25 - 826222**

June 17, 2014

Please accept this letter as certification that our work on LCC Job # 131670
Newtown RT 25 - 826222 - was performed in accordance with industry
standards and the contractor documents.

Please contact me if you have any questions.

Thank you,

A handwritten signature in black ink that reads "Keith A. Stackhouse".

Keith A. Stackhouse
Structural Construction Manager
LCC Deployment Services Inc.

6.1.4 MATERIAL TEST REPORT (MTR)

Hello Klaus,

The drawings called for 60 ksi material. However, I don't believe these are feasible either. Let's go with 2.5" thick A572-50 steel. Let me know if this will work or not.

Thank you,

Kyle Thorpe, E.I.
Structural Designer
Main: (614) 221-6679 ext. 2168
Direct: (614) 448-4168
Email: kthorpe@pjfweb.com



>>> "Klaus Horsch" <khorsch@telecomcontracting.com> 1/9/2014 10:17 AM >>>

Good morning Kyle,

The MI Checklist for this project says that EOR approved shop drawings are needed.

But this project is a micropile installation. Do you want to see the bearing plates on S5 on the shop drawings?

Also, will A572-50 work for the plate mentioned above? A572-65 above 1-1/4" thickness is not readily available, if at all.

Thanks,

Klaus Horsch, E.I.T.
TCCI
2242 Old Marlton Pike
Marlton, NJ 08053-2666
856-810-1658 ext. 239
Cell – 609-257-7683
Khorsch@telecomcontracting.com

Material Test Report

B/L: 304559

4001 Philadelphia Pike, Claymont DE 19703

05/16/2012

Sold To: **CERTIFIED STEEL COMPANY**

1333 BRUNSWICK PIKE, SUITE 200, LAWRENCEVILLE, NJ 08648

Order 234453-06

Customer PO 120372

Specifications:

ASTM A572/A572M-07 Grade 50(345) Type 2 Fully Killed Fine Grain Practice
ASTM A709/A709M-10 Grade 50(345) Type 2 Fully Killed Fine Grain Practice

Products Shipped for Order 234453-06 (sorted by Serial)

Serial	Heat-Slab Orig	R/R	Plate Size in Inches	Plate Size in Mm	Lbs	Kg
B21708-1	2P842-908 USA	3.9	2.5000 x 96.0000 x 240.0000	63.50 x 2438.40 x 6096.00	16,335	7,409
B21709-1	9C674D-602 USA	3.9	2.5000 x 96.0000 x 240.0000	63.50 x 2438.40 x 6096.00	16,335	7,409

Shipment Summary of Order 234453-06: 2 pieces 32,670 lbs (14,819 kg)

Chemical Analysis for Order 234453-06 (sorted by Heat)

Heat/Anly	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	2P842	0.09	1.38	0.012	0.008	0.33	0.332	0.159	0.170	0.038	0.016
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.012	0.12	0.00	0.006	0.011	0.002	0.0004			

Heat/Anly	Heat	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
	9C674D	0.12	1.66	0.017	0.008	0.38	0.040	0.020	0.180	0.006	0.010
		Al	V	Nb/Cb	N	Alsol	Ti	B			
		0.033	0.14	0.00	0.006	0.000	0.002	0.0001			

Tensile Tests for Order 234453-06 (sorted by Heat)

Serial	Heat-Slab	Gauge		Tensile		Yield		Elongation		RA %	Head Tail	Dir	Norm	S/R	Test ID
		Inches	MM	KSI	MPA	KSI	MPA	%	In.						
B20673-1	2P842-502	3.0000	76.20	78	535	51	354	32	2	50		Tran			315222
B20674-1	2P842-202	3.0000	76.20	78	536	56	385	29	2	50		Tran			315223
B21709-1	9C674D-602	2.5000	63.50	82	564	53	368	28	2	50		Tran			315788

Other Information for Order 234453-06

Material is 100% melted and manufactured in the USA. No weld repair has been performed.

Shipment Grand Totals of B/L 304559: 4 pieces 44,105 lbs (20,006 kg)

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.

Chief Metallurgist, David J. Cernava

D. J. Cernava

Revision:

Page 3 of 3

GERDAU
 ST PAUL STEEL MILL
 1678 RED ROCK ROAD
 ST PAUL, MN 55119 USA
 (651) 731-9500

Chemical and Physical Test Report
 MADE IN UNITED STATES

M-116996

SHIP TO:
 TC INDUSTRIES
 4700 HALF MILE TRAIL
 CRYSTAL LAKE, IL 60012

INVOICE TO:
 KOEHLER STEEL CO LLC
 1509 NORTH 25TH AVE
 MELROSE PARK, IL 60160

SHIP DATE: 10/11/12
SHIP ACCOUNT NO: 60128741

151

PRODUCED IN: ST PAUL

GRADE	THICKNESS	WIDTH	LENGTH	WEIGHT	SALES ORDER	SHIP TO NUMBER
MA140	5	36	110	200	3077240-01	3077240-01
MA170	5	36	110	200	3077240-01	3077240-01
MA270	5	36	110	200	3077240-01	3077240-01

Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

Grade: MA140
Thickness: 5.0
Width: 36.0
Length: 110.0
Weight: 200.0

Element	Min	Max	Unit
C	0.05	0.08	%
Mn	0.30	0.60	%
P	0.010	0.015	%
S	0.005	0.010	%
Si	0.030	0.050	%
Cr	0.00	0.00	%
Ni	0.00	0.00	%
Mo	0.00	0.00	%
V	0.00	0.00	%
Nb	0.00	0.00	%
N	0.00	0.00	%
Sr	0.00	0.00	%
M	0.00	0.00	%
Al	0.00	0.00	%
Ca	0.00	0.00	%
Fe	0.00	0.00	%

Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

Grade: MA140
Thickness: 5.0
Width: 36.0
Length: 110.0
Weight: 200.0

Element	Min	Max	Unit
C	0.05	0.08	%
Mn	0.30	0.60	%
P	0.010	0.015	%
S	0.005	0.010	%
Si	0.030	0.050	%
Cr	0.00	0.00	%
Ni	0.00	0.00	%
Mo	0.00	0.00	%
V	0.00	0.00	%
Nb	0.00	0.00	%
N	0.00	0.00	%
Sr	0.00	0.00	%
M	0.00	0.00	%
Al	0.00	0.00	%
Ca	0.00	0.00	%
Fe	0.00	0.00	%

Customer Notices
 NO HEAT TREATMENT REQUIRED. STEEL NOT EXPOSED TO MERCURY.
 This material, including the label, was produced and manufactured in the United States of America.

Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

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 NO HEAT TREATMENT REQUIRED. STEEL NOT EXPOSED TO MERCURY.
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Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

Customer Requirements SOURCE: GA-STP CASTING STANDARD C81

1212 9657B
 Page 2 of 2



TC Industries Test Center
 3703 South Route 31
 Crystal Lake, IL 60012-1412
 Telephone (815) 459-2400 Fax (815) 459-3419

TEST REPORT

REPORT NO: 164913
 DATE: OCTOBER 26, 2012
 PAGE 1 OF 1

BILL TO: KREHER STEEL CO.
 1550 NORTH 25TH AVENUE
 MELROSE PARK, IL 60160

SHIP TO: KREHER STEEL CO.
 1550 NORTH 25TH AVENUE
 MELROSE PARK, IL 60160

DESC: 272 PCS 1.152"RD X 24"		HEAT: M677107		GRADE: A4140		WT: 23130	
PO: 1-120984		MO: 2077240-01		CO: 33530-01		LOT: 84241	
SPEC: QUENCH TEMPER, STRAIGHTEN ASTM A193B7-11/F1554 GR105 SR5				AIM 120 KSI MAX YIELD 150 KSI MAX TENSILE			
PROCESS:		FURN TEMP: 1600		FURN TIME hh:mm: .46		QUENCH: OIL	
		TEMPER TEMP: 1275		TEMPER TIME hh:mm: .46			
		STRESS TEMP:		STRESS TIME hh:mm:			
PARAMETER	UNITS	LIMITS	TEST RESULTS (See sampling plan on back)				
TENSILE	KSI	125.0 N/A ✓	131.0	130.0	130.0		
YIELD .2%	KSI	105.0 N/A ✓	114.0	113.0	113.0		
ELONG 2"	%	16.0 N/A ✓	16.0	20.0	21.0		
RED AREA	%	50.0 N/A ✓	56.0	59.0	60.0		
FS TENS	KSI	125.0 150.0 ✓	129.0				
FS YLD	KSI	105.0 N/A ✓	114.0				
ELONG 8"	%	12.0 N/A ✓	17.0				
FS REDAREA	%	45.0 N/A ✓	59.0				
CHARPY	FT-LB	15 N/A	60	60	60		
CVN TEMP	F	-20 -20	-20				
SURFACE HB	HBW	0 N/A ✓	269	269	269	269	269
CORE HB	HBW	0 321	285	285	285		



TC INDUSTRIES and SUBCONTRACTED LABS (ASLA ACCREDITED)

Tensile, Standard TC	Rockwell	Micro Analysis
Tensile, Full Size MSI	Brinell TC	Decarb Measure
Charpy V Notch TC	Ultra Sonic*	Chemistry*
Microhardness, Knoop*	Bend Test*	
TC: TC Test Center	BE: Berg Eng.	EX: Exova
Cert #1281.01	Cert #L1157-1	Cert #104.02
2/28/13	2/4/14	6/30/14
		MSI: Metallurgical Ser.
		Cert #0510.01
		12/31/12

Time 14:55 DATE IN: 10/12/12 *not included in our scope of accreditation FC 4.12.16F 7/15/10
 NOTES:

Phil Burgdorf
 Test Center Tech II

There are no deviations from test methods unless noted. It should not be assumed that mechanical properties of raw material heat treated to a testator standard will have the same properties as finished testware whose original material characteristics may have been significantly altered. No inventory was used/lost and no welding/repair was performed on this material while in the possession of TC Industries, Inc. This test report relates only to the items tested and shall not be reproduced, except in full, without the written permission of TC Industries Test Center.



Friedr. Ischebeck GmbH P.O. Box 1341 DE-58242 Ennepetal

Mill certificate to DIN EN 10204-2.2		Rec. 3474	Pos. 1
To Invoice No.	14400067	Delivery date	08.01.2014
Delivery Note no.			

CON-TECH Systems Ltd.
8150 River Road
CA-V4G 1B5 Delta, B.C.

FI-Order-No. 13206857 Destination Canada
Purchaser-Order no. 300951 Country of origin Germany
Date of Order 06.12.2013 Supply plant Ennepetal
User CON-TECH, Elizabethtown User-Order no.

TITAN Hollow Bar 73/53 with continuous right-hand thread,
steel S 460 NH according to DIN EN 10210-1,
height and shape of ribs according to DIN 488 (reinforcing bars),
approx. 13,7733 kg/m in bundles of 50 pcs., packed with steel strapping
surface untreated

Dimension			Quantity	kg	Total length in m
O.D.	I.D.	Length			
73 mm	x 53 mm	3 m	300	12.396	900

Results of the ladle analysis (S) %

Batch No.	C	SI	MN	P	S
3349301	0,194	0,466	1,49	0,014	0,0044

Results of the tensile tests min.

Yield point Ultimate load
Re 970 kN Rm 1160 kN

Result of the pass through test

Internal section is free from high temperature oxidation and shavings

Results of thread testing

Thread is well running over the entire length and fits to the gauges

Further test requirements

The material conforms to the ordering requirements

Friedr. Ischebeck GmbH
Löhnerstr. 51 58242 Ennepetal
D. Grandjean (Manager of quality assurance Department)

- EN 14199-2005 "Micropiles", 6.2.2: "Steel bars for the reinforcement of concrete micropiles shall comply with EN 10080 and EN 10210"
- US Department of Transportation, Federal Highway Administration / FHWA, Hollow-Core Soil Nails, April 2006, requires ASTM A 615, which is fulfilled

Hollow steel bars for reinforcement of Micropiles or Soil Nails acc. EN 14199:2008 "Micropiles" EN 14490:2010 "Soil Nailing"



DIN EN ISO 9001 / 2008
Registrierungsnummer 06-06-010

CE DEN EN 10210-1 405

www.ischebeck.de

6.1.5 PACKING SLIPS



Con-Tech Systems Ltd.

2-7-14

1832 University Commercial Place
Charlotte, NC 28213
Tel: (704) 494-3989
Fax: (704) 494-3990

www.contechsystems.com

PACKING SLIP

802028/0001

Customer Code ZZTELE
Order Number 802028
Ship Date Jan 9, 2014

HST # R1011275561

Sold To:

TELECOMMUNICATIONS CONTRACTING
7900 Westpark Drive
Suite A300
McLean
VA 22102
USA

Ship To:

TELECOMMUNICATIONS CONTRACTING
2242 OLD MARLTON PIKE E.
MARLTON
NJ 08053

*FOR
NEWTOWN-RT 25
131670*

Tel: 856-810-1658

PO Number	Shipped Via	Sales Rep			
411963	XPO LOGISTICS	806 - Chris Love			
Item Number	Description	Qty Ordered	Qty Shipped	Qty Bk/ordered	UOM
T73-0211 ✓	Adapter for Drill Bit T103 FOB: NEWTOWN, CT **FREIGHT IS ESTIMATED AND IS SUBJECT TO CHANGE** **BITS COMING OUT OF CHARLOTTE**	4	4	0	EA
T73-0154 ✓	Bar TITAN 73/53 RH 3.0m	16	16	0	EA
T73-0161 ✓	Coupler, T73/53-6, Black 89x235mm	24	24	0	EA
T73-0163 ✓	Nut Dome T73	8	8	0	EA
<p><i>Rec'd on 2-7-14 1:15 PM 1 Pallet with the above material listed for NEWTOWN RT-25 - CT 131670</i></p>					
Packed By	Checked By	Weight	No. of Packages		
		1663.382 LBS			



Con-Tech Systems Ltd.

1832 University Commercial Place
 Charlotte, NC 28213
 Tel: (704) 494-3889
 Fax: (704) 494-3990
 www.contechsystems.com

2-5-14

PACKING SLIP 802028/0002

Customer Code	ZZTELE
Order Number	802028
Ship Date	Feb 4, 2014

HST # R1011275561

Sold To:

TELECOMMUNICATIONS CONTRACTING
 7900 Westpark Drive
 Suite A300
 McLean
 VA 22102
 USA

Ship To:

TELECOMMUNICATIONS CONTRACTING
 2242 OLD MARLTON PIKE E.
 MARLTON
 NJ 08053

Tel: 856-810-1658

PO Number	Shipped Via	Sales Rep
411963	FedEx Freight	806 - Chris Love

Item Number	Description	Qty Ordered	Qty Shipped	Qty Bk/ordered	UOM
T03-0122	Drill Bit 280mm Clay Hardened	4	4	0	EA
<p>Rec. In on 2-5-14 from Fed Ex on 1 Pallet attn - Dave Campbell? PO# 411963 for Newtown Rt 25 Waiting for Rest of material to come in from above PO. Per Dave Campbell Front of Yard with Red tag on it marked with site</p>					

Packed By	Checked By	Weight	No. of Packages
		124.000 LBS	

Customer Copy

RUN DATE: 02/12/14
RUN TIME: 12:07:59

*** J.H. BOTTS, LLC. *** J.H. BOTTS, LLC. ***

PAGE 1
lauren

PICKING TICKET

2/17

ORDER-NO 68273 ORDER-DATE: 02/12/14

SOLD-TO: L C C Deployment Services, Inc
7900 Westpark Drive
Suite A300
McLean, VA 22102

SHIP-TO: L C C Deployment Services, Inc
2242 Old Marlton Pike
Marlton, NJ 08053

CUS-NO: LCCDSI

PO-NO: 412143

TERMS: 1%DISC10-NET30

SALESMAN: JERRY

SHIP VIA: CALL WHEN READY

SHIP DATE: 02/26/14

DATE SHIPPED:

ITEM-NO	DESCRIPTION	QTY ORDERED	QTY TO SHIP	UNIT WEIGHT	QTY SHIPPED
---------	-------------	-------------	-------------	-------------	-------------

*NOTE

131670-Newton

*T10105

10-7x282* (382* Scr) Pg 105

FNDOMDHG10

10-7 HHNut (Dcm) g/v DH

FHWMG10

10 Hardened Washer g F436

TSH

*** SPECIAL HANDLING ***

*NOTE

Clean entire length of
the threaded rods

NCT

CERT & TEST REPORT REQ'D

*NOTE

131670-Newton

TLS

LUMP SUM PRICE FREIGHT

14 LINE ITEMS

TOTAL QTY

TOTAL WEIGHT

COMPLETE
02/27/14
BUNDLE

O.S.
R.T.

PO # 412143
NEWTOWN RT 25
131670

2 Rods + Nuts +
Flat Washers
REC IN 3-4-14 3:45 pm



CERTIFIED STEEL COMPANY

199 Whitehead Rd.
Trenton, NJ 08619

May 02, 2014
Page 1 of 1

PO# 411962
FOR NEWTOWN-RT 25-131670
Load No. 4415
Shipper No. 414477

Bill To: LCC DEPLOYMENT SERVICES, INC
7900 WESTPARK DR. SUITE A300
MCLEAN, VA 22102

Rec In
5-2-14

Ship To: TELECOMMUNICATIONS CONTR.
customer pick up
, NJ

Attn: Phone: 856-810-1658

Customer P.O. # 411962
Contract
Sales 1: Devon Bole
Terms: 1/2% 10 DAYS NET 30

Sales Order No: 414477
F.O.B.: Delivered
Sales 2: Devon Bole

Due Date: 4/30/14
Ship Via: Our Truck

Ship Pcs	Description	Width	Length	Weight
4	PL 2 1/2 A572-50 A572-50 center hole burnt to sketch	18"	16'	726
4	Totals			726

Shipping Instructions:

Messages:

^CERTS WITH TRUCK & EMAIL
^CONTACT TOM EXT 210
A/P CALLS 708-873-2322

**PO# 411962 FOR
NEWTOWN-RT 25-131670**

Rec In 5-2-14

**4 Plates
2 1/2 x 16" x 16"**

Received By: _____
Signature: _____ Date: MAY 02 2014
Print Name: _____
Trailer #: _____

NOTICE: NO CLAIMS WILL BE ACCEPTED UNLESS NOTIFIED WITHIN 15 DAYS FROM SHIPMENT DATE

DRIVERS: COPY #1 -WAREHOUSE COPY-MUST GET CUSTMER SIGNATURE . #2- DRIVERS & #3 CUSTOMER'S COPY.

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: **Newtown RT 25 - 826222**

June 16, 2014

Please be advised that all work was completed per drawings dated 08/20/2013 by Paul J. Ford Engineering, 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,

A handwritten signature in black ink that reads "Keith A. Stackhouse".

Keith A. Stackhouse
Structural Construction Manager
LCC Deployment Services

6.2.2 FOUNDATION INSPECTIONS

Keith_ Stackhouse

From: Kyle Thorpe
Sent: Thursday, June 26, 2014 5:16 PM
To: Keith_ Stackhouse
Cc: Jorge Forsythe; Klaus Horsch; Rich Taschek; Stephen Teti
Subject: RE: Newtown RT 25, BU# 826222

Categories: Newtown RT 25 - 826222 - 131670

Hello Keith,

We can waive the foundation inspection requirement given the photo and concrete break tests. We still require the micropile installation documentation as stated in the MI checklist.

My direct number is (614)448-4168 if you ever need to contact me again.

Thank you,

Kyle Thorpe, E.I.
Structural Designer
Main: (614) 221-6679 ext. 2168
Direct: (614) 448-4168
Email: kthorpe@pjfweb.com

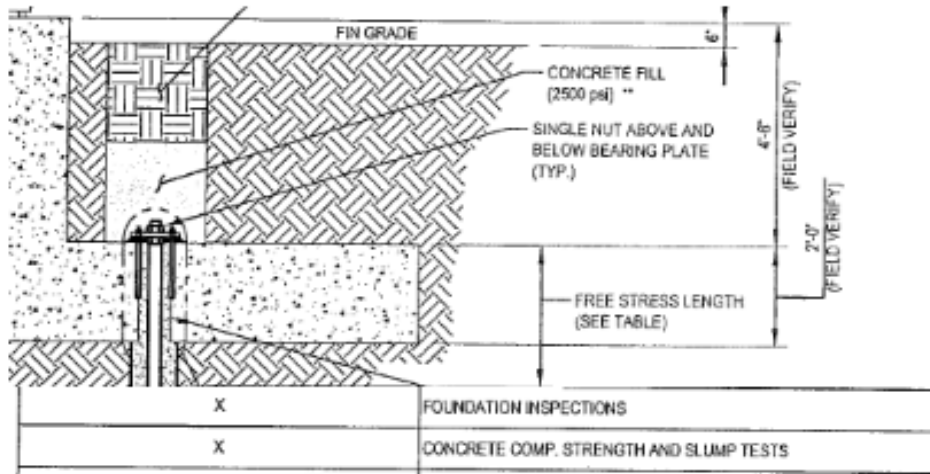


>>> Keith_ Stackhouse <keith_stackhouse@lcc.com> 6/26/2014 4:32 PM >>>
Hello Kyle,

I tried giving you a call to discuss this site,

The MI checklist is asking for a foundation inspection, the crew installed the concrete cap to micro piling without getting an inspection; they collected concrete samples for break testing. I attached the report for your review, can we have the foundation inspection waved off the MI check list.

See photo attached



Thanks,

Keith A. Stackhouse
Structural Construction Manager



LCC Deployment Services
2242 Old Marilton Pike
Marilton, NJ 08053

(Cell) 609-367-6107

keith_stackhouse@lcc.com

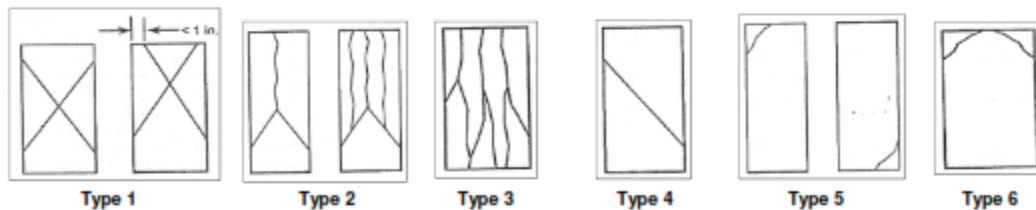
6.2.3 CONCRETE COMP. STRENGTH AND SLUMP TESTS



Job No.: 16029 Project: Newton Rt 25
 Report No.: _____ Location: _____
 Engineer: _____ Client: LCC Deployment Services
 Contractor: _____

GROUT COMPRESSIVE STRENGTH TEST
 ASTM C-39, C-143, C-511, C-617, C-1019, C-1064, C-1093

Location of Material: <u>Job 131670</u>									
Date Cast: <u>5/21/14</u>									
I.D. No.	Client I.D. No.	Age of Specimen (Days)	Date Tested	Specimen Size (ø x H) (In.)	Area of Specimen (In. ²)	Maximum Load (Lbs.)	Compressive Strength (PSI)	Type of Fracture	% of Design Strength
1		30	6/20/14	4x8	12.57	60,170	4,790	4	191.6%
2		30	6/20/14	4x8	12.57	56,970	4,530	4	181.2%
30 Day Avg.:							4,660		186.4%
Strength Required (PSI):			2,500			Time Cast:			
Class of Concrete:						Slump (In.):			
Mix Design Number:						Air Content:			
Concrete Manufacturer:						Concrete Temperature (°F):			
Plant Location:						Ambient Temperature (°F):			
Truck Number:						Unit Weight (PCF):			
Ticket Number:						Defect in Cylinder/Caps:			
Admixtures:									



Sketches of Types of Fracture

Field Technician: _____ Lab Technician: _____

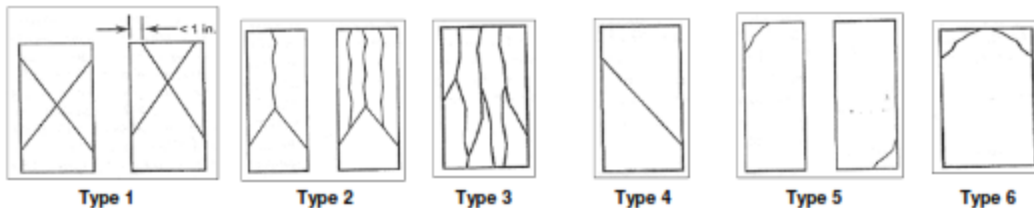
1 N Pavilion Ave
 Riverside, NJ 08075
 (856) 461-1100 (P) (856) 461-3166 (F)
www.ljce.net



Job No.: 16059 Project: Newton Rt 25
 Report No.: _____ Location: _____
 Engineer: _____ Client: LCC Deployment Services
 Contractor: _____

GROUT COMPRESSIVE STRENGTH TEST
 ASTM C-39, C-143, C-511, C-617, C-1019, C-1064, C-1093

Location of Material: <u>Job 131670</u>									
Date Cast: <u>5/22/14</u>									
I.D. No.	Client I.D. No.	Age of Specimen (Days)	Date Tested	Specimen Size (Ø x H) (In.)	Area of Specimen (In. ²)	Maximum Load (Lbs.)	Compressive Strength (PSI)	Type of Fracture	% of Design Strength
3		29	6/20/14	4x8	12.57	55,700	4,430	4	177.2%
Strength Required (PSI): <u>2,500</u>					Time Cast: _____				
Class of Concrete: _____					Slump (In.): _____				
Mix Design Number: _____					Air Content: _____				
Concrete Manufacturer: _____					Concrete Temperature (°F): _____				
Plant Location: _____					Ambient Temperature (°F): _____				
Truck Number: _____					Unit Weight (PCF): _____				
Ticket Number: _____					Defect in Cylinder/Caps: _____				
Admixtures: _____									



Sketches of Types of Fracture

Field Technician: _____ Lab Technician: _____

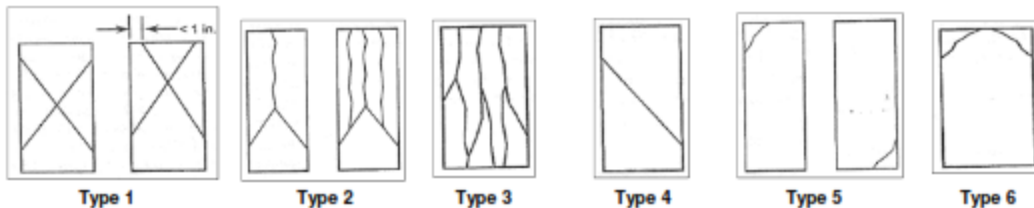
1 N Pavilion Ave
 Riverside, NJ 08075
 (856) 461-1100 (P) (856) 461-3166 (F)
www.ljce.net



Job No.: 16059 Project: Newton Rt 25
 Report No.: _____ Location: _____
 Engineer: _____ Client: LCC Deployment Services
 Contractor: _____

GROUT COMPRESSIVE STRENGTH TEST
 ASTM C-39, C-143, C-511, C-617, C-1019, C-1064, C-1093

Location of Material: <u>Job 131670</u>									
Date Cast: <u>5/23/14</u>									
I.D. No.	Client I.D. No.	Age of Specimen (Days)	Date Tested	Specimen Size (Ø x H) (In.)	Area of Specimen (In. ²)	Maximum Load (Lbs.)	Compressive Strength (PSI)	Type of Fracture	% of Design Strength
4		28	6/20/14	4x8	12.57	59,410	4,730	4	189.2%
Strength Required (PSI): <u>2,500</u>					Time Cast: _____				
Class of Concrete: _____					Slump (In.): _____				
Mix Design Number: _____					Air Content: _____				
Concrete Manufacturer: _____					Concrete Temperature (°F): _____				
Plant Location: _____					Ambient Temperature (°F): _____				
Truck Number: _____					Unit Weight (PCF): _____				
Ticket Number: _____					Defect in Cylinder/Caps: _____				
Admixtures: _____									



Sketches of Types of Fracture

Field Technician: _____ Lab Technician: _____

1 N Pavilion Ave
 Riverside, NJ 08075
 (856) 461-1100 (P) (856) 461-3166 (F)
www.ljce.net

6.2.4 DRILLING LOG

04/28/2014 06:31

5853345042

MICROTEL HENRIETTA

PAGE 03/04



TELECOMMUNICATIONS CONTRACTING CO., INC
 2242 OLD MARLTON PIKE MARLTON, NJ 08053
 856-810-1658 FAX 856-810-1659

DRILLERS LOG

PROJECT NAME: Newtown Rd
 SITE NUMBER: 171670
 DATE: 4-24-14
 Driller: David Campbell

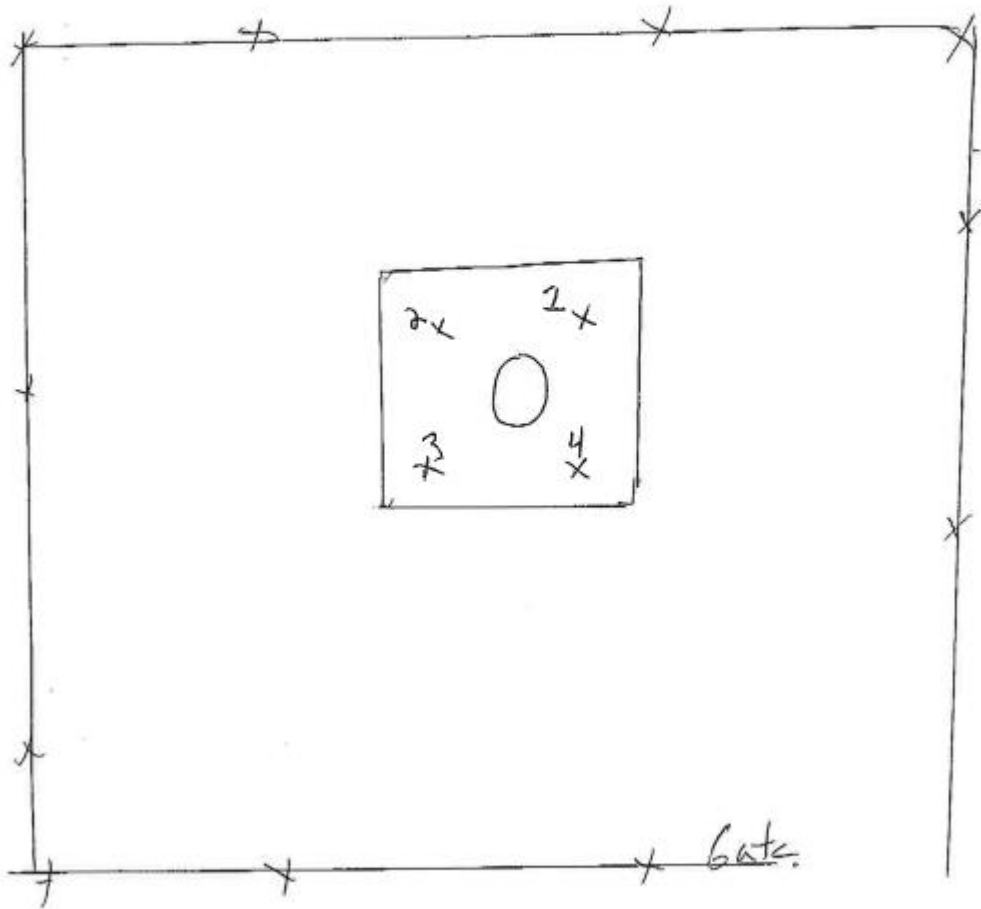
TEMPERATURE: 57
 WEATHER: Clear

DRILL UNIT TYPE	DTH	TOP HEAD	DRIFTER	ROTARY	Pump type	Oberman	chemgroat	schwing	Maco
			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	

LOCATION OR PILE PILE NUMBER	TYPE OF CONTECH	GROUT TYPE	STARTING DEPTH	FINISH DEPTH	TIME IN	TIME OUT	COMMENTS
Example 5	103/78	8000 PSI	GRADE LEVEL	55'			SOFT MATERIAL THEN HIT COBBLES AT 30' AND SWITCHED TO THE DRIFTER DRILL TO ACHIEVE FINAL DEPTH
1	77	Portland +PTC Grout	24				Hard Sand hard at 25'
2	77	Portland Grout	24				Soft Cobbles. 20' hard at 20'
3	77	Portland Grout	24				hard at 28'
4	77	Portland Grout	24				hard at 27'

David Campbell
 DRILLER SIGNATURE

Newtown Rt 25



6.2.5 GC AS-BUILT DOCUMENTS

37513-1642 PERMIT DWG

MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

BU NUMBER; SITE NAME
BU #826222; NEWTOWN/RT-25
 APP: 180205 REV. 3; WO: 600035

SITE ADDRESS
**201 MAIN STREET
 NEWTOWN, CT 06470
 FAIRFIELD COUNTY**

PROJECT NOTES

1. DETAILED FIELD INFORMATION REGARDING INTERFERENCES AND/OR EXISTING FIELD CONDITIONS MAY BE AVAILABLE ON CROWN'S CCISITES AND FROM CONTRACTOR'S PRE-MOD MAPPING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND COORDINATE WITH THE AVAILABLE SOURCES OF INFORMATION ABOVE AND WITH THE PROJECT PLANS BEFORE PROCEEDING WITH THE WORK. CONTRACTOR SHALL IMMEDIATELY REPORT ANY AND ALL DISCREPANCIES TO PAUL J. FORD AND COMPANY AND CROWN CASTLE FIELD PERSONNEL BEFORE PROCEEDING WITH THE WORK.
2. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRETENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.
3. ALL STRUCTURAL BOLTS SHALL BE FIELD INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

PROJECT CONTACTS:

MONOPOLE OWNER:
 CROWN CASTLE
 8 PARKMEADOW DRIVE, PITTSFORD, NY 14534
 CONTACT: STEVE TUTTLE
 PH: (585) 899-3445

STRUCTURAL ENGINEER OF RECORD (EOR):
 PAUL J. FORD AND COMPANY
 250 EAST BROAD STREET, SUITE 600
 COLUMBUS, OHIO 43215-3708
 CONTACT: KYLE THORPE AT KTHORPE@PJFWEB.COM
 PHONE: 614-221-6679

DESIGN STANDARD

THIS REINFORCEMENT DESIGN IS BASED UPON THE REQUIREMENTS OF THE TIA/EIA-222-F-1996 STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, USING A DESIGN BASIC WIND SPEED OF 85 MPH (FASTEST MILE) WITH NO ICE, 37.6 MPH WITH 3/4 INCH ICE AND 50 MPH SERVICE LOADS.

REFER TO THE POLE DESIGN AND ANTENNA LOADING DOCUMENTED IN THE PJF STRUCTURAL ANALYSIS FOR THIS SITE (PJF#37513-1642), DATED 8-20-2013.

THIS PROJECT INCLUDES THE FOLLOWING REINFORCING ELEMENTS:

FOUNDATION AUGMENTATION: MICROPILES

SHEET INDEX

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
S-1	GENERAL NOTES
S-2	GENERAL NOTES
S-3	MONOPOLE PROFILE
S-4	FOUNDATION REINFORCING DETAILS
S-5	MI CHECKLIST



AUG 2 1 2013

**ASBUILT 5-26-14
 R.S.T. LCC DEPLOYMENT**

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PJF PAUL J. FORD AND COMPANY
 STRUCTURAL ENGINEERS
 250 East Broad Street - Suite 600 - Columbus, Ohio 43215
 (614) 221-6679 www.pjfweb.com

CROWN CASTLE
 8 PARKMEADOW DRIVE, PITTSFORD, NY 14534
 PH: (585) 899-3445 FAX: (585) 899-3446

BU #826222; NEWTOWN/RT-25
 NEWTOWN, CT
 MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No:
37513-1642
 DRAWN BY:
B.M.S.
 CHECKED BY:
K.A.T.
 APPROVED BY:
KJ
 DATE:
8-20-2013

ISSUE DATE OF PERMIT: 8-20-2013

T-1

CROWN CASTLE PROJECT: BU #826222; NEWTOWN/RT-25; NEWTOWN, CT
MONOPOLE RETROFIT PROJECT MASTER NOTES DOCUMENT (REV. 2, 12/22/09)

A. GENERAL NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION. THESE DRAWINGS WERE PREPARED FROM INFORMATION AND DOCUMENTS PROVIDED TO PAUL J. FORD & COMPANY BY CROWN CASTLE. THIS INFORMATION PROVIDED HAS NOT BEEN FIELD VERIFIED BY PAUL J. FORD & COMPANY FOR ACCURACY AND THEREFORE DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL SITE CONDITIONS SHOULD BE ANTICIPATED. ANY DISCREPANCIES AND/OR CHANGES BETWEEN THE INFORMATION CONTAINED IN THESE DRAWINGS AND THE ACTUAL VERIFIED SITE CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF CROWN CASTLE AND PAUL J. FORD & COMPANY SO THAT ANY CHANGES AND/OR ADJUSTMENTS, IF NECESSARY, CAN BE MADE TO THE DESIGN AND DRAWINGS.
- THE EXISTING UNREINFORCED MONOPOLE STRUCTURE DOES NOT HAVE THE STRUCTURAL CAPACITY TO CARRY ALL OF THE ANTENNA AND PLATFORM LOADS SHOWN ON THESE DRAWINGS AT THE REQUIRED MINIMUM TIA/EIA-222-F BASIC WIND SPEEDS. DO NOT INSTALL ANY ADDITIONAL OR NEW ANTENNA AND PLATFORM LOADS UNTIL THE MONOPOLE REINFORCING SYSTEM IS COMPLETELY AND SUCCESSFULLY INSTALLED.
- IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.
- THIS STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE INSTALLATION OF THE REINFORCING REPAIR SYSTEM HAS BEEN PROPERLY AND ADEQUATELY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO INSURE THE SAFETY AND STABILITY OF THE MONOPOLE AND ITS COMPONENT PARTS DURING FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER 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. IMPORTANT CUTTING, WELDING AND SAFETY GUIDELINES: THE CONTRACTOR SHALL FOLLOW ALL CROWN CASTLE CUTTING, WELDING, FIRE PREVENTION AND SAFETY GUIDELINES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A COPY OF THE CURRENT CROWN CASTLE GUIDELINES FROM CROWN CASTLE. PER THE 4-24-2005 CROWN CASTLE DIRECTIVE: "ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CROWN CASTLE POLICY CUTTING AND WELDING PLAN (DOC # ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE DURATION OF THE PROJECT."
- THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS 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 INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
- ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY THE INSPECTION/TESTING AGENCY. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- ALL MATERIALS AND EQUIPMENT FURNISHED WILL 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 MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK AS WELL AS CROWN CASTLE SAFETY GUIDELINES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW COAXIAL CABLES AND OTHER EQUIPMENT DURING CONSTRUCTION.
- ANY EXISTING ATTACHMENTS AND/OR PROJECTIONS ON THE POLE THAT MAY INTERFERE WITH THE INSTALLATION OF THE REINFORCING SYSTEM WILL HAVE TO BE REMOVED, AND/OR RELOCATED, AND/OR REPLACED AND RE-INSTALLED AFTER THE REINFORCING IS SUCCESSFULLY COMPLETED. THE CONTRACTOR SHALL IDENTIFY AND COORDINATE THESE ITEMS PRIOR TO CONSTRUCTION WITH THE OWNER, TESTING AGENCY, AND ENGINEER.
- ANY AND ALL EXISTING PLATFORMS THAT ARE LOCATED IN AREAS OF THE POLE SHAFT WHERE SHAFT REINFORCING MUST BE APPLIED SHALL BE TEMPORARILY REMOVED OR OTHERWISE SUPPORTED TO PERMIT NEW CONTINUOUS REINFORCEMENT TO BE ATTACHED. AFTER THE CONTRACTOR HAS SUCCESSFULLY INSTALLED THE MONOPOLE REINFORCEMENT SYSTEM, THE CONTRACTOR SHALL RE-INSTALL THE PLATFORMS. IN NO CASE SHALL ANY NEW AND/OR ADDITIONAL PLATFORMS AND/OR ANTENNAS AND/OR COAX CABLES AND/OR OTHER EQUIPMENT BE INSTALLED ON THE MONOPOLE UNTIL THE CONTRACTOR HAS SUCCESSFULLY COMPLETED THE INSTALLATION OF ALL OF THE REQUIRED STRUCTURAL REINFORCING SYSTEM COMPONENTS.

B. (SECTION NOT USED)

C. SPECIAL INSPECTION AND TESTING

- ALL WORK SHALL BE SUBJECT TO REVIEW AND OBSERVATION BY THE OWNER'S REPRESENTATIVE AND THE OWNER'S AUTHORIZED INDEPENDENT INSPECTION AND TESTING AGENCY. REFER TO CROWN CASTLE DOCUMENT ENG-SOW-10066 FOR SPECIFICATION.
 - ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL, AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
 - OBSERVED DISCREPANCIES BETWEEN THE WORK AND THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
 - AN INDEPENDENT QUALIFIED INSPECTION/TESTING AGENCY SHALL BE SELECTED, RETAINED AND PAID FOR BY THE OWNER FOR THE SOLE PURPOSE OF INSPECTING, TESTING, DOCUMENTING, AND APPROVING ALL WELDING AND FIELD WORK PERFORMED BY THE CONTRACTOR.
 - ACCESS TO ANY PLACE WHERE WORK IS BEING DONE SHALL BE PERMITTED AT ALL TIMES.
 - THE INSPECTION AGENCY SHALL SO SCHEDULE THIS WORK AS TO CAUSE A MINIMUM OF INTERRUPTION TO, AND COORDINATE WITH, THE WORK IN PROGRESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK SCHEDULE WITH THE TESTING AGENCY. THE CONTRACTOR SHALL ALLOW FOR ADEQUATE TIME AND ACCESS FOR THE TESTING AGENCY TO PERFORM THEIR DUTIES.
 - THE INSPECTION AND TESTING AGENCY SHALL BE RESPONSIBLE TO PERFORM THE FOLLOWING SERVICES FOR THE OWNER. THE TESTING AGENCY SHALL INSPECT THE FOLLOWING ITEMS IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. THE TESTING AGENCY SHALL INSPECT ITEMS ON THIS LIST AND OTHER ITEMS AS NECESSARY TO FULFILL THEIR RESPONSIBILITY. THE TESTING AGENCY SHALL UTILIZE EXPERIENCED, TRAINED INSPECTORS INCLUDING AWS CERTIFIED WELDING INSPECTORS (CWI). INSPECTORS SHALL HAVE THE TRAINING, CREDENTIALS, AND EXPERIENCE APPROPRIATE FOR AND COMMENSURATE WITH THE SCOPE AND TYPE OF INSPECTION WORK TO BE PERFORMED.
 - GENERAL:
 - PERFORM CONTINUOUS ON-SITE OBSERVATION, INSPECTION, VERIFICATION, AND TESTING DURING THE TIME THE CONTRACTOR IS WORKING ON-SITE. AGENCY SHALL NOTIFY OWNER IMMEDIATELY WHEN FIELD PROBLEMS OR DISCREPANCIES OCCUR.
 - FOUNDATIONS, CONCRETE, AND SOIL PREPARATION - (NOT REQUIRED)
 - CONCRETE TESTING PER A.C.I. - (NOT REQUIRED)
 - STRUCTURAL STEEL:
 - CHECK THE STEEL ON THE JOB WITH THE PLANS.
 - CHECK MILL CERTIFICATIONS.
 - CHECK GRADE OF STEEL MEMBERS AND BOLTS FOR CONFORMANCE WITH DRAWINGS.
 - INSPECT STEEL MEMBERS FOR DISTORTION, EXCESSIVE RUST, FLAWS AND BURNED HOLES.
 - CALL FOR LABORATORY TEST REPORTS WHEN IN DOUBT.
 - CHECK STEEL MEMBERS FOR SIZES, SHEEP AND DIMENSIONAL TOLERANCES.
 - CHECK FOR SURFACE FINISH SPECIFIED, GALVANIZED.
 - CHECK BOLT TIGHTENING ACCORDING TO AISC TURN OF THE NUT METHOD.
 - WELDING - (NOT REQUIRED)
 - SPECIAL INSPECTORS OF EXISTING SHAFT-TO-FLANGE WELD CONNECTIONS - (NOT REQUIRED)
 - REPORTS:
 - COMPLETE AND PERIODICALLY SUBMIT DAILY INSPECTION REPORTS TO THE OWNER.
6. THE INSPECTION PLAN OUTLINED HEREIN IS INTENDED AS A DESCRIPTION OF GENERAL AND SPECIFIC ITEMS OF CONCERN. IT IS NOT INTENDED TO BE ALL-INCLUSIVE. IT DOES NOT LIMIT THE TESTING AND INSPECTION AGENCY TO THE ITEMS LISTED. ADDITIONAL TESTING, INSPECTION, AND CHECKING MAY BE REQUIRED AND SHOULD BE ANTICIPATED. THE TESTING AGENCY SHALL USE THEIR PROFESSIONAL JUDGMENT AND KNOWLEDGE OF THE JOB SITE CONDITIONS AND THE CONTRACTOR'S PERFORMANCE TO DECIDE WHAT OTHER ITEMS REQUIRE ADDITIONAL ATTENTION. THE TESTING AGENCY'S JUDGMENT MUST PREVAIL ON ITEMS NOT SPECIFICALLY COVERED. ANY DISCREPANCIES AND PROBLEMS SHALL BE BROUGHT IMMEDIATELY TO THE OWNER'S ATTENTION. RESOLUTIONS ARE NOT TO BE MADE WITHOUT THE OWNER'S REVIEW AND SPECIFIC WRITTEN CONSENT. THE OWNER RESERVES THE RIGHT TO DETERMINE WHAT IS AN ACCEPTABLE RESOLUTION OF DISCREPANCIES AND PROBLEMS.
- AFTER EACH INSPECTION, THE TESTING AGENCY WILL PREPARE A WRITTEN ACCEPTANCE OR REJECTION WHICH WILL BE GIVEN TO THE CONTRACTOR AND FILED AS DAILY REPORTS TO THE OWNER. THIS WRITTEN ACTION WILL GIVE THE CONTRACTOR A LIST OF ITEMS TO BE CORRECTED, PRIOR TO CONTINUING CONSTRUCTION, AND/OR LOADING OF STRUCTURAL ITEMS.
 - RESPONSIBILITY: THE TESTING AGENCY DOES NOT RELIEVE THE CONTRACTOR'S CONTRACTUAL OR STATUTORY OBLIGATIONS. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE OFFICIAL CONTRACT DOCUMENTS. THE TESTING AGENCY WILL NOT REPLACE THE CONTRACTOR'S QUALITY CONTROL PERSONNEL.



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BU #826222; NEWTOWN/RT-25
NEWTOWN, CT
MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No: 37533-1642	ISSUE DATE OF PERMIT: 8-20-2013
DRAWN BY: B.M.S.	S-1
CHECKED BY: K.A.T.	
APPROVED BY: KH	
DATE: 8-20-2013	

<p>D. STRUCTURAL STEEL</p> <p>1. STRUCTURAL STEEL MATERIALS, FABRICATION, DETAILING, AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING REFERENCE STANDARDS: BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC):</p> <p>(A) "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS"</p> <p>(B) "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS," AS APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION.</p> <p>(C) "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (PARAGRAPH 4.2.1 SPECIFICALLY EXCLUDED).</p> <p>2. BY THE AMERICAN WELDING SOCIETY (AWS):</p> <p>(A) "STRUCTURAL WELDING CODE" STEEL D1.1 "</p> <p>(B) "SYMBOLS FOR WELDING AND NON-DESTRUCTIVE TESTING"</p> <p>3. ANY MATERIAL OR WORKMANSHIP WHICH IS OBSERVED TO BE DEFECTIVE OR INCONSISTENT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED, MODIFIED, OR REPLACED AT THE CONTRACTOR'S EXPENSE.</p> <p>4. TIGHTEN ALL STRUCTURAL BOLTS, INCLUDING THE AJAX M20 BOLTS WITH SHEAR SLEEVES, ACCORDING TO THE REQUIREMENTS OF THE AISC "TURN OF THE NUT" METHOD. TIGHTEN BOLTS 1/3 TURN PAST THE SHAG TIGHT CONDITION AS DEFINED BY AISC.</p> <p>5. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVERSE CODE OF THE AMERICAN WELDING SOCIETY, AWS D1.1. ALL WELD ELECTRODES SHALL BE E80XX UNLESS NOTED OTHERWISE ON THE DRAWINGS.</p> <p>6. ALL WELDED CONNECTIONS SHALL BE MADE BY WELDERS CERTIFIED BY AWS. CONTRACTOR SHALL SUBMIT WELDERS' CERTIFICATION AND QUALIFICATION DOCUMENTATION TO THE OWNER'S TESTING AGENCY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.</p> <p>7. STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A572 GRADE 65 (FY = 65 KSI MIN.) UNLESS NOTED OTHERWISE ON THE DRAWINGS.</p> <p>8. SURFACES OF EXISTING STEEL SHALL BE PREPARED AS REQUIRED FOR FIELD WELDING PER AWS. SEE SECTION J NOTES REGARDING TOUCH-UP OF GALVANIZED SURFACES DAMAGED DURING TRANSPORTATION OR ERECTION AND ASSEMBLY AS WELL AS FIELD WELDING.</p> <p>9. UNLESS OTHERWISE NOTED, ALL STEEL MEMBERS SHALL BE HOT DIP GALVANIZED, AFTER FABRICATION, IN ACCORDANCE WITH ASTM A123. SEE SECTION J FOR FURTHER NOTES AND FOR EXCEPTIONS (IF ANY).</p> <p>10. ALL WELDS SHALL BE VISUALLY INSPECTED BY THE OWNER'S APPROVED TESTING AGENCY. OTHER TESTS MAY ALSO BE PERFORMED ON THE WELDS BY THE TESTING AGENCY IN ORDER FOR THEM TO PERFORM THEIR DUTIES FOR THIS PROJECT. THE CONTRACTOR SHALL COOPERATE WITH THE TESTING AGENCY IN THEIR TESTING EFFORTS.</p> <p>11. NO WELDING SHALL BE DONE TO THE EXISTING STRUCTURE WITHOUT THE PRIOR APPROVAL AND SUPERVISION OF THE TESTING AGENCY.</p> <p>12. FIELD CUTTING OF STEEL:</p> <p>(A) PRIOR TO ANY FIELD CUTTING, THE CONTRACTOR SHALL MARK THE CUT OUTLINES ON THE STEEL AND THE INSPECTION/TESTING AGENCY SHALL VERIFY PROPOSED LAYOUT, LOCATION, AND DIMENSIONS.</p> <p>(B) ANY REQUIRED CUTS IN THE STEEL SHALL BE CAREFULLY CUT BY MECHANICAL METHODS SUCH AS DRILLING, SAW CUTTING, AND GRINDING. THE CONTRACTOR IS RESPONSIBLE TO PREVENT ANY DAMAGE TO THE COAX CABLES, AND/OR OTHER EQUIPMENT AND/OR THE STRUCTURE, DURING THE CUTTING WORK. ANY DAMAGE TO THE COAX CABLES, AND/OR OTHER EQUIPMENT AND/OR THE STRUCTURE, RESULTING FROM THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE INSPECTION/TESTING AGENCY SHALL CLOSELY AND CONTINUOUSLY MONITOR THIS ACTIVITY.</p> <p>(C) ALL REQUIRED CUTS SHALL BE CUT WITHIN THE DIMENSIONS SHOWN ON THE DRAWINGS. NO CUTS SHALL EXTEND BEYOND THE OUTLINE OF THE DIMENSIONS SHOWN ON THE DRAWINGS. ALL CUT EDGES SHALL BE GRIND SMOOTH AND DE-BURRED. CUT EDGES THAT ARE TO BE FIELD WELDED SHALL BE PREPARED FOR FIELD WELDING PER AWS D1.1 AND AS SHOWN ON THE DRAWINGS. IT MAY BE NECESSARY TO DRILL STARTER HOLES AS REQUIRED TO MAKE THE CUTS. THE INSPECTION/TESTING AGENCY SHALL CLOSELY AND CONTINUOUSLY MONITOR THIS ACTIVITY.</p> <p>E. BASE PLATE GROUT - (NOT REQUIRED)</p> <p>F. FOUNDATION WORK</p> <p>1. THE CONTRACTOR SHALL PROTECT THE EXISTING MONOPOLE STRUCTURE, AS WELL AS ANY OTHER NEARBY EXISTING FOUNDATIONS FOR OTHER STRUCTURES OR EQUIPMENT, FROM LOSS OF SOIL AROUND AND/OR BENEATH FOOTINGS DURING ANY REQUIRED EXCAVATION. THE CONTRACTOR SHALL BRACE THE SIDES OF THE OPEN EXCAVATION AS REQUIRED.</p> <p>2. THE EFFECT OF ADDITIONAL EXCAVATION (WHERE REQUIRED) FOR THE NEW MAT FOOTING (WHERE REQUIRED) OR OTHER FOUNDATION ARGUMENTATION AND REINFORCING (WHERE REQUIRED) MAY HAVE IMPACT ON EXISTING EQUIPMENT AND/OR OTHER EXISTING STRUCTURES NEAR THE EXCAVATION. (ENGINEER-OR-RECORD) HAS NOT BEEN PROVIDED WITH ANY SPECIFIC INFORMATION OR DETAILS REGARDING EXISTING EQUIPMENT OR OTHER EXISTING STRUCTURES ON THE SITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE IMPACT OR EFFECT THAT ANY REQUIRED EXCAVATION (WHERE REQUIRED) HAS NOT BEEN PROVIDED WITH ANY SPECIFIC INFORMATION OR DETAILS REGARDING EXISTING EQUIPMENT OR OTHER EXISTING STRUCTURES ON THE SITE. THE CONTRACTOR SHALL COORDINATE THIS SITE-SPECIFIC INFORMATION WITH THE OWNER AND TESTING AGENCY PRIOR TO CONSTRUCTION AND FOUNDATION WORK. THE CONTRACTOR SHALL ADEQUATELY BRACE, SHORE, AND/OR RELOCATE (AFTER OBTAINING THE PRIOR WRITTEN PERMISSION OF THE OWNER), AS NECESSARY, THE INTERFERING EXISTING NEARBY EQUIPMENT AND/OR STRUCTURES.</p>	<p>G. CAST-IN-PLACE CONCRETE</p> <p>1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.</p> <p>(A) CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED (BY +/- 1.5%).</p> <p>(B) WATER-CEMENT RATIO = 0.52 (MAXIMUM).</p> <p>2. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60.</p> <p>3. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318, LATEST EDITION.</p> <p>4. CONTRACTOR SHALL FOLLOW ALL APPLICABLE ACI PROCEDURES FOR COLD WEATHER CONCRETE PLACEMENT.</p> <p>5. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.</p> <p>6. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL OPENINGS, SLEEVES, ANCHOR RODS, INSERTS, ETC., AS REQUIRED BEFORE CONCRETE IS PLACED.</p> <p>7. WHERE BAR LENGTHS ARE GIVEN ON ANY HOOK, IF REQUIRED, IS NOT INCLUDED.</p> <p>8. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC., NECESSARY TO SUPPORT REINFORCING STEEL CHAIRS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL.</p> <p>9. ALL STRUCTURAL MEMBERS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR REQUIRED CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT PROPOSED CONSTRUCTION JOINT LOCATIONS AND DETAILS TO THE ENGINEER FOR REVIEW.</p> <p>10. CONTRACTOR SHALL PROVIDE 3/4-INCH CHAMFER ON ALL EXPOSED CORNERS UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED AS SPECIFIED BY ACI.</p> <p>11. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:</p> <p>2" CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH</p> <p>1-1/2" CONCRETE EXPOSED TO EARTH OR WEATHER, #5 THROUGH #18 BARS</p> <p>1-1/2" CONCRETE EXPOSED TO EARTH OR WEATHER, #5 BAR AND SMALLER.</p> <p>12. FOOTING BARS SHALL BE BENT 1-6" AROUND CORNERS, OR PROVIDE CORNER BARS WITH A 2'-0" LAP ON EACH LEG.</p> <p>13. TESTING LABORATORY SHALL SUBMIT ONE COPY OF ALL CONCRETE TEST REPORTS DIRECTLY TO THE ENGINEER.</p> <p>14. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL," (ACI PUBLICATION SP-15, LATEST EDITION) AT THE PROJECT FIELD OFFICE.</p> <p>15. FLY ASH SHALL BE PERMITTED. FLY ASH CONTENT SHALL BE A MAXIMUM OF 25% OF CEMENT WEIGHT.</p> <p>H. EPOXY GROUTED REINFORCING ANCHOR RODS - (NOT REQUIRED)</p> <p>I. TOUCH UP OF GALVANIZING - (NOT REQUIRED)</p> <p>J. HOT DIP GALVANIZING - (NOT REQUIRED)</p> <p>K. PERPETUAL INSPECTION AND MAINTENANCE BY THE OWNER</p> <p>1. AFTER THE CONTRACTOR HAS SUCCESSFULLY COMPLETED THE INSTALLATION OF THE MONOPOLE REINFORCING SYSTEM AND THE WORK HAS BEEN ACCEPTED BY THE OWNER, THE OWNER WILL BE RESPONSIBLE FOR THE LONG TERM AND PERPETUAL INSPECTION AND MAINTENANCE OF THE POLE AND REINFORCING SYSTEM.</p> <p>2. THE MONOPOLE REINFORCING SYSTEM INDICATED IN THESE DOCUMENTS USES REINFORCING COMPONENTS THAT INVOLVE FIELD WELDING STEEL MEMBERS TO THE EXISTING GALVANIZED STEEL POLE STRUCTURE. THESE FIELD WELDED CONNECTIONS ARE SUBJECT TO CORROSION DAMAGE AND DETERIORATION IF THEY ARE NOT PROPERLY MAINTAINED AND COVERED WITH CORROSION PREVENTIVE COATING SUCH AS THE ZRC GALVANIZING COMPOUND SPECIFIED PREVIOUSLY. THE STRUCTURAL LOAD CARRYING CAPACITY OF THE REINFORCED POLE SYSTEM IS DEPENDENT UPON THE INSTALLED SIZE AND QUALITY, MAINTAINED SOUND CONDITION AND STRENGTH OF THESE FIELD WELDED CONNECTIONS. ANY CORROSION OF, DAMAGE TO, FATIGUE, FRACTURE, AND/OR DETERIORATION OF THESE WELDS AND/OR THE CONNECTED COMPONENTS WILL RESULT IN THE LOSS OF STRUCTURAL LOAD CARRYING CAPACITY AND MAY LEAD TO FAILURE OF THE STRUCTURAL SYSTEM. THEREFORE, IT IS IMPERATIVE THAT THE OWNER REGULARLY INSPECTS, MAINTAINS, AND REPAIRS AS NECESSARY, ALL OF THESE WELDS, CONNECTIONS, AND COMPONENTS FOR THE LIFE OF THE STRUCTURE.</p> <p>3. THE OWNER SHALL REFER TO TIA/EIA-222-F-1996, SECTION 14 AND ANNEX E FOR RECOMMENDATIONS FOR MAINTENANCE AND INSPECTION. THE FREQUENCY OF THE INSPECTION AND MAINTENANCE INTERVALS IS TO BE DETERMINED BY THE OWNER BASED UPON ACTUAL SITE AND ENVIRONMENTAL CONDITIONS. PAUL J. FORD & COMPANY RECOMMENDS THAT A COMPLETE AND THOROUGH INSPECTION OF THE ENTIRE REINFORCED MONOPOLE STRUCTURAL SYSTEM BE PERFORMED YEARLY AND/OR AS FREQUENTLY AS CONDITIONS WARRANT. ACCORDING TO TIA/EIA-222-F-1996 SECTION 14.1, NOTE 1: "IT IS RECOMMENDED THAT THE STRUCTURE BE INSPECTED AFTER SEVERE WIND AND/OR ICE STORMS OR OTHER EXTREME LOADING CONDITIONS."</p>
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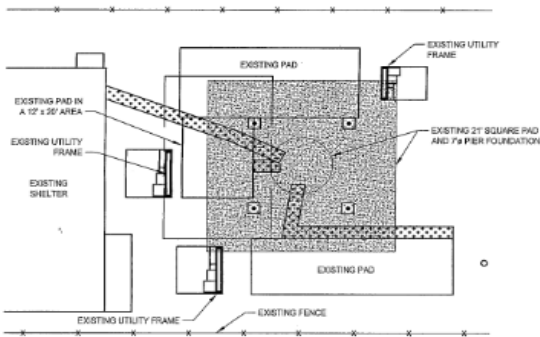
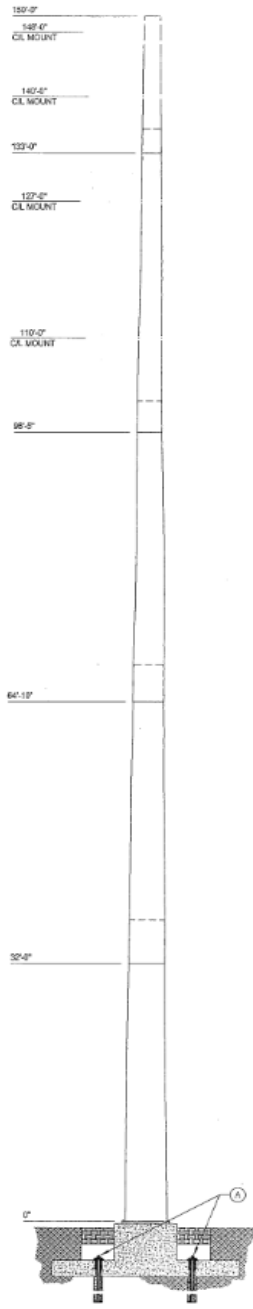
<p>PAUL J. FORD AND COMPANY 250 East Broad Street - Suite 600 - Colchester, CT 06430 (203) 221-9979 www.pjfo.com</p> <p>CROWN CASTLE 5 PARKMEADOW DRIVE, PITTSFORD, NY 14253 PH: (608) 826-3446 FAX: (608) 826-3448</p>	<p>BU #826222; NEWTOWN/RT-25 NEWTOWN, CT MONOPOLE REINFORCEMENT AND RETROFIT PROJECT</p>	<p>PROJECT No: 37513-1642</p> <p>DRAWN BY: B.M.S.</p> <p>CHECKED BY: K.A.T.</p> <p>APPROVED BY: KH</p> <p>DATE: 8-20-2013</p>
		<p>ISSUE DATE OF PERMIT: 8-20-2013</p> <p style="font-size: 2em; font-weight: bold;">S-2</p>

POLE SPECIFICATIONS					
POLE SHAPE TYPE: 18-SIDED POLYGON					
TAPER: 0.244439 IN/FT					
SHAFT STEEL: ASTM A572 GRADE 65					
BASE PL. STEEL: ASTM A572 GRADE 50					
ANCHOR ROD: 1 1/4" ASTM A36					
SHAFT SECTION DATA					
SHAFT SECTION	SECTION LENGTH (FT)	PLATE THICKNESS (IN)	LAP SPLICE (IN)	DIAMETER ACROSS FLATS (IN)	
				@ TOP	@ BOTTOM
1	17.00	0.2500	35.46	21.830	26.093
2	37.50	0.3125	48.10	24.779	34.093
3	37.50	0.3750	58.42	32.494	41.753
4	37.50	0.3750	58.42	35.933	45.063
5	37.50	0.3750	95.00	45.963	56.123

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

MODIFICATIONS:

(A) INSTALL (4) NEW MICROPILES IN EXISTING FOUNDATION. SEE SHEET S-4 & S-6.



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BU #826222; NEWTOWN/RT-25
NEWTOWN, CT
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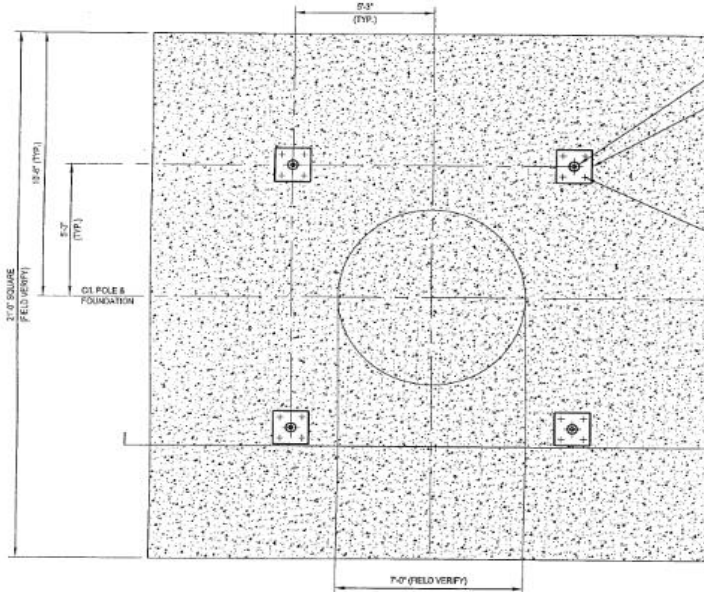
S-3

MICROPILE TESTING REQUIREMENTS

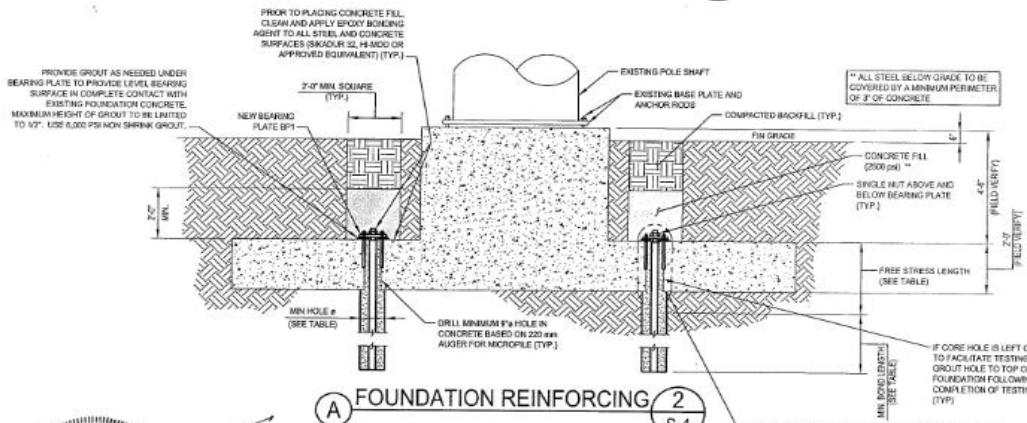
A MINIMUM OF 7 SURFACE MICROPILES (TEST PILES SHALL BE IN OPPOSITE CORNERS) ARE TO BE TESTED TO 200% IN TENSION. ALL PILE TESTING SHALL BE CARRIED OUT IN GENERAL CONFORMANCE WITH ASTM D3689. A HYDRAULIC JACK MAY BE SUBSTITUTED FOR THE PILE TESTING SET-UPS SHOWN IN THE ASTM SPICES. IF A HYDRAULIC JACK IS USED, FOLLOW EQUIPMENT GUIDELINES DISCUSSED IN THE "POST TENSIONING INSTITUTE" RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS' DESIGN GUIDE, SECTION 8.2. PILES SHALL BE LOADED USING PTFES PROOF TEST METHODOLOGY (REFER TO SECTION 6.3.3 OF THE PTF DESIGN GUIDE. ALIGNMENT LOAD, AL, SHALL BE 18 KIPLS DESIGN LOAD, DL, IS 156 KIPLS). PROVISION SHALL BE MADE TO ALLOW FOR MOVEMENT BETWEEN MICROPILE CROSS-SECTION AND SOIL SO THAT GROUT-TO-SOIL BOND LINE IS ACCURATELY TESTED.

**CONTECH'S 73/53
HOLLOW BAR MICROPILE
OR EQUIVALENT SYSTEM.**

TAKE ALL MEASURES NECESSARY TO AVOID DAMAGING EXISTING REINFORCING BARS DURING DRILLING OPERATIONS. NOTIFY PAUL J. FORD AND COMPANY IMMEDIATELY IF EXISTING REINFORCING BARS ARE ENCOUNTERED AND INTERFERE WITH PLACEMENT OF NEW PILES. UNIFORM ADJUSTMENT TO PROPOSED LOCATION OF NEW PILES MAY BE REQUIRED.



(A) FOUNDATION REINFORCING PLAN 1 S-4



(A) FOUNDATION REINFORCING 2 S-4



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**BU #826222; NEWTOWN/RT-25
NEWTOWN, CT
MONOPOLE REINFORCEMENT AND RETROFIT PROJECT**

PROJECT No: 37513-1642
DRAWN BY: B.M.S.
CHECKED BY: K.A.T.
APPROVED BY: KH
DATE: 8-20-2013

ISSUE DATE OF PERMIT: 8-20-2013
S-4

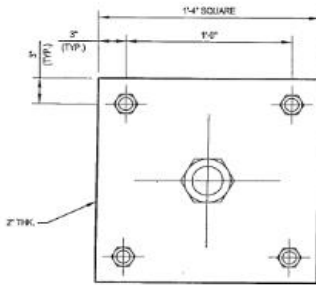
MICROPILE NOTES:

1. ALL HOLLOW BAR STEEL AND ASSOCIATED HARDWARE SHALL BE SUPPLIED BY CON-TECH SYSTEMS OR OTHERWISE APPROVED EQUIVALENT.
2. ALL HOLLOW BAR, NUTS AND BEARING PLATES SHALL BE HOT-DIP GALVANIZED PER ASTM A123 OR A153, AS APPROPRIATE.
3. CONTACT CON-TECH SYSTEMS (OR MANUFACTURER OF APPROVED ALTERNATE) FOR MATERIALS AND INSTALLATION PROCEDURES AND RECOMMENDATIONS.
4. SPECIAL INSPECTION OF THE MICROPILE IS REQUIRED AS FOLLOWS: (1) VERIFY THAT MICROPILE MATERIAL, SIZE AND LENGTH COMPLY WITH THE INFORMATION SHOWN ON THIS DRAWING. (2) VERIFY PLACEMENT OF EACH MICROPILE. (3) OBSERVE DRILLING, GROUTING AND TESTING (AS APPROPRIATE) OPERATIONS FOR EACH MICROPILE AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH MICROPILE.
5. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY FDI, PROJECT NO. 1365751001, DATED 8/19/13.
6. CONTACT CONTECH SYSTEMS (OR MANUFACTURER OF APPROVED ALTERNATE) TO VERIFY NUT & WASHER CONNECTION ARE COMPATIBLE WITH MICROPILE THREADS.
7. ALL MICROPILE SHALL BE GROUTED FOR FULL HEIGHT. GROUT TO BE 4,000 PSI MIN COMPRESSIVE STRENGTH WITH 0.5 (MAXIMUM WATER/CEMENT) W/C RATIO (TO BE COLLOIDALLY MIXED FOR MICROPILE).

PRELIMINARY PILE DESIGN PARAMETER SCHEDULE*

PARAMETER OPTIONS	MIN. HOLE w/STEEL AREA	ALLOWABLE PILE CAPACITY (kips)	ULTIMATE SKIN FRICTION (PSI)	FREE STRESS LENGTH	FRICTION DEVELOPMENT LENGTH/BOND LENGTH	ROCK SOCKET/PLUNGE LENGTH	TOTAL EMBEDMENT LENGTH
MICROPILE	10.5" 2.51 in ² MIN	155K	SEE GEOTECH REPORT	0'	27' MIN.	N.A.	37' MIN.

* THE FINAL DESIGN GROUT DIAMETER IS BASED ON A MINIMUM 22MM AUGER IN SILTY SAND. THE DESIGN REQUIRES UNCASED MICROPILES FOR THE LISTED CAPACITY IN TENSION AND COMPRESSION AS LAD OUT PER PLAN. THE CONTRACTOR/MICROPILE INSTALLER IS RESPONSIBLE FOR THE MEANS AND METHODS TO ENSURE THE NECESSARY CAPACITY AND WILL DEMONSTRATE THE INSTALLED CAPACITY PER THE SPECIFIED TESTING. THE EMBEDMENT DEPTH AND AUGER/PILOT DIAMETERS ARE LISTED AS A PRELIMINARY BASIS FOR BIDDING. THE INTENT IS FOR THE INSTALLER TO REVIEW THE CURRENT SOIL INFORMATION AND DESIGN REQUIREMENTS TO ENSURE THAT THE CONTRACTOR'S SPECIFIC EQUIPMENT OR INSTALLATION TECHNIQUE IS APPROPRIATE. IF THE CONTRACTOR BELIEVES THE SCOPE SHOULD CHANGE UPON REVIEW, PLEASE ADDRESS PRIOR TO BIDDING. AS REQUIRED, PLEASE COORDINATE WITH ENGINEER OF RECORD PRIOR TO INSTALLATION.



NEW BEARING PLATE MK~BP1
(P=40 KSI) (TYP. 4 LOCATIONS)



AUG 2 1 2013

ASBUILT 5-26-14
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BU #826222; NEWTOWN/RT-25
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MODIFICATION INSPECTION NOTES

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

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

ALL MIs SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE VENDOR (AESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE ENG-504-19173 LIST OF APPROVED MI VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A P.O. IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROMPTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR GROWTH POINT OF CONTACT (GPC).

REFER TO ENG-SOIV-10007 - MODIFICATION INSPECTION SOP FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR

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

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

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

GENERAL CONTRACTOR

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

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

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOIV-10007.

RECOMMENDATIONS

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

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLE 16, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTIONS TO COME WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DISCREPANCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON-SITE.

CANCELLATION OR DELAYS IN SCHEDULE MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LOGGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MIS

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

MI VERIFICATION INSPECTIONS

CROWN RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTIONS ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOIV-10007.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADVISORY FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

PHOTOGRAPHS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT/ MODIFICATION CONSTRUCTION/ERECTOR AND INSPECTION
 - ROW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - WELD PREPARATION
 - BOLT INSTALLATION AND TORQUE
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
 - FINAL IN-FIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOIV-10007.



AUG 2 1 2013

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MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWINGS
X	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
NA	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS: PRIOR TO CONSTRUCTION. CONTRACTOR SHALL SUBMIT FILE INSTALLATION AND TESTING PLAN TO CROWN AND P.U.F FOR REVIEW. TESTING PLAN SHALL INCLUDE DETAILS REGARDING HOW CONTRACTOR INTENDS TO PREVENT INTERACTION BETWEEN THE TEST FILE AND THE EXISTING FOUNDATION DURING TESTING.	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	FOUNDATION INSPECTIONS
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
NA	CONTRACTORS CERTIFIED WELD INSPECTION
NA	EARTHWORK: LIFT AND DENSITY
NA	ON SITE COLD GALVANIZING VERIFICATION
X	GC AS-BUILT DOCUMENTS
NA	THIRD PARTY ON-SITE INSPECTION OF BOLT PRETENSION PER CROWN REQUIREMENTS
NA	INSPECTION OF A-JACK BOLTS AND OTFS PER REQUIREMENTS ON SHEET 5-3
ADDITIONAL TESTING AND INSPECTIONS: VERIFY MICROPILE INSTALLATION DETAILS, SPECIFICALLY MICROPILE SIZES, DRILL HOLE DIAMETERS & DEPTHS, GROUT Fc AND THAT INSTALLATION WAS PER MANUFACTURER RECOMMENDATION	
POST-CONSTRUCTION	
X	MI INSPECTOR RESUME OR RECORD DRAWINGS(S)
NA	THIRD PARTY ON-SITE BOLT INSPECTION REPORT
NA	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS: PROVIDE REPORT DOCUMENTING RESULTS OF MICROPILE INSTALLATION AND PROOF TESTING	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT
NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

Vertical text on the left side, possibly a permit or drawing number.

PAUL J. FORD AND COMPANY
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 TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).
 REFER TO EMS-SOWF-10007 - MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

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VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADVISORY FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

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 • ROW MATERIALS
 • PHOTOS OF ALL CRITICAL DETAILS
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X	MI CHECKLIST DRAWINGS
X	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
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CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	FOUNDATION INSPECTIONS
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	POST INSTALLED AND/OR ROD VERIFICATION
NA	BASE PLATE BROUT VERIFICATION
NA	CONTRACTORS CERTIFIED WELD INSPECTION
NA	EARTHWORK: LIFT AND DENSITY
NA	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
NA	THIRD PARTY ON-SITE INSPECTION OF BOLT PRETENSION PER CROWN REQUIREMENTS
NA	INSPECTION OF FLAX BOLTS AND OTTS PER REQUIREMENTS ON SHEET S-3
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NOTE: X DENOTES A DOCUMENT REQUIRED FOR THE MI REPORT
 NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT



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 R.S.T. LCC DEPLOYMENT

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POST-CONSTRUCTION

6.3.1 MI INSPECTOR REDLINE OR RECORD DRAWING(S)

37513-1642 PERMIT.DWG

MONOPOLE REINFORCEMENT AND RETROFIT PROJECT



BU NUMBER; SITE NAME
BU #826222; NEWTOWN/RT-25

APP: 180205 REV. 3; WO: 600035

SITE ADDRESS
**201 MAIN STREET
 NEWTOWN, CT 06470
 FAIRFIELD COUNTY**

PROJECT NOTES

1. DETAILED FIELD INFORMATION REGARDING INTERFERENCES AND/OR EXISTING FIELD CONDITIONS MAY BE AVAILABLE ON CROWN'S OCISITES AND FROM CONTRACTOR'S PRE-MOD MAPPING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND COORDINATE WITH THE AVAILABLE SOURCES OF INFORMATION ABOVE AND WITH THE PROJECT PLANS BEFORE PROCEEDING WITH THE WORK. CONTRACTOR SHALL IMMEDIATELY REPORT ANY AND ALL DISCREPANCIES TO PAUL J. FORD AND COMPANY AND CROWN CASTLE FIELD PERSONNEL BEFORE PROCEEDING WITH THE WORK.
2. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRETENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.
3. ALL STRUCTURAL BOLTS SHALL BE FIELD INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

PROJECT CONTACTS:

MONOPOLE OWNER:

CROWN CASTLE
 8 PARKMEADOW DRIVE, PITTSFORD, NY 14534
 CONTACT: STEVE TUTTLE
 PH: (585) 899-3445

STRUCTURAL ENGINEER OF RECORD (EOR):

PAUL J. FORD AND COMPANY
 250 EAST BROAD STREET, SUITE 600
 COLUMBUS, OHIO 43215-3708
 CONTACT: KYLE THORPE AT KTHORPE@PJFWEB.COM
 PHONE: 614-221-6679

DESIGN STANDARD

THIS REINFORCEMENT DESIGN IS BASED UPON THE REQUIREMENTS OF THE TIA/EIA-222-F-1996 STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, USING A DESIGN BASIC WIND SPEED OF 85 MPH (FASTEST MILE) WITH NO ICE, 37.6 MPH WITH 3/4 INCH ICE AND 50 MPH SERVICE LOADS.

REFER TO THE POLE DESIGN AND ANTENNA LOADING DOCUMENTED IN THE PJF STRUCTURAL ANALYSIS FOR THIS SITE (PJF#37513-1642), DATED 8-20-2013.

THIS PROJECT INCLUDES THE FOLLOWING REINFORCING ELEMENTS:

FOUNDATION AUGMENTATION: MICROPILES

SHEET INDEX

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
S-1	GENERAL NOTES
S-2	GENERAL NOTES
S-3	MONOPOLE PROFILE
S-4	FOUNDATION REINFORCING DETAILS
S-5	MI CHECKLIST



AUG 21 2013

ASBUILT 5-26-14
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BU #826222; NEWTOWN/RT-25
 NEWTOWN, CT
 MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No:
 37513-1642
 DRAWN BY:
 B.M.S.
 CHECKED BY:
 K.A.T.
 APPROVED BY:
 KH
 DATE:
 8-20-2013

ISSUE DATE OF PERMIT: 8-20-2013

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CROWN CASTLE PROJECT: BU #826222, NEWTOWN/RT-25, NEWTOWN, CT
 MONOPOLE RETROFIT PROJECT MASTER NOTES DOCUMENT (REV. 2, 1/22/2009)

A. GENERAL NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION. THESE DRAWINGS WERE PREPARED FROM INFORMATION AND DOCUMENTS PROVIDED TO PAUL J. FORD & COMPANY BY CROWN CASTLE. THIS INFORMATION PROVIDED HAS NOT BEEN FIELD VERIFIED BY PAUL J. FORD & COMPANY FOR ACCURACY AND THEREFORE DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL SITE CONDITIONS SHOULD BE ANTICIPATED. ANY DISCREPANCIES AND/OR CHANGES BETWEEN THE INFORMATION CONTAINED IN THESE DRAWINGS AND THE ACTUAL VERIFIED SITE CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF CROWN CASTLE AND PAUL J. FORD & COMPANY SO THAT ANY CHANGES AND/OR ADJUSTMENTS, IF NECESSARY, CAN BE MADE TO THE DESIGN AND DRAWINGS.
- THE EXISTING UNREINFORCED MONOPOLE STRUCTURE DOES NOT HAVE THE STRUCTURAL CAPACITY TO CARRY ALL OF THE ANTENNA AND PLATFORM LOADS SHOWN ON THESE DRAWINGS AT THE REQUIRED MINIMUM TIA/EIA-222-F BASIC WIND SPEEDS. DO NOT INSTALL ANY ADDITIONAL OR NEW ANTENNA AND PLATFORM LOADS UNTIL THE MONOPOLE REINFORCING SYSTEM IS COMPLETELY AND SUCCESSFULLY INSTALLED.
- IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.
- THIS STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE INSTALLATION OF THE REINFORCING REPAIR SYSTEM HAS BEEN PROPERLY AND ADEQUATELY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO INSURE THE SAFETY AND STABILITY OF THE MONOPOLE AND ITS COMPONENT PARTS DURING FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER 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. IMPORTANT CUTTING, WELDING AND SAFETY GUIDELINES: THE CONTRACTOR SHALL FOLLOW ALL CROWN CASTLE CUTTING, WELDING, FIRE PREVENTION AND SAFETY GUIDELINES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A COPY OF THE CURRENT CROWN CASTLE GUIDELINES FROM CROWN CASTLE. PER THE 12-01-2005 CROWN CASTLE DIRECTIVE "ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CROWN CASTLE POLICY CUTTING AND WELDING PLAN" (DOC # ENG-POL-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE PROJECT.
- THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS 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 INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
- ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY THE INSPECTION/TESTING AGENCY. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTORS PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- ALL MATERIALS AND EQUIPMENT FURNISHED WILL 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 MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK AS WELL AS CROWN CASTLE SAFETY GUIDELINES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW OXADIAL CABLES AND OTHER EQUIPMENT DURING CONSTRUCTION.
- ANY EXISTING ATTACHMENTS AND/OR PROJECTIONS ON THE POLE THAT MAY INTERFERE WITH THE INSTALLATION OF THE REINFORCING SYSTEM WILL HAVE TO BE REMOVED, AND/OR RELOCATED, AND/OR REPLACED AND RE-INSTALLED AFTER THE REINFORCING IS SUCCESSFULLY COMPLETED. THE CONTRACTOR SHALL IDENTIFY AND COORDINATE THESE ITEMS PRIOR TO CONSTRUCTION WITH THE OWNER, TESTING AGENCY, AND ENGINEER.
- ANY AND ALL EXISTING PLATFORMS THAT ARE LOCATED IN AREAS OF THE POLE SHAFT WHERE SHAFT REINFORCING MUST BE APPLIED SHALL BE TEMPORARILY REMOVED OR OTHERWISE SUPPORTED TO PERMIT NEW CONTINUOUS REINFORCEMENT TO BE ATTACHED. AFTER THE CONTRACTOR HAS SUCCESSFULLY INSTALLED THE MONOPOLE REINFORCEMENT SYSTEM, THE CONTRACTOR SHALL RE-INSTALL THE PLATFORMS. IN NO CASE SHALL ANY NEW AND/OR ADDITIONAL PLATFORMS AND/OR ANTENNAS AND/OR COAX CABLES AND/OR OTHER EQUIPMENT BE INSTALLED ON THE MONOPOLE UNTIL THE CONTRACTOR HAS SUCCESSFULLY COMPLETED THE INSTALLATION OF ALL OF THE REQUIRED STRUCTURAL REINFORCING SYSTEM COMPONENTS.

B. (SECTION NOT USED)

C. SPECIAL INSPECTION AND TESTING

- ALL WORK SHALL BE SUBJECT TO REVIEW AND OBSERVATION BY THE OWNER'S REPRESENTATIVE AND THE OWNER'S AUTHORIZED INDEPENDENT INSPECTION AND TESTING AGENCY. REFER TO CROWN CASTLE DOCUMENT ENG-SOW-10008 FOR SPECIFICATION.
- ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTORS PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- OBSERVED DISCREPANCIES BETWEEN THE WORK AND THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- AN INDEPENDENT QUALIFIED INSPECTION/TESTING AGENCY SHALL BE SELECTED, RETAINED AND PAID FOR BY THE OWNER FOR THE SOLE PURPOSE OF INSPECTING, TESTING, DOCUMENTING, AND APPROVING ALL WELDING AND FIELD WORK PERFORMED BY THE CONTRACTOR.
 - ACCESS TO ANY PLACE WHERE WORK IS BEING DONE SHALL BE PERMITTED AT ALL TIMES.
 - THE INSPECTION AGENCY SHALL SO SCHEDULE THIS WORK AS TO CAUSE A MINIMUM OF INTERRUPTION TO, AND COORDINATE WITH, THE WORK IN PROGRESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK SCHEDULE WITH THE TESTING AGENCY. THE CONTRACTOR SHALL ALLOW FOR ADEQUATE TIME AND ACCESS FOR THE TESTING AGENCY TO PERFORM THEIR DUTIES.
- THE INSPECTION AND TESTING AGENCY SHALL BE RESPONSIBLE TO PERFORM THE FOLLOWING SERVICES FOR THE OWNER. THE TESTING AGENCY SHALL INSPECT THE FOLLOWING ITEMS IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. THE TESTING AGENCY SHALL INSPECT ITEMS ON THIS LIST AND OTHER ITEMS AS NECESSARY TO FULFILL THEIR RESPONSIBILITY. THE TESTING AGENCY SHALL UTILIZE EXPERIENCED, TRAINED INSPECTORS INCLUDING AWS CERTIFIED WELDING INSPECTORS (CWI). INSPECTORS SHALL HAVE THE TRAINING, CREDENTIALS, AND EXPERIENCE APPROPRIATE FOR AND COMMENSURATE WITH THE SCOPE AND TYPE OF INSPECTION WORK TO BE PERFORMED.
 - GENERAL:
 - PERFORM CONTINUOUS ON-SITE OBSERVATION, INSPECTION, VERIFICATION, AND TESTING DURING THE TIME THE CONTRACTOR IS WORKING ON-SITE. AGENCY SHALL NOTIFY OWNER IMMEDIATELY WHEN FIELD PROBLEMS OR DISCREPANCIES OCCUR.
 - FOUNDATIONS, CONCRETE, AND SOIL PREPARATION - (NOT REQUIRED)
 - CORROSION TESTING PER A.C.I. - (NOT REQUIRED)
 - STRUCTURAL STEEL:
 - CHECK THE STEEL ON THE JOB WITH THE PLANS.
 - CHECK MILL CERTIFICATIONS.
 - CHECK GRADE OF STEEL MEMBERS AND BOLTS FOR CONFORMANCE WITH DRAWINGS.
 - INSPECT STEEL MEMBERS FOR DISTORTION, EXCESSIVE RUST, FLAWS AND BURNED HOLES.
 - CALL FOR LABORATORY TEST REPORTS WHEN IN DOUBT.
 - CHECK STEEL MEMBERS FOR SIZES, SWEEP AND DIMENSIONAL TOLERANCES.
 - CHECK FOR SURFACE FINISH SPECIFIED, GALVANIZED.
 - CHECK BOLT TIGHTENING ACCORDING TO AISC "TURN OF THE NUT" METHOD.
 - WELDING - (NOT REQUIRED)
 - SPECIAL INSPECTION OF EXISTING SHAFT-TO-FLANGE WELD CONNECTIONS - (NOT REQUIRED)
- REPORTS:
 - COMPLETE AND PERIODICALLY SUBMIT DAILY INSPECTION REPORTS TO THE OWNER.
- THE INSPECTION PLAN OUTLINED HEREIN IS INTENDED AS A DESCRIPTION OF GENERAL AND SPECIFIC ITEMS OF CONCERN. IT IS NOT INTENDED TO BE ALL-INCLUSIVE. IT DOES NOT LIMIT THE TESTING AND INSPECTION AGENCY TO THE ITEMS LISTED. ADDITIONAL TESTING, INSPECTION, AND CHECKING MAY BE REQUIRED AND SHOULD BE ANTICIPATED. THE TESTING AGENCY SHALL USE THEIR PROFESSIONAL JUDGMENT AND KNOWLEDGE OF THE JOB SITE CONDITIONS AND THE CONTRACTORS PERFORMANCE TO DECIDE WHAT OTHER ITEMS REQUIRE ADDITIONAL ATTENTION. THE TESTING AGENCY'S JUDGMENT MUST PREVAIL ON ITEMS NOT SPECIFICALLY COVERED. ANY DISCREPANCIES AND PROBLEMS SHALL BE BROUGHT IMMEDIATELY TO THE OWNER'S ATTENTION. RESOLUTIONS ARE NOT TO BE MADE WITHOUT THE OWNER'S REVIEW AND SPECIFIC WRITTEN CONSENT. THE OWNER RESERVES THE RIGHT TO DETERMINE WHAT IS AN ACCEPTABLE RESOLUTION OF DISCREPANCIES AND PROBLEMS.
- AFTER EACH INSPECTION, THE TESTING AGENCY WILL PREPARE A WRITTEN ACCEPTANCE OR REJECTION WHICH WILL BE GIVEN TO THE CONTRACTOR AND FILED AS DAILY REPORTS TO THE OWNER. THIS WRITTEN ACTION WILL GIVE THE CONTRACTOR A LIST OF ITEMS TO BE CORRECTED, PRIOR TO CONTINUING CONSTRUCTION, AND/OR LOADING OF STRUCTURAL ITEMS.
- RESPONSIBILITY: THE TESTING AGENCY DOES NOT RELIEVE THE CONTRACTORS CONTRACTUAL OR STATUTORY OBLIGATIONS. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE OFFICIAL CONTRACT DOCUMENTS. THE TESTING AGENCY WILL NOT REPLACE THE CONTRACTORS QUALITY CONTROL PERSONNEL.



Joseph Pachicaran
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 LICENSED PROFESSIONAL ENGINEER

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BU #826222; NEWTOWN/RT-25
 NEWTOWN, CT
 MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No: 37513-1842	ISSUE DATE OF PERMIT: 8-20-2013
DRAWN BY: B.M.S.	S-1
CHECKED BY: K.A.T.	
APPROVED BY: <i>KH</i>	
DATE: 8-20-2013	

<p>D. STRUCTURAL STEEL</p> <p>1. STRUCTURAL STEEL MATERIALS, FABRICATION, DETAILING, AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING REFERENCE STANDARDS:</p> <p>A. BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC):</p> <p>(A) "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS"</p> <p>(B) "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS," AS APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION.</p> <p>(C) "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (PARAGRAPH 4.2.1 SPECIFICALLY EXCLUDED).</p> <p>B. BY THE AMERICAN WELDING SOCIETY (AWS):</p> <p>(A) "STRUCTURAL WELDING CODE," STEEL, D1.1"</p> <p>(B) "SYMBOLS FOR WELDING AND NON-DESTRUCTIVE TESTING"</p> <p>2. ANY MATERIAL OR WORKMANSHIP WHICH IS OBSERVED TO BE DEFECTIVE OR INCONSISTENT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED, MODIFIED, OR REPLACED AT THE CONTRACTOR'S EXPENSE.</p> <p>3. TIGHTEN ALL STRUCTURAL BOLTS, INCLUDING THE AJAX M20 BOLTS WITH SHEAR SLEEVES, ACCORDING TO THE REQUIREMENTS OF THE AISC "TURN OF THE NUT" METHOD. TIGHTEN BOLTS 1/3 TURN PAST THE SNUG TIGHT CONDITION AS DEFINED BY AISC.</p> <p>4. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE OF THE AMERICAN WELDING SOCIETY, AWS D1.1. ALL WELD ELECTRODES SHALL BE E60XX UNLESS NOTED OTHERWISE ON THE DRAWINGS.</p> <p>5. ALL WELDED CONNECTIONS SHALL BE MADE BY WELDERS CERTIFIED BY AWS. CONTRACTOR SHALL SUBMIT WELDERS' CERTIFICATION AND QUALIFICATION DOCUMENTATION TO THE OWNER'S TESTING AGENCY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.</p> <p>6. STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A572 GRADE 65 (FY = 65 KSI MIN.) UNLESS NOTED OTHERWISE ON THE DRAWINGS.</p> <p>7. SURFACES OF EXISTING STEEL SHALL BE PREPARED AS REQUIRED FOR FIELD WELDING PER AWS, SEE SECTION J NOTES REGARDING TOUCH-UP OF GALVANIZED SURFACES DAMAGED DURING TRANSPORTATION OR ERECTION AND ASSEMBLY AS WELL AS FIELD WELDING.</p> <p>8. UNLESS OTHERWISE NOTED, ALL STEEL MEMBERS SHALL BE HOT DIP GALVANIZED. AFTER FABRICATION, IN ACCORDANCE WITH ASTM A123. SEE SECTION J FOR FURTHER NOTES AND FOR EXCEPTIONS (IF ANY).</p> <p>9. ALL WELDS SHALL BE VISUALLY INSPECTED BY THE OWNER'S APPROVED TESTING AGENCY. OTHER TESTS MAY ALSO BE PERFORMED ON THE WELDS BY THE TESTING AGENCY IN ORDER FOR THEM TO PERFORM THEIR DUTIES FOR THIS PROJECT. THE CONTRACTOR SHALL COOPERATE WITH THE TESTING AGENCY IN THEIR TESTING EFFORTS.</p> <p>10. NO WELDING SHALL BE DONE TO THE EXISTING STRUCTURE WITHOUT THE PRIOR APPROVAL AND SUPERVISION OF THE TESTING AGENCY.</p> <p>11. FIELD CUTTING OF STEEL:</p> <p>(A) PRIOR TO ANY FIELD CUTTING, THE CONTRACTOR SHALL MARK THE CUT OUTLINES ON THE STEEL AND THE INSPECTION/TESTING AGENCY SHALL VERIFY PROPOSED LAYOUT, LOCATION, AND DIMENSIONS.</p> <p>(B) ANY REQUIRED CUTS IN THE STEEL SHALL BE CAREFULLY CUT BY MECHANICAL METHODS SUCH AS DRILLING, SAW CUTTING, AND GRINDING. THE CONTRACTOR IS RESPONSIBLE TO PREVENT ANY DAMAGE TO THE COAX CABLES, AND/OR OTHER EQUIPMENT AND/OR THE STRUCTURE, DURING THE CUTTING WORK. ANY DAMAGE TO THE COAX CABLES, AND/OR OTHER EQUIPMENT AND/OR THE STRUCTURE, RESULTING FROM THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE INSPECTION/TESTING AGENCY SHALL CLOSELY AND CONTINUOUSLY MONITOR THIS ACTIVITY.</p> <p>(C) ALL REQUIRED CUTS SHALL BE CUT WITHIN THE DIMENSIONS SHOWN ON THE DRAWINGS. NO CUTS SHALL EXTEND BEYOND THE OUTLINE OF THE DIMENSIONS SHOWN ON THE DRAWINGS. ALL CUT EDGES SHALL BE GRIND SMOOTH AND DE-BURRED. CUT EDGES THAT ARE TO BE FIELD WELDED SHALL BE PREPARED FOR FIELD WELDING PER AWS D1.1 AND AS SHOWN ON THE DRAWINGS. IT MAY BE NECESSARY TO DRILL STARTER HOLES AS REQUIRED. TO MAKE THE CUTS, THE INSPECTION/TESTING AGENCY SHALL CLOSELY AND CONTINUOUSLY MONITOR THIS ACTIVITY.</p> <p>E. BASE PLATE GROUT - (NOT REQUIRED)</p> <p>F. FOUNDATION WORK</p> <p>1. THE CONTRACTOR SHALL PROTECT THE EXISTING MONOPOLE STRUCTURE, AS WELL AS ANY OTHER NEARBY EXISTING FOUNDATIONS FOR OTHER STRUCTURES OR EQUIPMENT, FROM LOSS OF SOIL AROUND AND/OR BENEATH FOOTINGS DURING ANY REQUIRED EXCAVATION. THE CONTRACTOR SHALL BRACE THE SIDES OF ANY EXCAVATION AS REQUIRED.</p> <p>2. THE EFFECT OF ADDITIONAL EXCAVATION (WHERE REQUIRED) FOR THE NEW MAT FOOTING (WHERE REQUIRED) OR OTHER FOUNDATION ALLEGMENTATION AND REINFORCING (WHERE REQUIRED) MAY HAVE IMPACT ON EXISTING EQUIPMENT AND/OR OTHER EXISTING STRUCTURES NEAR THE EXCAVATION. (ENGINEER OR RECORD) HAS NOT BEEN PROVIDED WITH ANY SPECIFIC INFORMATION OR DETAILS REGARDING EXISTING EQUIPMENT OR OTHER EXISTING STRUCTURES ON THE SITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE IMPACT OR EFFECT THAT ANY REQUIRED EXCAVATION HAS ON ANY EXISTING NEARBY EQUIPMENT AND/OR STRUCTURES. CONTRACTOR SHALL COORDINATE THIS SITE-SPECIFIC INFORMATION WITH THE OWNER AND TESTING AGENCY PRIOR TO CONSTRUCTION AND FOUNDATION WORK. THE CONTRACTOR SHALL ADEQUATELY BRACE, SHORE, AND/OR RELOCATE (AFTER OBTAINING THE PRIOR WRITTEN PERMISSION OF THE OWNER), AS NECESSARY, THE INTERFERING EXISTING NEARBY EQUIPMENT AND/OR STRUCTURES.</p>	<p>G. CAST-IN-PLACE CONCRETE</p> <p>CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.</p> <p>(A) CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED (8% +/- 1.5%).</p> <p>(B) WATER CEMENT RATIO = 0.52 (MAXIMUM).</p> <p>2. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60.</p> <p>3. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318, LATEST EDITION.</p> <p>CONTRACTOR SHALL FOLLOW ALL APPLICABLE ACI PROCEDURES FOR COLD WEATHER CONCRETE PLACEMENT.</p> <p>4. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.</p> <p>5. ALL STRUCTURAL MEMBERS SHALL BE POLURED MONOLITHICALLY, EXCEPT FOR REQUIRED ETC., AS REQUIRED BEFORE CONCRETE IS PLACED.</p> <p>6. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED.</p> <p>7. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC., NECESSARY TO SUPPORT REINFORCING STEEL CHAIRS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL.</p> <p>8. ALL STRUCTURAL MEMBERS SHALL BE POLURED MONOLITHICALLY, EXCEPT FOR REQUIRED CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT PROPOSED CONSTRUCTION JOINT LOCATIONS AND DETAILS TO THE ENGINEER FOR REVIEW.</p> <p>9. CONTRACTOR SHALL PROVIDE 3/4-INCH CHAMFER ON ALL EXPOSED CORNERS UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED AS SPECIFIED BY ACI.</p> <p>10. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:</p> <p>2" CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH</p> <p>2" CONCRETE EXPOSED TO EARTH OR WEATHER, #6 THROUGH #18 BARS</p> <p>1-1/2" CONCRETE EXPOSED TO EARTH OR WEATHER, #5 BAR AND SMALLER.</p> <p>11. FOOTING BARS SHALL BE BENT 1'-6" AROUND CORNERS, OR PROVIDE CORNER BARS WITH A 2'-0" LAP ON EACH END.</p> <p>12. TESTING LABORATORY SHALL SUBMIT ONE COPY OF ALL CONCRETE TEST REPORTS DIRECTLY TO THE ENGINEER.</p> <p>13. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL," (ACI PUBLICATION SP-15, LATEST EDITION) AT THE PROJECT FIELD OFFICE.</p> <p>FLY ASH SHALL BE PERMITTED. FLY ASH CONTENT SHALL BE A MAXIMUM OF 25% OF CEMENT WEIGHT.</p> <p>H. EPOXY GROUTED REINFORCING ANCHOR RODS - (NOT REQUIRED)</p> <p>I. TOUCH UP OF GALVANIZING - (NOT REQUIRED)</p> <p>J. HOT DIP GALVANIZING - (NOT REQUIRED)</p> <p>K. PERPETUAL INSPECTION AND MAINTENANCE BY THE OWNER</p> <p>AFTER THE CONTRACTOR HAS SUCCESSFULLY COMPLETED THE INSTALLATION OF THE MONOPOLE REINFORCING SYSTEM AND THE WORK HAS BEEN ACCEPTED BY THE OWNER, THE OWNER WILL BE RESPONSIBLE FOR THE LONG TERM AND PERPETUAL INSPECTION AND MAINTENANCE OF THE POLE AND REINFORCING SYSTEM.</p> <p>2. THE MONOPOLE REINFORCING SYSTEM INDICATED IN THESE DOCUMENTS USES REINFORCING COMPONENTS THAT INVOLVE FIELD WELDING STEEL MEMBERS TO THE EXISTING GALVANIZED STEEL POLE STRUCTURE. THESE FIELD WELDED CONNECTIONS ARE SUBJECT TO CORROSION DAMAGE AND DETERIORATION IF THEY ARE NOT PROPERLY MAINTAINED AND COVERED WITH CORROSION PREVENTIVE COATING SUCH AS THE ZRC GALVANIZING COMPOUND SPECIFIED PREVIOUSLY. THE STRUCTURAL LOAD CARRYING CAPACITY OF THE REINFORCED POLE SYSTEM IS DEPENDENT UPON THE INSTALLED SIZE AND QUALITY, MAINTAINED SOUND CONDITION AND STRENGTH OF THESE FIELD WELDED CONNECTIONS. ANY CORROSION OF, DAMAGE TO, FATIGUE, FRACTURE, AND/OR DETERIORATION OF THESE WELDS AND/OR THE CONNECTED COMPONENTS WILL RESULT IN THE LOSS OF STRUCTURAL LOAD CARRYING CAPACITY AND MAY LEAD TO FAILURE OF THE STRUCTURAL SYSTEM. THEREFORE, IT IS IMPERATIVE THAT THE OWNER REGULARLY INSPECTS, MAINTAINS, AND REPAIRS AS NECESSARY, ALL OF THESE WELDS, CONNECTIONS, AND COMPONENTS FOR THE LIFE OF THE STRUCTURE.</p> <p>THE OWNER SHALL REFER TO TIA/EIA-222-F-1996, SECTION 14 AND ANNEX E FOR RECOMMENDATIONS FOR MAINTENANCE AND INSPECTION. THE FREQUENCY OF THE INSPECTION AND MAINTENANCE INTERVALS IS TO BE DETERMINED BY THE OWNER BASED UPON ACTUAL SITE AND ENVIRONMENTAL CONDITIONS. PAUL J. FORD & COMPANY RECOMMENDS THAT A COMPLETE AND THOROUGH INSPECTION OF THE ENTIRE REINFORCED MONOPOLE STRUCTURAL SYSTEM BE PERFORMED YEARLY AND/OR AS FREQUENTLY AS CONDITIONS WARRANT. ACCORDING TO TIA/EIA-222-F-1996 SECTION 14.1, NOTE 1, IT IS RECOMMENDED THAT THE STRUCTURE BE INSPECTED AFTER SEVERE WIND AND/OR ICE STORMS OR OTHER EXTREME LOADING CONDITIONS.</p>
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<p>PAUL J. FORD AND COMPANY 250 East Wood Street - Suite 800 - Colchester, Ohio 43115 (614) 221-0070 www.pjfco.com</p> <p>CROWN CASTLE 6 PARKMEADOW DRIVE, PITTSFORD, NY 14534 PH: (585) 889-3446 FAX: (585) 889-3448</p>	<p>BU #826222; NEWTOWN/RT-25 NEWTOWN, CT MONOPOLE REINFORCEMENT AND RETROFIT PROJECT</p>	<p>PROJECT No: 37513-1642</p> <p>DRAWN BY: B.M.S.</p> <p>CHECKED BY: K.A.T.</p> <p>APPROVED BY: <i>K.A.T.</i></p> <p>DATE: 8-20-2013</p> <p>ISSUE DATE OF PERMIT: 8-20-2013</p> <p style="font-size: 2em; text-align: center;">S-2</p>
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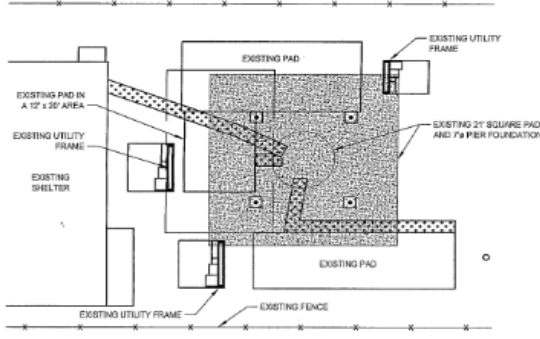
POLE SPECIFICATIONS					
POLE SHAPE TYPE: 19 SIDED POLYGON					
TAPER: 0.34408 IN/FT					
SHAFT STEEL: ASTM A572 GRADE 65					
BASE PL. STEEL: ASTM A572 GRADE 50					
ANCHOR RODS: 1 1/4" x ASTM A36					

SHAFT SECTION DATA					
SHAFT SECTION	SECTION LENGTH (FT)	PLATE THICKNESS (IN)	LAP SPLICE (IN)	DIAMETER ACROSS FLATS (IN)	
				@ TOP	@ BOTTOM
1	17.20	0.2500	35.40	21.830	26.091
2	37.50	0.3125	48.20	26.776	34.063
3	37.50	0.3750	58.40	32.484	41.753
4	37.50	0.3750	58.40	30.833	49.063
5	37.50	0.3750	55.00	46.963	56.125

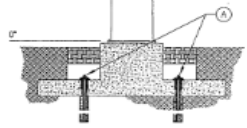
NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES



MODIFICATIONS:
 (A) INSTALL (4) NEW MICROPILES IN EXISTING FOUNDATION. SEE SHEET S-4 & S-5.



PARTIAL SITE MAP (2) S-3



POLE ELEVATION (1) ASBUILT 5-26-14 R.S.T. LCC DEPLOYMENT

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BU #826222; NEWTOWN/RT-25
 NEWTOWN, CT
 MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

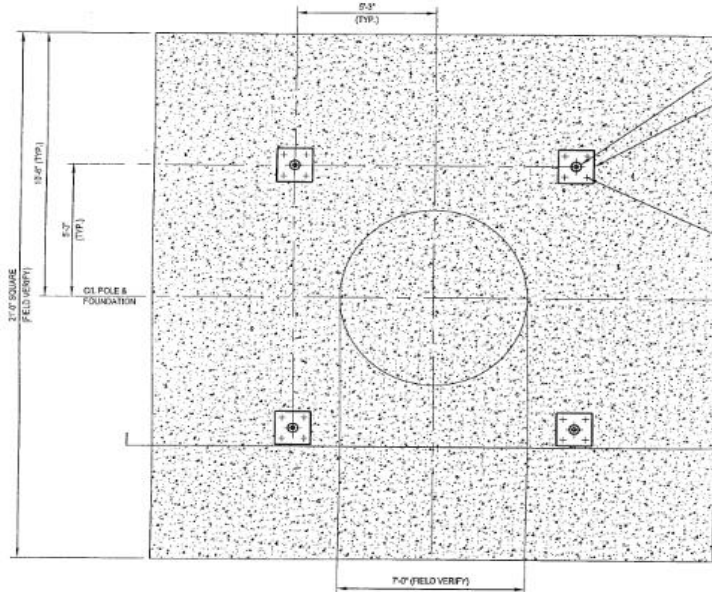
PROJECT NO: 37513-1642	ISSUE DATE OF PERMIT: 8-20-2013
DRAWN BY: B.M.S.	S-3
CHECKED BY: K.A.T.	
APPROVED BY: CH	DATE: 8-20-2013

MICROPILE TESTING REQUIREMENTS

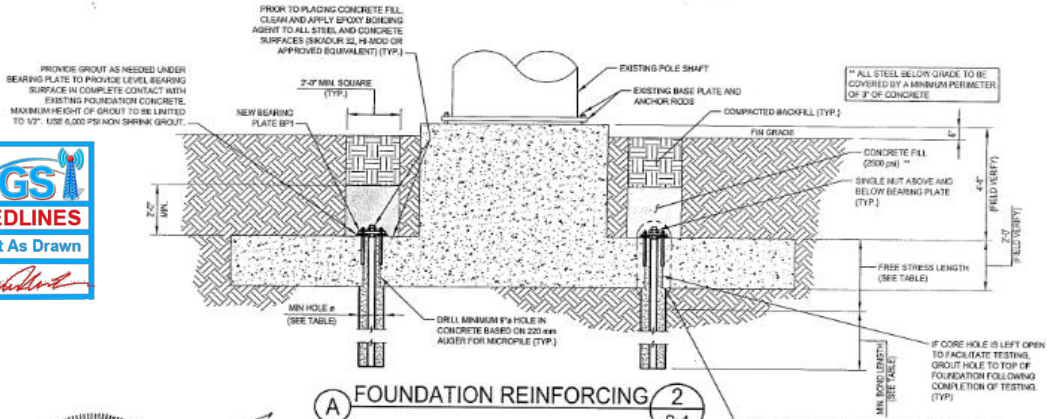
A MINIMUM OF 2 INDEPENDENT MICROPILES (TEST PILES SHALL BE IN OPPOSITE CORNERS) ARE TO BE TESTED TO 200% IN TENSION. ALL PILE TESTING SHALL BE CARRIED OUT IN GENERAL CONFORMANCE WITH ASTM D3998. A HYDRAULIC JACK MAY BE SUBSTITUTED FOR THE PILE TESTING SETUPS SHOWN IN THE ASTM SPECIFICS. IF A HYDRAULIC JACK IS USED, FOLLOW EQUIPMENT GUIDELINES DISCUSSED IN THE POST TENSIONING INSTITUTE "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS" DESIGN GUIDE, SECTION 8.2. PILES SHALL BE LOADED USING PTFES (PROOF TEST) METHODOLOGY (REFER TO SECTION 6.3.3 OF THE PTF DESIGN GUIDE). ALIGNMENT LOAD, AL, SHALL BE 18 KIPLS DESIGN LOAD, DL, IS 156 KIPLS. PROVISION SHALL BE MADE TO ALLOW FOR MOVEMENT BETWEEN MICROPILE CROSS-SECTION AND SOIL SO THAT GROUT-TO-SOIL BOND LINE IS ADEQUATELY TESTED.

**CONTECH'S 73/53
HOLLOW BAR MICROPILE
OR EQUIVALENT SYSTEM.**

TAKE ALL MEASURES NECESSARY TO AVOID DAMAGING EXISTING REINFORCING BARS DURING DRILLING OPERATIONS. NOTIFY PAUL J. FORD AND COMPANY IMMEDIATELY IF EXISTING REINFORCING BARS ARE ENCOUNTERED AND INTERFERE WITH PLACEMENT OF NEW PILES. MINOR ADJUSTMENT TO PROPOSED LOCATION OF NEW PILES MAY BE REQUIRED.



(A) FOUNDATION REINFORCING PLAN 1 S-4



(A) FOUNDATION REINFORCING 2 S-4



AUG 2 1 2013

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DRAWN BY: B.M.S.	S-4
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APPROVED BY: KH	
DATE: 8-20-2013	

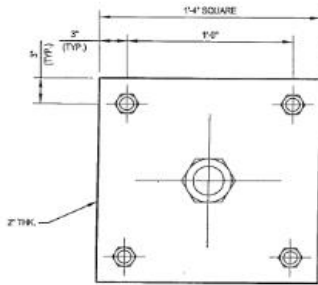
MICROPILE NOTES:

1. ALL HOLLOW BAR STEEL AND ASSOCIATED HARDWARE SHALL BE SUPPLIED BY CON-TECH SYSTEMS OR OTHER/ECOR APPROVED EQUIVALENT.
2. ALL HOLLOW BAR, NUTS AND BEARING PLATES SHALL BE HOT-DIP GALVANIZED PER ASTM A133 OR A153, AS APPROPRIATE.
3. CONTACT CON-TECH SYSTEMS (OR MANUFACTURER OF APPROVED ALTERNATE) FOR MATERIALS AND INSTALLATION PROCEDURES AND RECOMMENDATIONS.
4. SPECIAL INSPECTION OF THE MICROPILES IS REQUIRED AS FOLLOWS: (1) VERIFY THAT MICROPILE MATERIAL, SIZE AND LENGTH COMPLY WITH THE INFORMATION SHOWN ON THIS DRAWING. (2) VERIFY PLACEMENT OF EACH MICROPILE. (3) OBSERVE DRILLING, GROUTING AND TESTING (AS APPROPRIATE) OPERATIONS FOR EACH MICROPILE AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH MICROPILE.
5. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY FDH, PROJECT NO. 130575000, DATED 8/19/13.
6. CONTACT CONTECH SYSTEMS (OR MANUFACTURER OF APPROVED ALTERNATE) TO VERIFY NUT & WASHER CONNECTION ARE COMPATIBLE WITH MICROPILE THREADS.
7. ALL MICROPILE SHALL BE GROUTED TO FULL HEIGHT. GROUT TO BE 4,000 PSI MIN COMPRESSIVE STRENGTH WITH 0.5 (MAXIMUM WATER/CEMENT) W/C RATIO (TO BE COLLOIDALLY MIXED FOR MICROPILE).



PRELIMINARY PILE DESIGN PARAMETER SCHEDULE*							
PARAMETER	MIN. HOLE & STEEL AREA	ALLOWABLE PILE CAPACITY (kips)	ULTIMATE SKIN FRICTION (PSI)	FREE STRESS LENGTH	FRICTION DEVELOPMENT LENGTH/BORED LENGTH	ROCK SOCKET/PLUNGE LENGTH	TOTAL EMBEDMENT LENGTH
MICROPILE	10.5" 2.53 IN ² MIN	155K	SEE GEOTECH REPORT	5'	27' MIN.	N.A.	33' MIN.

* THE FINAL DESIGN GROUT DIAMETER IS BASED ON A MINIMUM 22MM AUGER IN SILTY SAND. THE DESIGN REQUIRES UNCASED MICROPILES FOR THE LISTED CAPACITY IN TENSION AND COMPRESSION AS Laid OUT PER PLAN. THE CONTRACTOR/MICROPILE INSTALLER IS RESPONSIBLE FOR THE MEANS AND METHODS TO ENSURE THE NECESSARY CAPACITY AND WILL DEMONSTRATE THE INSTALLED CAPACITY PER THE SPECIFIED TESTING. THE EMBEDMENT DEPTH AND AUGER/GROUT DIAMETERS ARE LISTED AS A PRELIMINARY BASIS FOR BIDDING. THE INTENT IS FOR THE INSTALLER TO REVIEW THE CURRENT SOIL INFORMATION AND DESIGN REQUIREMENTS TO ENSURE THAT THE CONTRACTORS SPECIFIC EQUIPMENT OR INSTALLATION TECHNIQUE IS APPROPRIATE. IF THE CONTRACTOR BELIEVES THE SCOPE SHOULD CHANGE UPON REVIEW, PLEASE ADDRESS PRIOR TO BIDDING. AS REQUIRED, PLEASE COORDINATE WITH ENGINEER OF RECORD PRIOR TO INSTALLATION.



NEW BEARING PLATE MK-BP1
F_y=60 KSI (TYP. 4 LOCATIONS)



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BU #826222; NEWTOWN/RT-25
NEWTOWN, CT
MONOPILE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No.
37513-1042
DRAWN BY:
B.M.S.
CHECKED BY:
K.A.T.
APPROVED BY:
KH
DATE:
8-20-2013

ISSUE DATE OF
PERMIT: 8-20-2013

S-5

MODIFICATION INSPECTION NOTES

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

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

ALL MIs SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE VENDOR (ESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE ENG-004-1873 LIST OF APPROVED M VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A P.O. IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).

REFER TO ENG-S04-1007 - MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR

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

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

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

GENERAL CONTRACTOR

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

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

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AN ENG-S04-1007.

RECOMMENDATIONS

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

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLE 16, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS
- IF IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTIONS TO COMMENCE WITH ONE SITE VISIT
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON-SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MIs

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI (FAILED MI), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI
- OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

MI VERIFICATION INSPECTIONS

CROWN RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTIONS ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-S04-1007.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADVISORY FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

PHOTOGRAPHS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - RAW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - WELD PREPARATION
 - BOLT INSTALLATION AND TORQUE
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
 - FINAL IN-FIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-S04-1007.



AUG 2 1 2013

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MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWINGS
X	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
NA	FABRICATION CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATION NDE INSPECTION
NA	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT FILE INSTALLATION AND TESTING PLAN TO CROWN AND P.O. FOR REVIEW. TESTING PLAN SHALL INCLUDE DETAILS REGARDING HOW CONTRACTOR INTENDS TO PREVENT INTERACTION BETWEEN THE TEST FILE AND THE EXISTING FOUNDATION DURING TESTING.	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	FOUNDATION INSPECTIONS
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
NA	CONTRACTORS CERTIFIED WELD INSPECTION
NA	EARTHWORK LIFT AND DENSITY
NA	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
NA	THIRD PARTY ONSITE INSPECTION OF BOLT PRETENSION PER CROWN REQUIREMENTS
NA	INSPECTION OF ALX BOLTS AND OTTS PER REQUIREMENTS ON SHEET S-3
ADDITIONAL TESTING AND INSPECTIONS: VERIFY MICROPILE INSTALLATION DETAILS, SPECIFICALLY MICROPILE SIZES, DRILL HOLE DIAMETERS & DEPTHS, GROUT P.C. AND THAT INSTALLATION WAS PER MANUFACTURER RECOMMENDATION	
POST-CONSTRUCTION	
X	MI INSPECTOR REQUIRE OR RECORD DRAWING(S)
NA	THIRD PARTY ONSITE BOLT INSPECTION REPORT
NA	POST INSTALLED ANCHOR ROD PULL OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS: PROVIDE REPORT DOCUMENTING RESULTS OF MICROPILE INSTALLATION AND PROOF TESTING	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT
NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT



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APPROVED BY: [Signature]
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ISSUE DATE OF PERMIT: 8-20-2013

S-6

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- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - RAW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - WELD PREPARATION
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ASBUILT 5-26-14
R.S.T. LCC DEPLOYMENT

MI CHECKLIST	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWINGS
X	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
NA	FABRICATION CERTIFIED WELD INSPECTION
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CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
X	FOUNDATION INSPECTIONS
X	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
NA	CONTRACTORS CERTIFIED WELD INSPECTION
NA	EARTHWORK LIFT AND DENSITY
NA	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
NA	THIRD PARTY ONSITE INSPECTION OF BOLT PRETENSION PER CROWN REQUIREMENTS
NA	INSPECTION OF ALX BOLTS AND OTTS PER REQUIREMENTS ON SHEET 5-3
ADDITIONAL TESTING AND INSPECTIONS: VERIFY MICROPILE INSTALLATION DETAILS, SPECIFICALLY MICROPILE SIZES, DRILL HOLE DIAMETERS & DEPTHS, GROUT P.C. AND THAT INSTALLATION WAS PER MANUFACTURER RECOMMENDATION	
POST-CONSTRUCTION	
X	MI INSPECTOR REQUIRE OR RECORD DRAWING(S)
NA	THIRD PARTY ONSITE BOLT INSPECTION REPORT
NA	POST INSTALLED ANCHOR ROD PULL OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS: PROVIDE REPORT DOCUMENTING RESULTS OF MICROPILE INSTALLATION AND PROOF TESTING	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT
NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT



PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
280 East Broad Street - Suite 600 - Columbus, Ohio 43215
(614) 221-9579 www.pjfw.com

CROWN CASTLE
8 PARKMEADOW DRIVE, PITTSFORD, NY 14834
PH: (585) 899-3445 FAX: (585) 899-3448

BU #826222; NEWTOWN/RT-25
NEWTOWN, CT
MONOPOLE REINFORCEMENT AND RETROFIT PROJECT

PROJECT No: 37513-1642
DRAWN BY: B.M.S.
CHECKED BY: K.A.T.
APPROVED BY: [Signature]
DATE: 8-20-2013

ISSUE DATE OF PERMIT: 8-20-2013

S-6

6.3.2 PHOTOGRAPHS



6.3.3 POST INSTALLED MICROPILE PULL-OUT TESTING

Stephen Teti

From: Kyle Thorpe
Sent: Monday, April 14, 2014 10:31 AM
To: Stephen Teti
Cc: David Campbell; James Yavorsky; Jeff Hemmings; Justin Kline; Keith_ Stackhouse; rich_taschek@lcc.com
Subject: Re: Newton - 25 826222 anchor plates

Hey Steve,

The (4) anchors are required since the micropiles are acting in tension and compression. We need the anchors to be embedded into the concrete pad. Let me know if this is not possible or if you have any other concerns. The sacrificial test pile is fine. Are you intending to reduce the embed length? If so, please contact us with the results of the test pile prior to installation of the working piles. I don't quite understand what you mean by "max of the pump". Feel free to call to discuss.

Thank you,

Kyle Thorpe, E.I.
Structural Designer
Main: (614) 221-6679 ext. 2168
Direct: (614) 448-4168
Email: kthorpe@pjfweb.com



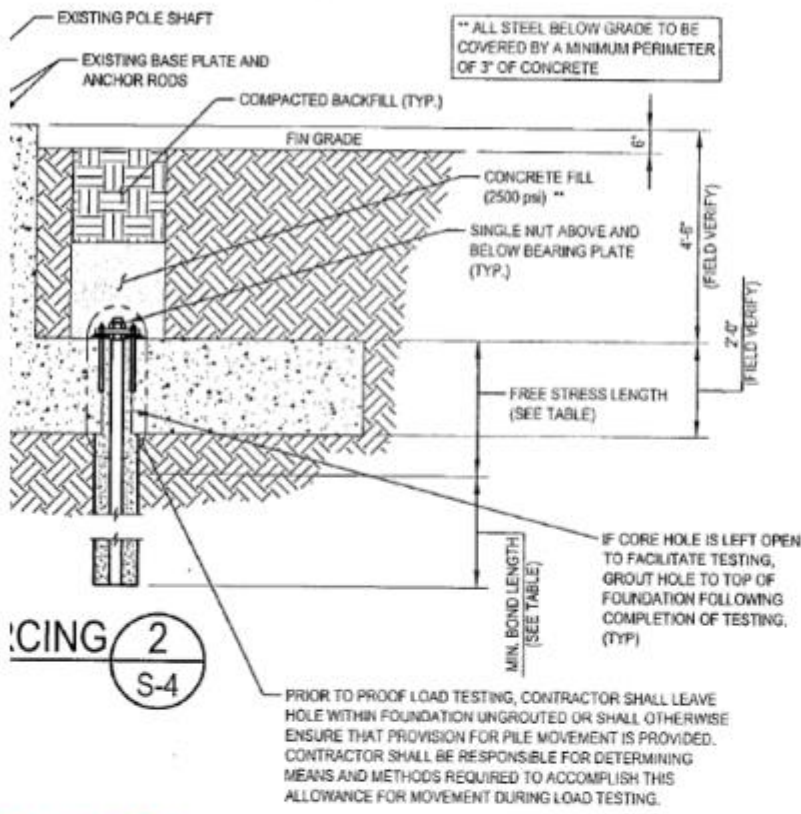
>>> Stephen Teti <stephen_teti@lcc.com> 4/14/2014 9:53 AM >>>

Kyle:

As discussed please review and let us know if the bearing plate will still require the 4 anchor bolts or if we can we just push the rods down with drill??

Also might I suggest that we do a sacrificial test pile adjacent to the pad pulled to failure or max of the pump since there is a free zone in the pad and then we can just drive the rod and be done

Thanks



Stephen J Teti
 Sr. Project Manager
 Structural Division
 Northern Territory



LCC Deployment Services Inc.
 2242 Old Marilton Pike
 Marilton NJ, 08053
 Cell - 609-929-8186 (preferred)
 Desk - 856-810-1658 ext. 242
 Fax- 856-810-1659
 Email: stephen_teti@lcc.com

***** please note new email address effective immediately*****

"Success depends upon previous preparation,
 and without such preparation there is sure to be failure"
 ~Confucius



Telecommunications Contracting Co., Inc.
2242 Old Marlton Pike, Marlton, NJ 08053
856-810-1658 856-810-1659 (Fax)

ANCHOR PULL TEST REPORT

SITE NAME: Newtown

ADDRESS: 201 Main Street Newtown CT

CROWN BU #: 826222

DATE OF TEST: 5/18/14

TECHNICIAN: Michael Menzone

SIZE BOLTS: 73/53 Contech Titan Hollow Bar x 34' in depth

QUANTITY OF BOLTS INSTALLED: 4 + 1 Sacrificial Test Pile

QUANTITY TESTED: 1 Test Pile

GROUT USED: Type 2 Portland Cement Colloidal Mixer

WEATHER CONDITIONS: 80 Degrees Sunny

JACK TYPE: 150 TON HOLLOW PLUNGER Enerpac RRH-1508

TEST CRITERIA:

PRE TEST 6000 PSI Hold for 5 minutes No Movement - PASS

TEST # 1 8800 PSI = 278.5 kips No Movement - PASS

TEST # 2 10,000 PSI = 315 Kips No Movement - PASS

COMMENTS: We maxed out the 150 ton RRH 1508 for 5 minutes and could not break the bar. The Contech Hollow bar has a Ultimate capacity of 260.9 Kips.

