



1800 W. Park Drive  
Westborough, MA 01581

Telephone: 781-970-0053  
Email:  
jeff.barbadora@crowncastle.com

March 8, 2022

Melanie Bachman  
Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT06051

Re: Construction Close Out - BU# 871584 App# 529712– T-Mobile Site ID: CT11189E  
EM-T-Mobile-054-210305 – Exempt Modification  
115 Birch Mountain Road Glastonbury, CT

Dear Ms. Bachman;

This letter is to confirm all construction activities at the above reference site have been completed per the conditions of approval, **EM-T-Mobile-054-210305**, dated April 5, 2021. A stamped and signed MI report is enclosed to satisfy condition number two of the Council's decision.

Please contact if you should have any questions.

A handwritten signature in black ink, appearing to read 'J Barbadora', written in a cursive style.

Jeffrey Barbadora  
Crown Castle  
Site Acquisition Specialists

Date: November 17, 2020  
Engineered Tower Solutions, PLLC  
3227 Wellington Court  
Raleigh, NC 27615  
Office: (919) 782-2710



## Modification Inspection Report

### *Crown Castle Site Information*

**Crown POC:** Dan Vadney  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
**BU Number:** 871584  
**Site Name:** John Tom Hill  
**Site Address:** 115 Birch Mtn. Road, Glastonbury, Connecticut 06033, Hartford County, USA

**Latitude** 41° 42' 32.24", **Longitude** -72° 28' 24.41"  
**200 Foot – Self Support Tower**

Engineered Tower Solutions, PLLC is pleased to submit this **“Modification Inspection Report”** to Crown Castle for the modification/reinforcement to the subject structure. This Modification Inspection (MI) was performed in accordance with CED-SOW-10007 Modification Inspection SOW.

Based on our inspection, Engineered Tower Solutions, PLLC determines this project:

**PASSING MI**

The configuration, materials and/or workmanship of the modifications are installed in accordance with the Contract Documents. If additional information or the full report are required, please contact Crown Castle.

### *Modification Design Information:*

**SDD Vendor:** Crown Castle  
**SDD Date:** June 8, 2020  
**Vendor Job Number:** 1853234  
**Name of EOR:** Maham Barimani, PE  
**Source of SDD:** 9122283

### *MI Vendor Information:*

**Dates on Site:** 11/12/20  
**MI Crew Lead:** Hunter Thomas, CWI

We at Engineered Tower Solutions, PLLC 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,

Frederic Bost, PE  
President



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# **RECORD DRAWINGS**



**9.2.1 MI INSPECTOR REDLINE OR RECORD DRAWING(S)**



## TOWER MODIFICATION DRAWINGS

### PROJECT CONTACTS:

#### 1. CROWN PROJECT MANAGER

DAN VADNEY  
 (518) 373-3510  
 DAN.VADNEY@CROWNCastle.COM  
 3 CORPORATE PARK DRIVE, SUITE 101  
 CLIFTON PARK, NY 10523

#### 2. CROWN DESIGNER

MAHAM BARRAM  
 (724) 416-1111  
 EORAPP@CROWNCastle.COM  
 2000 CORPORATE PARK DRIVE  
 CANONSVILLE, PA 17021

SITE NAME: JOHN TOM HILL  
BU NUMBER: 871584

SITE ADDRESS:  
 115 BIRCH MTN. ROAD  
 GLASTONBURY, CT 06033  
 HARTFORD COUNTY, USA

### TOWER INFORMATION

TOWER MANUFACTURER / DWG #: SABRE / DWG # 9010764  
 TOWER HEIGHT / TYPE: 200 FT SELF SUPPORT TOWER  
 TOWER LOCATION: LAT 41° 42' 32.24"  
 DATUM: (NAD 1983) LONG -72° 28' 24.41"  
 ELEV 879.0 FT AMSL

STRUCTURAL DESIGN DRAWING: CCI / WO # 1853234  
 STRUCTURAL ANALYSIS REPORT: TEP / WO # 1847521  
 STRUCTURAL ANALYSIS DATE: 04/28/20  
 ORDER #: 519195 REV # 0  
 CCSITES DOCUMENT ID: 9052570

### CODE COMPLIANCE

THIS MODIFICATION DESIGN IS BASED ON THE REQUIREMENTS OF THE TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES BASED UPON AN ULTIMATE WIND SPEED OF 125 MPH WITH NO ICE AS REQUIRED BY CONNECTICUT BUILDING CODE, 50 MPH WITH 2 INCH ICE AND 60 MPH UNDER SERVICE LOADS, EXPOSURE CATEGORY C CATEGORY II.



**ETS REDLINE DRAWINGS  
 PASSING MI**

**CREW LEAD: Hunter Thomas  
 DATE: 11/12/20**

### HOT WORK INCLUDED

NA	BASE GRINDING ONLY
NA	BASE WELDING (AND GRINDING)
NA	AERIAL GRINDING ONLY
NA	AERIAL WELDING (AND GRINDING)

ATTENTION ALL CONTRACTORS, ANYTIME YOU ACCESS A CROWN SITE FOR ANY REASON YOU ARE TO CALL THE CROWN NOC UPON ARRIVAL AND DEPARTURE, DAILY AT 800-788-7011



**SAFETY CLIMB: 'LOOK UP'**  
 THE INTEGRITY OF THE WIRE ROPE SAFETY CLIMB SYSTEM SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER REINFORCEMENTS AND EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF ANY WIRE ROPE SAFETY CLIMB ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, OR IMPACT TO THE ANCHORAGE POINTS IN ANY WAY. ANY COMPROMISED SAFETY CLIMB MUST BE REPORTED TO YOUR CROWN POC FOR RESOLUTION, INCLUDING EXISTING CONDITIONS.

### DRAWINGS INCLUDED

SHEET NUMBER	DESCRIPTION
S-1	TITLE PAGE
S-2	MODIFICATION INSPECTION CHECKLIST
S-3 & S-4	NOTES
S-5	TOWER MODIFICATION SCHEDULE
S-6	DETAILS
S-7	REBAR SCHEDULE

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S-1		REV 0




**GENERAL NOTES**

- The General Contractor (GC) shall reference CED-STD-10159, "Tower Modification Construction Specifications", as a continuation of the following General Notes. The GC shall keep a copy of this document with the Structural Design Drawings (SDD) at all times, and shall ensure that all Contractor Personnel are aware of the information enclosed within the General Notes and CED-STD-10159.
- The Contract Documents are the property of Crown Castle (Crown). They are provided to the GC and its Lower Tier Contractors and material suppliers for the limited purpose of use in completing the Work for this Site, and shall be kept in strict confidence and not disclosed to any third parties. The Contract Documents shall not be used for any other purpose whatsoever without the prior written consent of Crown.
- Detail drawings, including notes and tables, shall govern over general notes and typical details. Contact the Crown Point of Contact (POC) and Engineer of Record (EOR) for clarification as needed.
- Do not scale drawings.
- Any Work performed without a prefabrication mapping is done at the risk of the GC and/or fabricator. All dimensions of existing structural elements are assumed based on the available documentation and are preliminary until field-verified by the GC, unless noted otherwise (UNO). Where discrepancies are found, GC shall contact the Crown POC and EOR through RFI.
- For this analysis and modification, the tower has been assumed to be in good condition without any structural defects, UNO. If the GC discovers any indication of an existing structural defect, contact the Crown POC and EOR immediately.
- All construction means and methods, including but not limited to erection plans, rigging plans, climbing plans, and rescue plans, shall be the responsibility of the GC responsible for the execution of the Work contained herein, and shall meet ANSI/ASSE A10.48 (latest edition); federal, state, and local regulations; and any applicable industry consensus standards related to the construction activities being performed. All rigging plans shall adhere to ANSI/ASSE A10.48 (latest edition) and Crown standard CED-STD-10253, "Rigging Program", including the required involvement of a qualified engineer for class IV construction to certify the supporting structure(s) in accordance with the ANSI/TIA-322 (latest edition).
- The structural integrity of the modification design extends to the complete condition only. The GC must be cognizant that the removal of any structural component of an existing tower has the potential to cause the partial or complete collapse of the structure. All necessary precautions must be taken to ensure structural integrity, including, but not limited to, engineering assessment of construction stresses with installation maximum wind speed and/or temporary bracing and shoring.
- Aerial and underground utilities and facilities may or may not be shown on the drawings. The GC shall take every precaution to preserve and protect these items, which may include aerial or underground power lines, telephone lines, water lines, sewer lines, cable television facilities, pipelines, structures and other public and private improvements within or adjacent to the Work area. The responsibility for determining the actual on-site location of these items shall rest exclusively with the GC.
- All manufacturer's hardware assembly instructions shall be followed, UNO. Conflicting notes shall be brought to the attention of the EOR and the Crown POC.

- The GC shall fabricate all required items per the materials specified below, UNO on the detail drawing sheets. If the GC finds for any component that the materials have not been clearly specified, the GC shall submit an RFI to the EOR to confirm the required material.  
 All structural elements shall be new and shall conform to the following requirements, UNO:  
 Monopoles:
  - Structural shapes and plates: ASTM A572 Grade 65 (FY = 65 KSI)
  - Welding electrodes, SMAW: E80XX
  - Welding electrodes, FCAW: E8XT-XX
  - Welding electrodes, GMAW: ER80S-X
 Self-Support and Guyed Towers:
  - Structural shapes and plates: ASTM A572 Grade 50 (FY = 50 KSI)
  - Welding electrodes, SMAW: E70XX
  - Welding electrodes, FCAW: E7XT-XX
  - Welding electrodes, GMAW: ER70S-X
 All tower types:
  - Steel angle: ASTM A572 Grade 50 (FY = 50 KSI)
  - Solid rod: ASTM A36 (FY = 36 KSI)
  - Pipe/tube (round): ASTM A500 Grade C (FY = 46 KSI)
  - Pipe/tube (square): ASTM A500 Grade C (FY = 50 KSI)
  - Bolts: ASTM F3125 Grade A325 Type 1
  - U-bolts: ASTM A307 Grade A, or SAE J429 Grade 2
  - Nuts: ASTM A563 Grade DH
  - Washers: ASTM F436 Type 1
  - Guy Wires: ASTM A475 Grade EHS
  - Bridge Strand: ASTM A586 Grade 1
- After fabrication, hot-dip galvanize all steel items, UNO. Galvanize per ASTM A123, ASTM A153/A153M, or ASTM A653 G90, as applicable. ASTM A490 bolts shall not be hot-dip galvanized, but shall instead be coated with Magni 565 or EOR approved equivalent, per ASTM F2833.
- Contractor Personnel shall not drill holes in any new or existing structural members, other than those drilled holes shown on structural drawings, without the approval of the EOR.
- For a list of Crown-approved cold galvanizing compounds, refer to ENG-STD-10149, "Tower Protective Coatings Guidelines".
- All exposed structural steel as the result of this scope of Work including welds (after final inspection of the weld by the CWI), field drilled holes, and shaft interiors (where accessible), shall be cleaned and two (2) coats cold galvanizing shall be applied by brush in accordance with ENG-STD-10149, "Tower Protective Coatings Guidelines". Photo documentation is required to be submitted to the MI Inspector.
- If removal of existing modifications is required per the modification scope, the GC shall clean and cold galvanize any existing empty bolt holes, UNO. If additional unexpected, oversized, or slotted holes are found, the GC shall contact the EOR and Crown POC for guidance prior to proceeding with the modifications.
- All Work involving base plate grout scope items or resulting in disturbance of base plate grout shall reference ENG-STD-10323, "Base Plate Grout", and shall follow any Base Plate Grout Removal Notes contained herein.


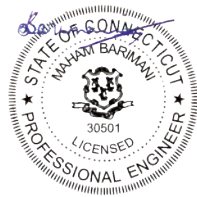
- All tower grounding affected by the Work shall be repaired or replaced in accordance with OPS-STD-10090, "Tower Grounding", and OPS-BUL-10133, "Grounding Repair Recommendation".
- If scope of modification requires removal or covering of tower ID tag, the tag must be replaced.
- Any hardware shall be replaced.
- All joints shall be repaired.
- A nut and washer shall be replaced.
- All joints of Mast GC shall be repaired.
- Blind bolts shall be replaced.
- If AST pre-tensioning conditions are not met, the structure shall be repaired.
- All pre-tensioning end of the bolts shall be repaired.



ETS REDLINE DRAWINGS  
PASSING MI

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DATE: 11/12/20

									
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**CONCRETE NOTES**

- All concrete work shall be in accordance with ACI 301 specifications for structural concrete (latest edition). All concrete shall have a minimum 28 day compressive strength of 4000 PSI and air entrained at 6% ± 1.5%.
- Prepare and submit batch tickets for each type and strength of concrete. All concrete parameters (strength, slump, water content, aggregates, additives, etc.) shall meet the requirements of the concrete design mix engineer.
- For field mixing, prepare and submit mix designs for pre-approval for each type and strength of concrete in accordance with ACI 211, "Proportioning Concrete Mixtures", and ACI 301, "Specifications for Structural Concrete".
- All concrete shall be normal weight concrete.
- Slump test shall be made in accordance with ASTM C143. The allowable concrete slump shall be 4 inches unless super-plasticizers are used.
- The engineer shall pre-approve superplasticizer use.
- Cement shall conform to ASTM C150 Type II. Fine aggregate shall conform to ASTM C33. Course aggregate shall be gravel or crushed stone conforming to ASTM C33. maximum aggregate size shall be 3/4".
- Water shall be clean and free from oils, acids, alkalis, and organic materials. No additional water shall be added to the concrete at the job site.
- Do not use chloride-containing admixtures.
- Air entraining admixtures shall conform to ASTM C260.
- Hot weather concrete placement shall comply with ACI 305R. Cold weather concrete placement shall comply with ACI 306.1.
- Concrete shall be placed within 24 hours of excavation inspections. The contractor shall be responsible for protecting exposed excavations prior to concrete placement.
- Place concrete by using a chute or hopper device such that concrete shall not free fall from a height greater than 5 feet. Deposit concrete within the center of the steel reinforcing cage to prevent segregation.
- Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 309R. Do not use vibrators to transport concrete.
- Concrete shall be cured in accordance with ACI 301. When applicable, curing compounds shall be water clear, styrene acrylate type with a minimum solids content of 30%. Application shall be in conformance with manufacturer's instructions.

**CONCRETE REINFORCING STEEL NOTES**

- All reinforcing steel shall be deformed billet steel conforming to ASTM A615, Grade 60 unless noted otherwise.
- Reinforcing steel shall be detailed, fabricated, bent and placed in accordance with the CRSI Manual of Standard Practice and the ACI 315 (latest edition).
- Welding of reinforcing and embedments is prohibited.
- All reinforcing steel shall have a minimum three (3) inches concrete coverage unless noted otherwise.
- Spacing devices shall be used as required to maintain the side and bottom clearance between the steel reinforcement and excavation.


**If acceptable with 95% of design strength at 7 days, we would like to proceed with finalizing the MI and Foundation reports for this site. (EOR Approved)**

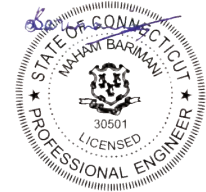


**ETS REDLINE DRAWINGS  
PASSING MI**

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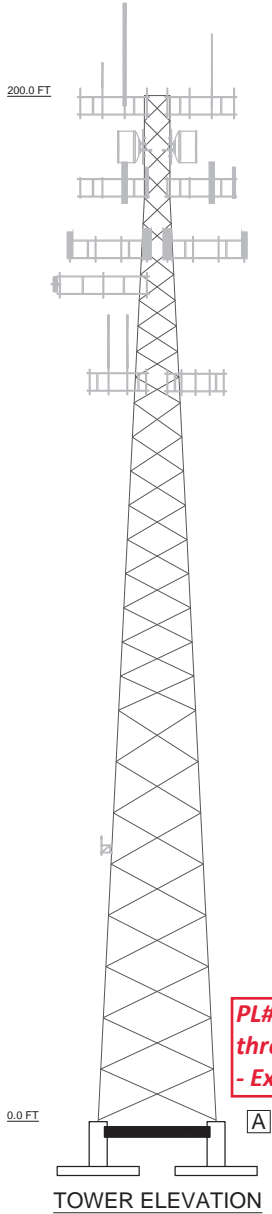
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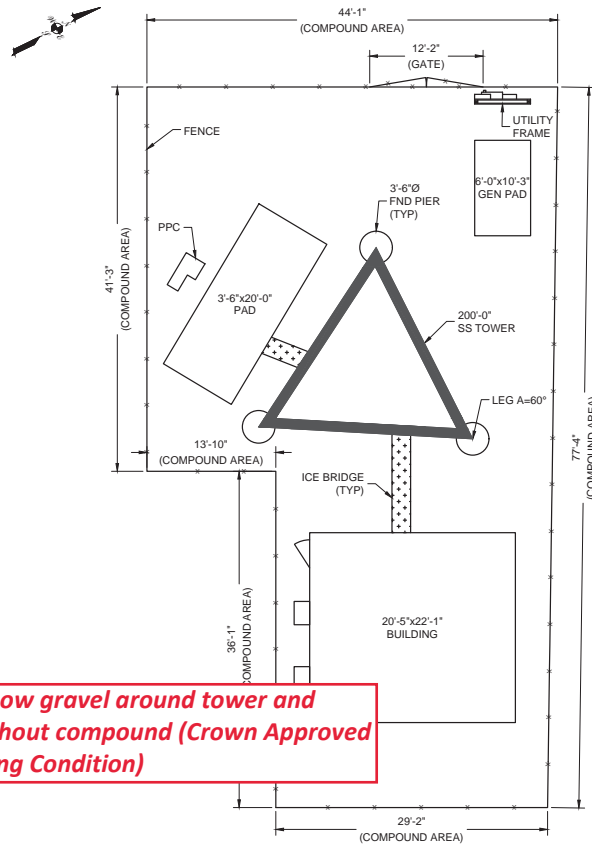


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TOWER MODIFICATION SCHEDULE			
ELEVATION (FT)	TOWER MODIFICATION DESCRIPTION	REFERENCE SHEET	
A	0.0	ADD NEW CONCRETE GRADE BEAM BETWEEN EACH FOUNDATION PIER	S-6
PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.			
FOR PARTS NOT DETAILED WITHIN THE DRAWING AND STARTING WITH "CCI-", SEE THE FOLLOWING CATALOG FOR DETAILS: CED-CAT-10301, GUYED TOWER STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS/ CED-CAT-10302, SELF SUPPORT TOWER STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS			



**PL#1: Low gravel around tower and throughout compound (Crown Approved - Existing Condition)**

- (OTHER CONSIDERED EQUIPMENT)
- (1) 1/2" TO 53 FT LEVEL
  - (4) 1-1/4" TO 170 FT LEVEL
  - (1) 1/2" TO 198 FT LEVEL

CLIMBING LADDER W/ SAFETY CLIMB

LEG B

- (OTHER CONSIDERED EQUIPMENT)
- (1) 1" CONDUIT TO 215 FT LEVEL
  - (1) 1/2" TO 56 FT TOWER LIGHTING
  - (1) 3/8" TO 100 FT TOWER LIGHTING
  - (1) 3/4" TO 200 FT TOWER LIGHTING
  - (3) 1/2" TO 144 FT LEVEL
  - (2) 7/8" TO 144 FT LEVEL
  - (1) 1/2" TO 163 FT LEVEL
  - (1) 1/2" TO 198 FT LEVEL
  - (3) 7/8" TO 198 FT LEVEL



**ETS REDLINE DRAWINGS PASSING MI**

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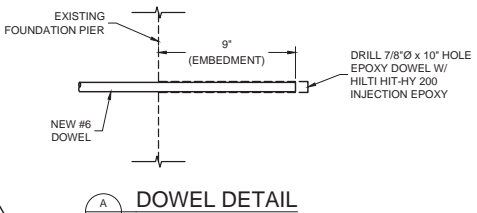
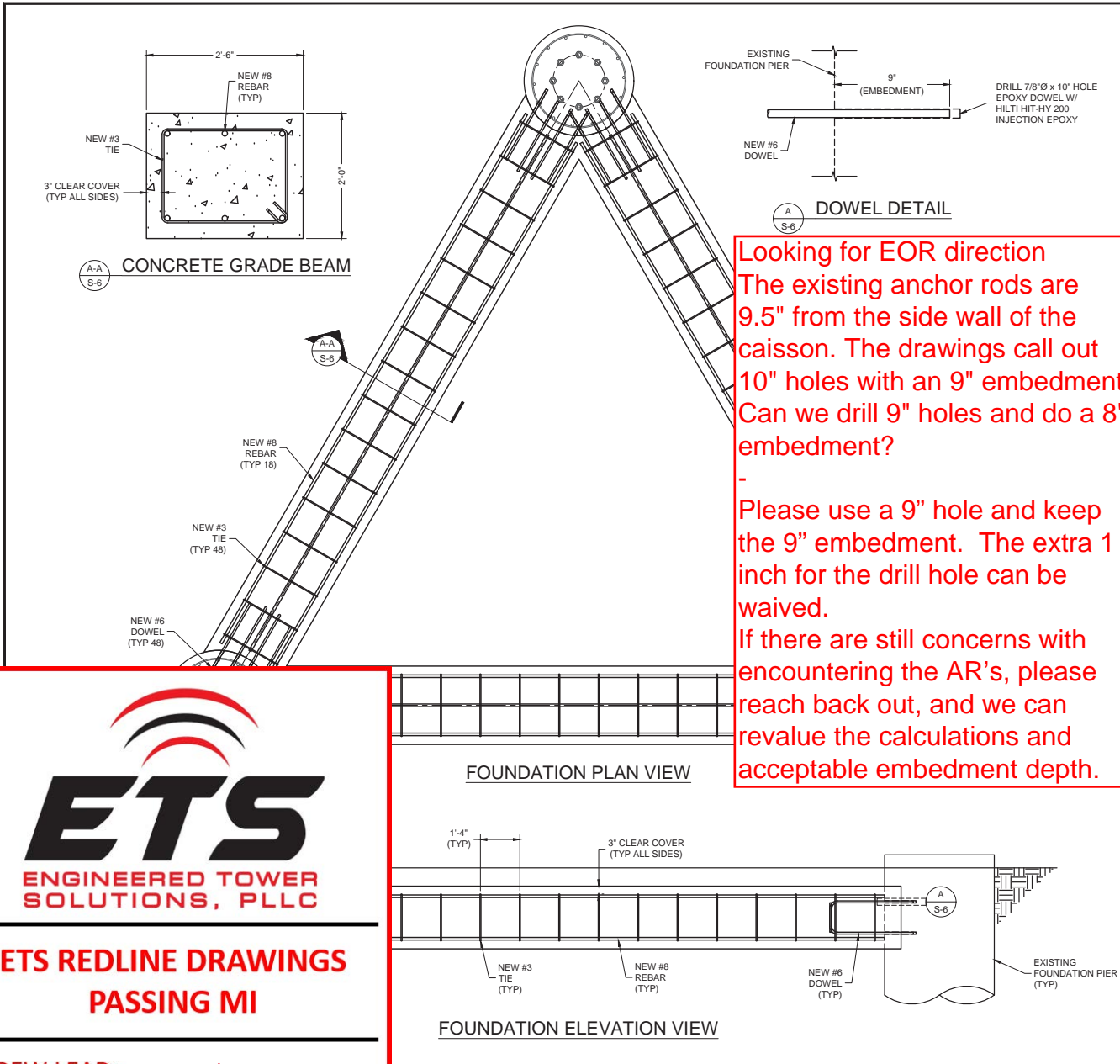


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**TOWER MODIFICATION SCHEDULE**

**S-5** REV 0



Looking for EOR direction  
 The existing anchor rods are 9.5" from the side wall of the caisson. The drawings call out 10" holes with an 9" embedment. Can we drill 9" holes and do a 8" embedment?  
 -  
 Please use a 9" hole and keep the 9" embedment. The extra 1 inch for the drill hole can be waived.  
 If there are still concerns with encountering the AR's, please reach back out, and we can revalue the calculations and acceptable embedment depth.

NOTES:


1. TAKE ALL MEASUREMENTS NECESSARY TO AVOID DAMAGING EXISTING REINFORCING BARS DURING DRILLING OPERATIONS. MINOR ADJUSTMENT TO PROPOSED LOCATION OF NEW DOWELS MAY BE REQUIRED.
2. CORED HOLES SHALL BE MECHANICALLY ROUGHENED USING A CARBIDE HOLE ROUGHENER OR EQUIVALENT. BRUSHING WITH A NYLON OR WIRE BRUSH SHALL BE USED IN THE PROCESS OF HOLE CLEANING, BUT DOES NOT SATISFY THE HOLE ROUGHENING REQUIREMENT.
3. FOLLOW EPOXY MANUFACTURER'S RECOMMENDATIONS FOR HOLE CLEANING, HANDLING OF EPOXY, AS WELL AS ALL INSTALLATION INSTRUCTIONS AND REQUIREMENTS.
4. ALL HOLES SHALL BE DRY PRIOR TO PLACING EPOXY.
5. EXISTING FOUNDATION SHOULD BE CLEANED OF GREASE, DIRT & LOOSE DEBRIS PRIOR TO PLACING NEW CONCRETE. APPLY AN EPOXY BONDING AGENT TO ALL SURFACES BETWEEN OLD & NEW CONCRETE. SEAL ALL EXPOSED JOINTS BETWEEN OLD & NEW CONCRETE FOLLOWING CONSTRUCTION.
6. CONCRETE SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 24 HOURS BEFORE BACKFILLING & COMPACTION WITH HANDHELD VIBRATORY EQUIPMENT. FOR LARGER VIBRATION DEVICES, A MINIMUM OF 3 DAYS OF CONCRETE CURE TIME IS REQUIRED.
7. BACKFILL IS TO BE MADE IN LIFTS NOT TO EXCEED 8 INCHES. EACH LIFT IS TO BE COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 SPECIFICATIONS. EXCAVATED AREA TO HAVE A MINIMUM 6" MOUND ABOVE NATURAL GROUND SURFACE WHEN COMPLETED. NO FROZEN MATERIAL, LARGE ROCKS OR ORGANIC MATERIAL IS TO BE USED FOR BACKFILL.
8. EXISTING WAVEGUIDE POSTS & GROUND LEADS MAY REQUIRE TEMPORARY SHORING (OR RELOCATION - FIELD VERIFY) PRIOR TO EXCAVATION.
9. CONTRACTOR SHALL ALTERNATE HOOK LOCATION AND DRILLED HOLE LOCATIONS ON ADJACENT DOWEL LAYERS TO AVOID INTERFERENCE ISSUES.
10. CONTRACTOR TO DETERMINE CUBIC YARDS OF CONCRETE REQUIRED.
11. REFERENCE S-4 FOR ADDITIONAL CONCRETE AND REBAR NOTES.

**ETS REDLINE DRAWINGS PASSING MI**

CREW LEAD: Hunter Thomas  
 DATE: 11/12/20

<small>THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF CROWN CASTLE. IT IS PRODUCED SOLELY FOR USE BY CROWN CASTLE AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF CROWN CASTLE.</small>			
NO.	DATE	DESCRIPTION	BY
REVISIONS			
SITE NAME: JOHN TOM HILL BU NUMBER: 871584 WO NUMBER: 1853234 SITE ADDRESS: 115 BIRCH MTN. ROAD GLASTONBURY, CT 06033 HARTFORD COUNTY, USA			
ENG/OA BY: DBS		DATE: 06/03/20	
DFT BY: TE		DATE: 06/04/20	
DFT/OA BY: BF		DATE: 06/05/20	
APRVD BY: AJG		DATE: 06/05/20	
SCALE: N.T.S.			
Jun 8 2020 1:22 PM			
DETAILS			
S-6			REV 0

REBAR SCHEDULE			
BAR SIZE	TYPE	BENDING DIAGRAM	QUANTITY REQUIRED
#8	STRAIGHT		18
#3	TIES	 R 3/4" (TYP) 135° TIE HOOK (TYP) 3" (TYP)	48
#6	DOWELS	 R2 1/4" (TYP) 1'-0\""/>	48




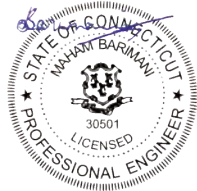
**ETS**  
ENGINEERED TOWER SOLUTIONS, PLLC

---

**ETS REDLINE DRAWINGS  
PASSING MI**

---

CREW LEAD: Hunter Thomas  
DATE: 11/12/20

									
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 60%;">DESCRIPTION</th> <th style="width: 10%;">BY</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">REVISIONS</td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION	BY	REVISIONS				SITE NAME: JOHN TOM HILL BU NUMBER: 871584 WO NUMBER: 1853234 SITE ADDRESS: 115 BIRCH MTN. ROAD GLASTONBURY, CT 06033 HARTFORD COUNTY, USA
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 <p>Jun 8 2020 1:22 PM</p>									
REBAR SCHEDULE									
<table border="1" style="margin: auto;"> <tr> <td style="font-size: 24px; font-weight: bold;">S-7</td> <td style="font-size: 10px;">REV</td> </tr> <tr> <td></td> <td style="text-align: center;">0</td> </tr> </table>		S-7	REV		0				
S-7	REV								
	0								



## **9.2.2 EOR RFI FORMS**

## General Information

Company:	Sabre Industries	Phone #:	936-206-1684
Email	pfeora@sabreindustries.com	GC Project #:	469504
BU #:	871584	Crown POC:	Dan Vadney
Site Name:	John Tom Hill, CT	EOR:	Crown Castle
WO:	1853234	EOR Project #:	

## Instructions

### General Contractor(GC) to Complete Engineering Issue Section

*RFIs shall be submitted to the EOR prior to deviating from the original design drawings. This includes changes required based on the pre-fabrication mapping. Changes required based on the mapping shall be documented in the EOR RFI Form and submitted to the EOR alongside shop drawings.*

*RFIs shall be submitted for configuration and material changes. Approved changes shall be documented on the GC As-builts and shall require Crown approval if changes impact structural capacity, climbing facilities, appurtenances, or future maintenance of the tower. See CED-SOW-10007 for further guidance.*

**Issue Type Dropdown Menu** - select the reason for the question from the drop down

- **Drawing Review Waiver** – Requesting a waiver of the shop drawing review prior to the start of construction.
- **Drawing Approval/No Deviation** – For shop drawing review when the drawings do not deviate from the original design drawings.
- **Drawing Approval/Deviation** – For shop drawing review when the drawings deviates from the original design drawing. The drawings should highlight any and all deviations from the original drawings. In addition, in the Engineering Issue box a description of the changes should be given with a reason for the deviation.
- **Clarification** –If a further explanation of the design is needed to properly fabricate or install the modification as intended.
- **Change Request** – If seeking approval for a deviation from the design documents. This should be used for changes that are outside of the shop drawing review process.
- **Direction** – If a course of action is needed from the EOR to proceed with the installation of the modifications as designed.
- **Interference/Field Issue** – If there is a fit up issue with the modification as designed due to a field condition. This should be used for field issues outside of the shop drawing review process.
- **Other** – All other requests.

**Attachments** – When sketches, photos, and/or drawings are attached select "Yes" in the drop down.

**Engineering Issue Box**– This space should contain a detailed explanation of the question along with any other information that the EOR might need to completely answer the inquiry. **As part of this description, please provide any information regarding contributing factors and possible resolutions based on your capabilities in the field and general means and methods.**

### Engineer of Record(EOR) to Complete Resolution Section

**Resolution Box** – This space shall contain the resolution from the EOR or approval of the option provided by the contractor.

**Drawing Change Needed** – If this is marked 'Yes' then a drawing revision is required based upon the resolution.

**Crown Approval** – If this is marked 'Needed' then Crown must be contacted for approval of the resolution.

**Sketch/Drawing Attached** – If this is marked 'Yes' then there is an illustration attached as part of the resolution.

**ESP #** – Associated ESP # should be included, if applicable.

**Resolved By** – The first and last name of the Engineer that approved the resolution should be entered with the date.

**Notes:** This RFI form is for the purpose of addressing technical and construction related questions and issues. Final work authorization shall be approved by the Crown POC prior to proceeding with any work that deviates from the original design, scope, price and/or schedule. This form is not an authorization of a change order.

**Engineering Issue**

Issue Type:	Other	Attachments:	No
-------------	-------	--------------	----

Looking for EOR direction

The existing anchor rods are 9.5" from the side wall of the caisson. The drawings call out 10" holes with an 9" embedment. Can we drill 9" holes and do a 8" embedment?

Submitted by:		Date:	
---------------	--	-------	--

**Resolution**

Drawing Change:	No	Crown Approval	Not Needed
-----------------	----	----------------	------------

Sketch/Drawing Attached:	No	ESP #:	5648981
--------------------------	----	--------	---------

Please use a 9" hole and keep the 9" embedment. The extra 1 inch for the drill hole can be waived.

If there are still concerns with encountering the AR's, please reach back out, and we can revalue the calculations and acceptable embedment depth.

Resolved By:	Drew Stephens	Date:	10/27/20
--------------	---------------	-------	----------

### **9.2.2.1 CROWN APPROVAL**

## Jenifer Head

---

**From:** Barimani, Maham <Maham.Barimani@crowncastle.com>  
**Sent:** Tuesday, November 17, 2020 9:22 AM  
**To:** Jenifer Head; EORapproval  
**Cc:** Vadney, Dan; Phillip Feora; Ty White; Hunter Thomas  
**Subject:** RE: BU#871584 - John Tom Hill - Concrete Break 7-Day

Hi Jennifer,

The results are acceptable.

Thanks,  
Maham

**MAHAM BARIMANI** P.E., P.ENG.  
Sr. Project Engineer  
T: (724) 416-2638

**CROWN CASTLE**  
2000 Corporate Drive, Canonsburg, PA 15317  
[CrownCastle.com](http://CrownCastle.com)

---

**From:** Jenifer Head <Jenifer.Head@ets-pllc.com>  
**Sent:** Friday, November 13, 2020 3:39 PM  
**To:** EORapproval <EOR.Approval@crowncastle.com>; Barimani, Maham <Maham.Barimani@crowncastle.com>  
**Cc:** Vadney, Dan <Dan.Vadney@crowncastle.com>; Phillip Feora <pfeora@sabreindustries.com>; Ty White <Ty.White@ets-pllc.com>; Hunter Thomas <Hunter.Thomas@ets-pllc.com>  
**Subject:** BU#871584 - John Tom Hill - Concrete Break 7-Day

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

EOR,

Please review the attached 7-day break results for the abovementioned site. If acceptable with 95% of design strength at 7 days, we would like to proceed with finalizing the MI and Foundation reports for this site.

Thank you!



**Jenifer Head**  
MI Project Manager – Inspections Division  
**Engineered Tower Solutions, PLLC**  
3227 Wellington Court | Raleigh, NC 27615  
Mobile: (919) 819-2523 | Office: (919) 782-2710  
Email: [Jenifer.Head@ets-pllc.com](mailto:Jenifer.Head@ets-pllc.com)

*Supporting the development and maintenance of wireless infrastructure, enabling the future of communication*

# CONCRETE COMPRESSIVE STRENGTH TEST REPORT

# Terracon

Report Number: J2201160.0001A  
Service Date: 11/06/20  
Report Date: 11/13/20 Revision 1 - 7-day results  
Task:

201 Hammer Mill Rd  
Rocky Hill, CT 06067-3768  
860-721-1900

## Client

Engineered Tower Solutions, PLLC  
Attn: Tooie Hales  
3227 Wellington Court  
Raleigh, NC 27615

## Project

Crown Castle John Tom Hill Tower Modifications  
115 Birch Mountain Road  
Glastonbury, CT 06033

Project Number: J2201160

## Material Information

Specified Strength: 4,500 psi @ 28 days

Mix ID: 1C45343A  
Supplier: F&F Concrete Corp  
Batch Time: 1344 Plant: Plantsville, CT  
Truck No.: 126 Ticket No.: 404049

## Sample Information

Sample Date: 11/06/20 Sample Time: 1448  
Sampled By: Jourdan Corilla  
Weather Conditions: Clear  
Accumulative Yards: 4/7 Batch Size (cy): 7  
Placement Method: Direct Discharge  
Water Added Before (gal):  
Water Added After (gal):  
Sample Location: Center of West side of footings (refer to field sketch)

## Field Test Data

Test	Result	Specification
Slump (in):	4	3 - 5
Air Content (%):	5.9	4.5 - 7.5
Concrete Temp. (F):	80	
Ambient Temp. (F):	69	
Plastic Unit Wt. (pcf):		
Yield (Cu. Yds.):		

Placement Location: Footings connected to existing foundation piers

## Laboratory Test Data

Set No.	Specimen ID	Avg Diam. (in)	Area (sq in)	Date Received	Weight (lbs)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)	Fracture Type	Tested By
1	A	4.01	12.63	11/10/20	8.62	11/13/20	7	53,810	4,260	1	MEG
1	B	4.00	12.57	11/10/20	8.69	12/04/20	28				
1	C	4.00	12.57	11/10/20	8.65	12/04/20	28				
1	D	4.00	12.57	11/10/20	8.65	12/04/20	28				
1	E	4.00	12.57	11/10/20	8.67	01/01/21	56				

Initial Cure: Outside Plastic Lids

Final Cure: Moist Room

Comments: Not tested for plastic unit weight.

## Samples Made By: Terracon

Services: Obtain and test in accordance with ASTM Standards samples of fresh concrete at placement locations. Initial curing temperatures were not recorded unless indicated above. JLD=Jamie Duff, MEG=Mary Gotlibowski for technician initials.

Terracon Rep.: Jourdan Corilla

Reported To: Herbert Tooie Hales with ETS

Contractor: Cod/Trac Solutions

## Report Distribution:

(1) Engineered Tower Solutions, PLLC, Tooie Hales

## Reviewed By:

James Flynn  
Department Manager - Material Services

Test Methods: ASTM C 31, ASTM C39, ASTM C138, ASTM C143, ASTM C172, ASTM C231, ASTM C1064, ASTM C1231

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

### **9.2.3 PUNCH LIST DOCUMENTATION**

Punchlist BU # 871584 - John Tom Hill

Status: Complete

Project Information

Project Contacts	Punchlist Issuance #	Date	Visit
Engineered Tower Solutions, PLLC	1	11/12/2020	OnSite
Hunter Thomas			
1892647			
Sabre			
Dan Vadney			
Crown Castle			
871584			
John Tom Hill			

Structural Impact To Capacity  
No  
# of Punchlist Items  
0

Zero Punchlist Items

NonConformance Impact to Capacity  
(Shall Be Provided by EOR)

New Overall Structure Capacity Rating :

N/A


Documentation Complete / Documentation Missing

MI Checklist Documents

MI Checklist Documents	Required	Submitted	Requirement Waived	Date Compliance Verified	Status
<b>PRE-CONSTRUCTION</b>					
EOR Approved Shop Drawings	N/A	N/A	N/A	-	N/A
Fabrication Inspection	N/A	N/A	N/A	-	N/A
Fabricator Certified Weld Inspection	N/A	N/A	N/A	-	N/A
Material Test Report (MTR)	Required	11/9/2020	N/A	11/12/2020	Complete
Fabricator NDE Report	N/A	N/A	N/A	-	N/A
NDE Insp. Report of Monopole Base Plate	N/A	N/A	N/A	-	N/A
Packing Slips	Required	11/9/2020	N/A	11/12/2020	Complete
Additional Pre-Construction Inspections	N/A	N/A	N/A	-	N/A
Pre-Construction Document Comments					
<b>CONSTRUCTION</b>					
Foundation Inspections	Required	11/9/2020	N/A	11/12/2020	Complete
Post-Installed Anchor Rod Verification	N/A	N/A	N/A	-	N/A
Base Plate Grout Verification	N/A	N/A	N/A	-	N/A
Contractor's Certified Weld Inspection	N/A	N/A	N/A	-	N/A
On-Site Cold Galvanizing Verification	N/A	N/A	N/A	-	N/A
Tension Twist and Plumb Report	N/A	N/A	N/A	-	N/A
GC As-Built Drawings	Required	11/9/2020	N/A	11/12/2020	Complete
Additional Construction Inspections	N/A	N/A	N/A	-	N/A
Construction Document Comments					
<b>POST-CONSTRUCTION</b>					
Construction Compliance Verification	Required	11/9/2020	N/A	11/12/2020	Complete
Post-Installed Anchor Rod Pull-Out Testing	N/A	N/A	N/A	-	N/A
Additional Post-Construction Inspections	N/A	N/A	N/A	-	N/A
Post-Construction Document Comments					
MI Checklist Comments					

Nonconformance # 1

MI Vendor			
Nonconformance - Issue Description			
Low gravel around tower and throughout compound			
Section/Height/Elev	Panel	Leg	Face/Flat
0' 0"	n/a	n/a	n/a



Crown
Crown Approves - Existing Condition
EOR
N/A
Capacity Impact As Is
N/A
EOR Feedback By
-

Final Crown Approval	
Crown Approval By	
Dan Vadney	
MI Vendor	
Status of Correction	Type of Verification
Correction Not Required	EOR/Crown Approved

MI Comments:	Dirt and geofabric exposed throughout compound
EOR Comments:	Enter Comments
Crown Comments:	Enter Comments



# CONSTRUCTION **DOCUMENTATION**

### **9.3.5 MATERIAL TEST REPORTS (MTR)**

<b>Byer Steel Rebar</b> f/k/a Gastrich Rebar LLC 200 W North Bend Rd Cincinnati, OH 45216- Phone: (513) 821-6400 FAX: (513) 693-4271	SO NUMBER	RELEASE NUMBER	REQ. DELIVERY DATE	PAGE
	SO-0000038134	00001		1 of 1
	CUSTOMER			CC
Trac Solutions LLC			BY	DB

MATERIAL TYPE	REFERENCE	DRAWING ID	DESCRIPTION
Rebar, Grade 61560, Black	JOHN TOM HILL		00 FAB

Item	Qty	Size	Length	Mark	Shape	Lbs	A	B	C	D	E	F/R	G	H	J	K	O	BC
------	-----	------	--------	------	-------	-----	---	---	---	---	---	-----	---	---	---	---	---	----

\*\*\* MILL CERTS REQUIRED \*\*\*

1	18	8	19-06	8 STRT		937													SS
	18.					937.													
2	48	6	3-06	6 DOWELS	17	252		1-00	2-06										B204
	48.					252.													
3	48	3	7-08	3 TIE	T1	138	0-04	*2-00*	*1-06*	*2-00*	*1-06*		0-04						B205
	48.					138.													

Total Weight: 1,327 Lbs

Longest Length: 19-06

\*\*\*\*\*  
 CUSTOMER NOTE:  
 TO OBTAIN ALLOWANCE FOR SHORTAGE OR DAMAGED MATERIAL, CUSTOMER MUST ADVISE  
 SHIPPER UPON RECEIPT OF MATERIAL. CUSTOMER HAS NO PERMISSION TO  
 REFABRICATE MATERIAL RESULTING IN A BACKCHARGE TO SHIPPER WITHOUT WRITTEN  
 CONSENT OF SHIPPER.  
 \*\*\*\*\*

**WEIGHT SUMMARY**

TOTAL				STRAIGHT			LIGHT BENDING			HEAVY BENDING		
SIZE	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS
<b>Rebar, Grade 61560, Black</b>												
3	1	48	138	0	0	0	1	48	138	0	0	0
6	1	48	252	0	0	0	0	0	0	1	48	252
8	1	18	937	1	18	937	0	0	0	0	0	0
	3	114	1,327	1	18	937	1	48	138	1	48	252

Total Weight: 1,327 Lbs

Longest Length: 19-06

### **9.3.6 PACKING SLIPS**

<b>Byer Steel Rebar</b> f/k/a Gastrich Rebar LLC 200 W North Bend Rd Cincinnati, OH 45216- Phone: (513) 821-6400 FAX: (513) 693-4271		SO NUMBER	RELEASE NUMBER	REQ. DELIVERY DATE	PAGE
		SO-00000381	00001		1C
		CUSTOMER			CC
		Trac Solutions LLC		JYHX	BY
				DB	
MATERIAL TYPE	REFERENCE	DRAWING ID	DESCRIPTION		
Rebar, Grade 61560, Black	JOHN TOM HILL		00 FAB		
COMMENT PAGE					

### **9.3.7 FOUNDATION INSPECTIONS**

Date: November 16, 2020  
Engineered Tower Solutions, PLLC  
3227 Wellington Court  
Raleigh, NC 27615  
Office: (919) 782-2710



## Foundation Modification Report *Crown Castle Site Information*

**Crown POC:** Dan Vadney  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
**BU Number:** 871584  
**Site Name:** John Tom Hill  
**Site Address:** 115 Birch Mtn. Road, Glastonbury, Connecticut 06033, Hartford County, USA

**Latitude** 41° 42' 32.24", **Longitude** -72° 28' 24.41"  
**200 Foot – Self Support Tower**

Engineered Tower Solutions, PLLC. is pleased to submit this “**Foundation Modification Report**” to Crown Castle for the modification/reinforcement to the subject structure. This Foundation Modification Inspection was performed in accordance with Crown Castle CED-SOW-10144 New or Modified Foundation Installation Inspection SOW, Contract Documents, and Crown Castle Purchase Order number 1892647.

The purpose of this inspection is to confirm that the foundation modification, configuration, and workmanship are in accordance with the contract document(s) listed below. The inspection is not a review of the adequacy or effectiveness of the modification/reinforcement solution.

### **Modification Design Information:**

**SDD Vendor:** Crown Castle  
**SDD Date:** June 8, 2020  
**Vendor Job Number:** 1853234  
**Name of EOR:** Maham Barimani, PE  
**Source of SDD:** 9122283

### **General Inspection Information:**

**Company:** Engineered Tower Solutions, PLLC  
**Contact:** Herbert Hales, P.E.  
**Dates on site:** 11/5/2020 - 11/6/2020  
**General Contractor (GC):** Sabre  
**GC Contact:** Phillip Feora  
**GC Dates on Site:** 10/28/20 – 11/10/20

Based on our inspection, Engineered Tower Solutions, PLLC. determines this project:

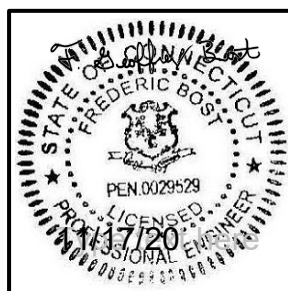
**PASSING FOUNDATION MODIFICATION**

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

We at Engineered Tower Solutions, PLLC. 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 contact us.

Respectfully submitted,

Frederic Bost, PE  
President  
Engineered Tower Solutions, PLLC



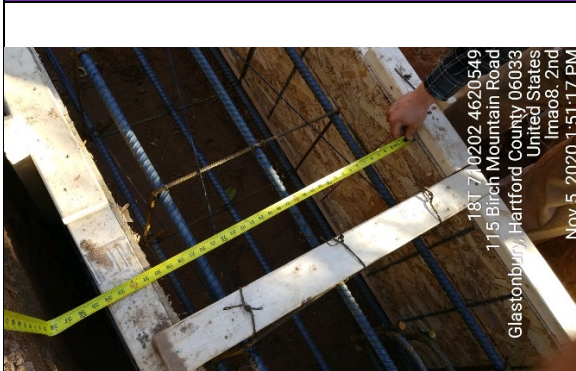

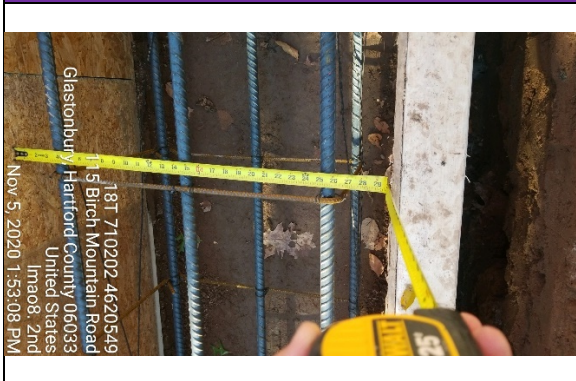
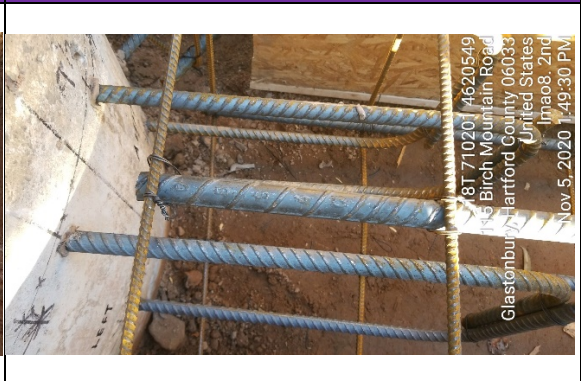


Section 1.0: Executive Summary	
<b>Summary of Findings:</b>	The foundation inspections were performed by Andrew Carlson, E.I. on 11/5 and 11/6 of 2020. Tooie Hales, P.E. provided oversight and performed the onsite rebar inspection and concrete sampling. All deviations were reported and approved by the EOR and reflected in the report.
<b>PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)</b>	

Section 2.0: Excavation and Soil Summary		
<b>Foundation Excavation Summary:</b>	Was Excavation to the proper depth and size?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Will fill material be needed? (stone or engineered fill):	<input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> N/A
	Is the foundation bottom free from standing water or mud?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Is the foundation bottom free from foreign debris?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Were deviations, if any reported to the EOR?	<input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
<b>Soils Information:</b>	Was water seepage encountered on site?	<input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> N/A
	Were there any side wall cave ins during the pour?	<input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> N/A
	If applicable, was the modified proctor met for fill soils?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were all notes on compaction followed, if not was the EOR notified?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was the soil bearing capacity verified prior to concrete placement? (probe – 2000 psf or under, penetrometer – 2000 psf and over):	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
<b>Notes:</b>		
<b>PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)</b>		



Section 2.0 – Supporting Photos

 <p>18T 710202 4620549 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Ima08_2nd Nov 5, 2020 1:47:05 PM</p>	 <p>18T 710202 4620549 115 Birch Mountain Road Glastonbury, Hartford County United States Ima Nov 5, 2020 1:56</p>
<p>Excavation/formwork around existing pier</p>	<p>Length between piers measured</p>
 <p>18T 710202 4620549 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Ima08_2nd Nov 5, 2020 1:51:17 PM</p>	 <p>18T 710204 4620545 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Ima08_2nd Nov 5, 2020 1:46:00 PM</p>
<p>Width between forms measured</p>	<p>Depth of forms, clean bottom</p>
 <p>18T 710202 4620549 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Ima08_2nd Nov 5, 2020 1:53:08 PM</p>	 <p>18T 710201 4620549 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Ima08_2nd Nov 5, 2020 1:49:30 PM</p>
<p>Width measured</p>	<p>Tie-in to existing pier</p>

Section 3.0:		Reinforcing Steel Information
<b>Reinforcing Steel Information:</b>	Was all rebar used of the proper size?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was all rebar used of the proper grade?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Were all bars properly spaced, and if not were all deviations corrected or reported to the EOR?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	What doweling epoxy, if any, was used?	Hilti 200-A
	Was the doweling epoxy within it's expiration date?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was the entire doweling process able to be witnessed?	<input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> N/A
	If existing rebar was encountered when doweling, were holes reported to the EOR?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	What bonding agent was used for the interface of the existing foundation and new foundation, if applicable?	SIKA Pro Select
	Are all laps of the proper length?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Were all bars properly tied?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	90 degree hooks on cross ties	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
<b>Notes:</b>	<ol style="list-style-type: none"> <li>1. EOR approved dowel spacing to avoid existing rebar</li> <li>2. EOR approved 9.5" drilled hole/imbedment where anchors/rebar encountered</li> </ol>	
<b>PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)</b>		

## General Information

Company:	Sabre Industries	Phone #:	936-206-1684
Email	pfeora@sabreindustries.com	GC Project #:	469504
BU #:	871584	Crown POC:	Dan Vadney
Site Name:	John Tom Hill, CT	EOR:	Crown Castle
WO:	1853234	EOR Project #:	

## Instructions

### General Contractor(GC) to Complete Engineering Issue Section

*RFIs shall be submitted to the EOR prior to deviating from the original design drawings. This includes changes required based on the pre-fabrication mapping. Changes required based on the mapping shall be documented in the EOR RFI Form and submitted to the EOR alongside shop drawings.*

*RFIs shall be submitted for configuration and material changes. Approved changes shall be documented on the GC As-builts and shall require Crown approval if changes impact structural capacity, climbing facilities, appurtenances, or future maintenance of the tower. See CED-SOW-10007 for further guidance.*

**Issue Type Dropdown Menu** - select the reason for the question from the drop down

- **Drawing Review Waiver** – Requesting a waiver of the shop drawing review prior to the start of construction.
- **Drawing Approval/No Deviation** – For shop drawing review when the drawings do not deviate from the original design drawings.
- **Drawing Approval/Deviation** – For shop drawing review when the drawings deviates from the original design drawing. The drawings should highlight any and all deviations from the original drawings. In addition, in the Engineering Issue box a description of the changes should be given with a reason for the deviation.
- **Clarification** –If a further explanation of the design is needed to properly fabricate or install the modification as intended.
- **Change Request** – If seeking approval for a deviation from the design documents. This should be used for changes that are outside of the shop drawing review process.
- **Direction** – If a course of action is needed from the EOR to proceed with the installation of the modifications as designed.
- **Interference/Field Issue** – If there is a fit up issue with the modification as designed due to a field condition. This should be used for field issues outside of the shop drawing review process.
- **Other** – All other requests.

**Attachments** – When sketches, photos, and/or drawings are attached select "Yes" in the drop down.

**Engineering Issue Box**– This space should contain a detailed explanation of the question along with any other information that the EOR might need to completely answer the inquiry. **As part of this description, please provide any information regarding contributing factors and possible resolutions based on your capabilities in the field and general means and methods.**

### Engineer of Record(EOR) to Complete Resolution Section

**Resolution Box** – This space shall contain the resolution from the EOR or approval of the option provided by the contractor.

**Drawing Change Needed** – If this is marked 'Yes' then a drawing revision is required based upon the resolution.

**Crown Approval** – If this is marked 'Needed' then Crown must be contacted for approval of the resolution.

**Sketch/Drawing Attached** – If this is marked 'Yes' then there is an illustration attached as part of the resolution.

**ESP #** – Associated ESP # should be included, if applicable.

**Resolved By** – The first and last name of the Engineer that approved the resolution should be entered with the date.

**Notes:** This RFI form is for the purpose of addressing technical and construction related questions and issues. Final work authorization shall be approved by the Crown POC prior to proceeding with any work that deviates from the original design, scope, price and/or schedule. This form is not an authorization of a change order.

**Engineering Issue**

Issue Type:	Other	Attachments:	No
-------------	-------	--------------	----

Looking for EOR direction

The existing anchor rods are 9.5" from the side wall of the caisson. The drawings call out 10" holes with an 9" embedment. Can we drill 9" holes and do a 8" embedment?

Submitted by:		Date:	
---------------	--	-------	--

**Resolution**

Drawing Change:	No	Crown Approval	Not Needed
-----------------	----	----------------	------------

Sketch/Drawing Attached:	No	ESP #:	5648981
--------------------------	----	--------	---------





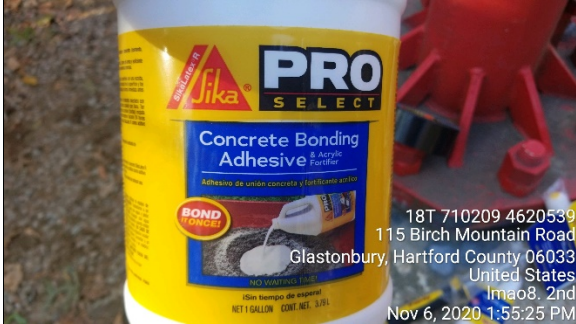

Please use a 9" hole and keep the 9" embedment. The extra 1 inch for the drill hole can be waived.

If there are still concerns with encountering the AR's, please reach back out, and we can revalue the calculations and acceptable embedment depth.

Resolved By:	Drew Stephens	Date:	10/27/20
--------------	---------------	-------	----------



Section 3.0 – Supporting Photos

 <p>18T 710207 4620542 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8_2nd Nov 5, 2020 1:44:53 PM</p>	 <p>18T 710203 4620540 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8_2nd Nov 5, 2020 1:45:21 PM</p>
<p>Spacing of dowels noted at piers</p>	<p>Projection of dowels</p>
 <p>18T 710196 4620550 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8_2nd Nov 5, 2020 2:09:18 PM</p>	 <p>18T 710207 4620544 27 Loomis Road Bolton, Tolland County 06043 United States Imao8_2nd Nov 5, 2020 2:02:05 PM</p>
<p>Rebar diameters checked</p>	<p>Doweling epoxy used</p>
 <p>18T 710209 4620539 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8_2nd Nov 6, 2020 1:55:25 PM</p>	 <p>18T 710203 4620543 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8_2nd Nov 6, 2020 2:48:15 PM</p>
<p>Bonding agent</p>	<p>Bonding agent applied</p>

<b>Byer Steel Rebar</b> f/k/a Gastrich Rebar LLC 200 W North Bend Rd Cincinnati, OH 45216- Phone: (513) 821-6400 FAX: (513) 693-4271	SO NUMBER	RELEASE NUMBER	REQ. DELIVERY DATE	PAGE
	SO-00000381	00001		1C
	CUSTOMER			CC
Trac Solutions LLC			BY	DB
MATERIAL TYPE	REFERENCE	DRAWING ID	DESCRIPTION	
Rebar, Grade 61560, Black	JOHN TOM HILL		00 FAB	
COMMENT PAGE				

<b>Byer Steel Rebar</b> f/k/a Gastrich Rebar LLC 200 W North Bend Rd Cincinnati, OH 45216- Phone: (513) 821-6400 FAX: (513) 693-4271	SO NUMBER	RELEASE NUMBER	REQ. DELIVERY DATE	PAGE
	SO-0000038134	00001		1 of 1
	CUSTOMER			CC
Trac Solutions LLC			BY	DB

MATERIAL TYPE	REFERENCE	DRAWING ID	DESCRIPTION
Rebar, Grade 61560, Black	JOHN TOM HILL		00 FAB

Item	Qty	Size	Length	Mark	Shape	Lbs	A	B	C	D	E	F/R	G	H	J	K	O	BC
------	-----	------	--------	------	-------	-----	---	---	---	---	---	-----	---	---	---	---	---	----

\*\*\* MILL CERTS REQUIRED \*\*\*

1	18	8	19-06	8 STRT		937													SS
	18.					937.													
2	48	6	3-06	6 DOWELS	17	252		1-00	2-06										B204
	48.					252.													
3	48	3	7-08	3 TIE	T1	138	0-04	*2-00*	*1-06*	*2-00*	*1-06*		0-04						B205
	48.					138.													

Total Weight: 1,327 Lbs

Longest Length: 19-06

\*\*\*\*\*  
 CUSTOMER NOTE:  
 TO OBTAIN ALLOWANCE FOR SHORTAGE OR DAMAGED MATERIAL, CUSTOMER MUST ADVISE  
 SHIPPER UPON RECEIPT OF MATERIAL. CUSTOMER HAS NO PERMISSION TO  
 REFABRICATE MATERIAL RESULTING IN A BACKCHARGE TO SHIPPER WITHOUT WRITTEN  
 CONSENT OF SHIPPER.  
 \*\*\*\*\*

**WEIGHT SUMMARY**

TOTAL				STRAIGHT			LIGHT BENDING			HEAVY BENDING		
SIZE	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS	ITEMS	PIECES	LBS
<b>Rebar, Grade 61560, Black</b>												
3	1	48	138	0	0	0	1	48	138	0	0	0
6	1	48	252	0	0	0	0	0	0	1	48	252
8	1	18	937	1	18	937	0	0	0	0	0	0
	3	114	1,327	1	18	937	1	48	138	1	48	252


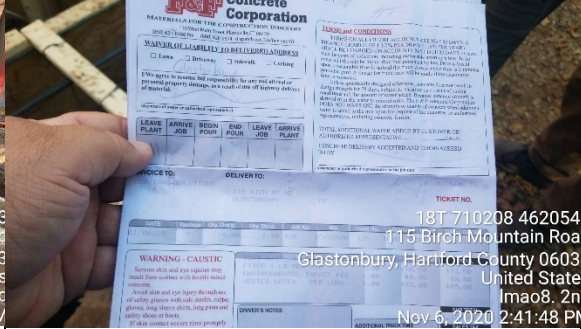



Total Weight: 1,327 Lbs

Longest Length: 19-06

Section 4.0:		Concrete Placement
<b>Concrete Placement Information</b>	Did the concrete delivered to site meet the minimum compressive strength of the design?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	If air entrainment was required, was it ordered?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was the concrete vibrated?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was the concrete placed as close to the final destination as possible?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was the concrete hold time within allowable?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was the slump within allowable?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Did the concrete meet the required strength after testing?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	Was a trimmie pipe used, if needed?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was formwork installed or verified?	<input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A
	What method of placement was used (Truck, pump, tremie, buggy)?	Truck
	Was the slab insulated after the pour? (if exposed to freeze/thaw cycles):	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	<b>Notes:</b>	
<b>PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)</b>		



Section 4.0 – Supporting Photos

 <p>18T 710206 462054 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8. 2nc Nov 6, 2020 2:48:11 PM</p>	 <p>18T 710208 462054 115 Birch Mountain Road Glastonbury, Hartford County 0603 United State Imao8. 2nc Nov 6, 2020 2:41:48 PM</p>
<p>Concrete placement in progress</p>	<p>Tickets checked</p>
 <p>18T 710206 462054 115 Birch Mountain Road Glastonbury, Hartford County 06033 United States Imao8. 2nc Nov 6, 2020 2:38:56 PM</p>	 <p>11/06/2020 17:39</p>
<p>Vibrator used</p>	<p>Concrete Installed</p>
 <p>11/07/2020 14:31</p>	<p>XXXX</p>
<p>Concrete Formwork removed</p>	<p>XXXX</p>

*F. Geoffrey Best*

# CONCRETE COMPRESSIVE STRENGTH TEST REPORT

# Terracon

Report Number: J2201160.0001A  
Service Date: 11/06/20  
Report Date: 11/13/20 Revision 1 - 7-day results  
Task:

201 Hammer Mill Rd  
Rocky Hill, CT 06067-3768  
860-721-1900

## Client

Engineered Tower Solutions, PLLC  
Attn: Tooie Hales  
3227 Wellington Court  
Raleigh, NC 27615

## Project

Crown Castle John Tom Hill Tower Modifications  
115 Birch Mountain Road  
Glastonbury, CT 06033

Project Number: J2201160

## Material Information

Specified Strength: 4,500 psi @ 28 days  
Mix ID: 1C45343A  
Supplier: F&F Concrete Corp  
Batch Time: 1344 Plant: Plantsville, CT  
Truck No.: 126 Ticket No.: 404049

## Sample Information

Sample Date: 11/06/20 Sample Time: 1448  
Sampled By: Jourdan Corilla  
Weather Conditions: Clear  
Accumulative Yards: 4/7 Batch Size (cy): 7  
Placement Method: Direct Discharge  
Water Added Before (gal):  
Water Added After (gal):  
Sample Location: Center of West side of footings (refer to field sketch)  
Placement Location: Footings connected to existing foundation piers

## Field Test Data

Test	Result	Specification
Slump (in):	4	3 - 5
Air Content (%):	5.9	4.5 - 7.5
Concrete Temp. (F):	80	
Ambient Temp. (F):	69	
Plastic Unit Wt. (pcf):		
Yield (Cu. Yds.):		

## Laboratory Test Data

Set No.	Specimen ID	Avg Diam. (in)	Area (sq in)	Date Received	Weight (lbs)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)	Fracture Type	Tested By
1	A	4.01	12.63	11/10/20	8.62	11/13/20	7	53,810	4,260	1	MEG
1	B	4.00	12.57	11/10/20	8.69	12/04/20	28				
1	C	4.00	12.57	11/10/20	8.65	12/04/20	28				
1	D	4.00	12.57	11/10/20	8.65	12/04/20	28				
1	E	4.00	12.57	11/10/20	8.67	01/01/21	56				

Initial Cure: Outside Plastic Lids

Final Cure: Moist Room

Comments: Not tested for plastic unit weight.

## Samples Made By: Terracon

Services: Obtain and test in accordance with ASTM Standards samples of fresh concrete at placement locations. Initial curing temperatures were not recorded unless indicated above. JLD=Jamie Duff, MEG=Mary Gotlibowski for technician initials.

Terracon Rep.: Jourdan Corilla

Reported To: Herbert Tooie Hales with ETS

Contractor: Cod/Trac Solutions

## Report Distribution:

(1) Engineered Tower Solutions, PLLC, Tooie Hales

## Reviewed By:

James Flynn  
Department Manager - Material Services

Test Methods: ASTM C 31, ASTM C39, ASTM C138, ASTM C143, ASTM C172, ASTM C231, ASTM C1064, ASTM C1231

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

Truck 123 Driver 776 User user Disp Ticket Num 404061 Ticket ID 144860 Time Date 14:52 11/6/20  
 Load Size 7.00 CY Mix Code 1045343A Returned Qty Mix Age Seq W Load ID 146000

Material	Design Qty	Required	Batched	% Var	% Moisture	Actual Wat
RM3/4T	1550.00 lb	10850.00 lb	10760.00 lb	-0.83%	M	
RM3/8T	310.00 lb	2170.00 lb	2180.00 lb	0.46%	M	
RMSAND	800.00 lb	5830.00 lb	5840.00 lb	0.03%	4.25% M	28.53 gl
RMSAND2	415.00 lb	3250.25 lb	3020.00 lb	-0.99%	5.00% M	17.23 gl
RMCEMENT	658.00 lb	4600.00 lb	4565.00 lb	-0.89%		
RMWATER	285.00 lb	1435.51 lb	1424.00 lb	-0.87%		170.64 gl
RMEBS	26.30 oz	184.10 oz	184.00 oz	-0.05%		
RMSIKA_AIR	3.60 oz	26.60 oz	25.00 oz	-6.02%		

Actual Num Batches: 1  
 Load Total: 27832 lb Design 0.433 Water/Cement 0.396 A Design 239.1 gl Actual 216.4 gl To Add: 22.7 gl  
 Slump: 1.20 in # This Water: 0.0 gl / CY

Truck 126 Driver 762 User user Disp Ticket Num 404049 Ticket ID 144855 Time Date 13:44 11/6/20  
 Load Size 7.00 CY Mix Code 1045343A Returned Qty Mix Age Seq W Load ID 146017

Material	Design Qty	Required	Batched	% Var	% Moisture	Actual Wat
RM3/4T	1550.00 lb	10850.00 lb	10840.00 lb	-0.09%	M	
RM3/8T	310.00 lb	2170.00 lb	2140.00 lb	-1.38%	M	
RMSAND	800.00 lb	5830.00 lb	5800.00 lb	-0.38%	4.25% M	28.63 gl
RMSAND2	415.00 lb	3050.25 lb	3000.00 lb	-1.65%	5.00% M	17.12 gl
RMCEMENT	658.00 lb	4600.00 lb	4635.00 lb	0.63%		
RMWATER	285.00 lb	1435.51 lb	1428.00 lb	-0.59%		171.12 gl
RMEBS	26.30 oz	184.10 oz	184.00 oz	-0.05%		
RMSIKA_AIR	3.60 oz	26.60 oz	25.00 oz	-6.02%		

Actual Num Batches: 1  
 Load Total: 27916 lb Design 0.433 Water/Cement 0.391 A Design 239.1 gl Actual 216.9 gl To Add: 22.2 gl  
 Slump: 1.00 in # This Water: 0.0 gl / CY

<b>Section 5.0:</b>	<b>Earthwork, Backfilling, and Compaction</b>
---------------------	---

<b>Earthwork, Backfilling, and Compaction Information:</b>	Was the backfill placed in lifts?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were the lifts of the proper height?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were the lifts compacted?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	What was the method of compaction (jumping jack, plate tamp, excavator bucket):	
	Was engineering fill used?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was geotextile fabric required?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was the gravel replaced to the proper depth?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
<b>Notes:</b>		

**PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)**

<b>Section 6.0:</b>	<b>Micropiles</b>
---------------------	-------------------

<b>Micropile, Micropile Grout Test, and Pull Testing Information:</b>	Were micropiles installed on this project?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was a sacrificial pile used for proof loading?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was pull test set up specifications met during proof loading?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Did the EOR review and sign off on the proof loading results?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were micropiles drilled to the proper depth?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was grout strength verified prior to mix and placement?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were two sets of three grout cube specimens fabricated each day of the micropile install?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were the hollow bars and couplers verified?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was a grout sleeve installed?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Were centralizers installed on the micropiles?	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	Was grout volume recorded per hole? If so, list number of bags below:	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> N/A	
<b>Notes:</b>		

**PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)**

Section 7.0:	Summary of Findings
Summary of Findings:	<p>The foundation inspections were performed by Tooie Hales, P.E. on 11/5 and 11/6 of 2020. Mr. Hales. provided oversight and performed the onsite rebar inspection and concrete sampling. All deviations were reported and approved by the EOR and reflected in the report.</p>
<b>PLEASE SEE THE FOLLOWING PAGES FOR SUPPORTING DOCUMENTATION (IF ANY)</b>	



# AMERICAN CONCRETE INSTITUTE

*This is to certify that*

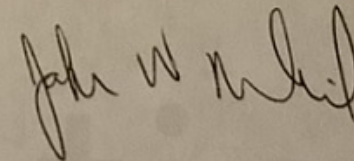
**HERBERT L HALES II**

*has demonstrated knowledge and ability by  
successfully completing the ACI Certification  
requirements and is hereby recognized as an*

**ACI Concrete Field Testing Technician - Grade I**

**Certified Date: 09/19/2018      Expires: 09/19/2023**

**Examiner of Record: Michelle B Richards**



*ACI Managing Director of Certification*

*The Authenticity of this certification can be verified at [www.ACICertification.org/verify](http://www.ACICertification.org/verify)*

# INTERNATIONAL CODE COUNCIL

**HERBERT HALES**

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

**REINFORCED CONCRETE SPECIAL INSPECTOR ASSOCIATE**

*Given this day of January 26, 2019*



William R. Bryant  
President, Board of Directors

Certificate No. 9050813



Dominic Sims  
Chief Executive Officer



INTERNATIONAL  
CODE  
COUNCIL®





# INTERNATIONAL CODE COUNCIL

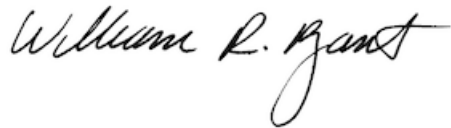
## HERBERT HALES

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

**Soils Special Inspector**

*Given this day February 4, 2019*

Certificate No. 9050813



William R. Bryant  
President, Board of Directors



Dominic Sims  
Chief Executive Officer



INTERNATIONAL  
CODE  
COUNCIL®

**9.3.13 CONSTRUCTION AND COLD GALVANIZING COMPLIANCE LETTER**

Date: November 12, 2020  
Sabre Industries  
7101 Southbridge Drive  
Sioux City, IA 51111  
712-258-6690



## Construction and Galvanizing Compliance Letter

### ***Crown Castle Site Information:***

**Crown POC:** Dan Vadney  
3 Corporate Park Drive Suite 101  
Clifton Park, NY 12065  
**BU Number:** 871584  
**Site Name:** Jon Tom Hill  
**Site Address:** 115 Birch MTN Road Glastonbury, CT 06033

**Latitude** 41°42'32.24", **Longitude** 72°28'24.41",  
**200 Foot – Self Support Tower**

Sabre Industries is pleased to submit this "**Construction Compliance Letter**" to Crown Castle for the modification/reinforcement to the subject structure. All construction practices, workmanship, and cold galvanizing applications were performed in accordance with CED-SOW-10007 Modification Inspection SOW. Please refer to the supporting photographs on the following page.

### ***Modification Design Information:***

**SDD Vendor:** Crown Castle  
**SDD Date:** 6/08/20  
**Vendor Job Number:** 1853234  
**Name of EOR:** Maham Barimani  
**Source of SDD:** 9052570

### ***Contractors Information:***

**GC Crew Lead:** Jason Burk  
**Dates on Site:** 10/28/20 – 11/10/20  
**Sub-Contractor Company:** TRAC  
**Welder(s) Company:** NA  
**Welder(s):** NA  
**Welder(s) CCI Number:** NA  
**Dates on Site:** NA

### ***Product Information:***

**Dates of Application:** NA  
**Cold Galvanizing Product:** NA

We at Sabre Industries 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,

*Phillip Feora*

## Cold Galvanizing Supporting Photographs

Gate Sign & Galvanizing Product	Installation	Monopole Shaft Interior
N/A	N/A	N/A

### **9.3.15 PHOTOGRAPHS**

Photo #1 (John Tom Hill\_001.jpg)



Photo #2 (John Tom Hill\_002.jpg)



Photo #3 (John Tom Hill\_003.jpg)



Photo #4 (John Tom Hill\_004.jpg)



Photo #5 (John Tom Hill\_005.jpg)



Photo #6 (John Tom Hill\_008.jpg)



Photo #7 (John Tom Hill\_016.jpg)



Photo #8 (John Tom Hill\_017.jpg)



Photo #9 (John Tom Hill\_021.jpg)





Photo #10 (John Tom Hill\_024.jpg)



Photo #11 (John Tom Hill\_028.jpg)



Photo #12 (John Tom Hill\_041.jpg)



Photo #13 (John Tom Hill\_042.jpg)



Photo #14 (John Tom Hill\_049.jpg)



Photo #15 (John Tom Hill\_051.jpg)



Photo #16 (John Tom Hill\_056.jpg)



Photo #17 (John Tom Hill\_062.jpg)

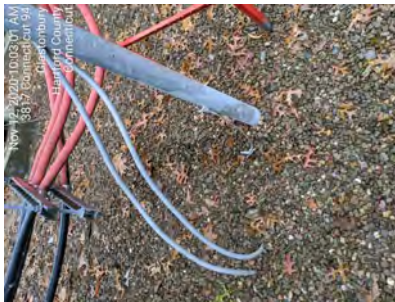


Photo #18 (John Tom Hill\_063.jpg)



Photo #1  
(TimePhoto\_20201105\_134334.jpg)



Photo #2  
(TimePhoto\_20201105\_134358.jpg)



Photo #3  
(TimePhoto\_20201105\_134453.jpg)



Photo #4  
(TimePhoto\_20201105\_134521.jpg)



Photo #5  
(TimePhoto\_20201105\_134557.jpg)

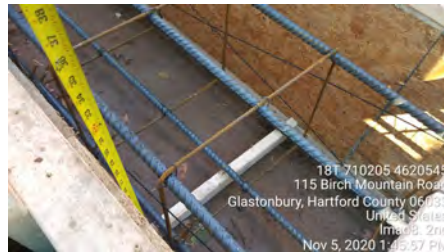


Photo #6  
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Photo #7  
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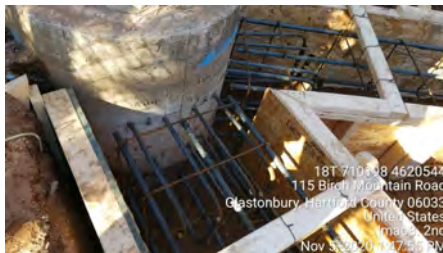


Photo #8  
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Photo #9  
(TimePhoto\_20201105\_134953.jpg)





Photo #10  
(TimePhoto\_20201105\_135030.jpg)



Photo #11  
(TimePhoto\_20201105\_135100.jpg)



Photo #12  
(TimePhoto\_20201105\_135222.jpg)



Photo #13  
(TimePhoto\_20201105\_135243.jpg)



Photo #14  
(TimePhoto\_20201105\_135304.jpg)



Photo #15  
(TimePhoto\_20201105\_135351.jpg)



Photo #16  
(TimePhoto\_20201105\_135415.jpg)

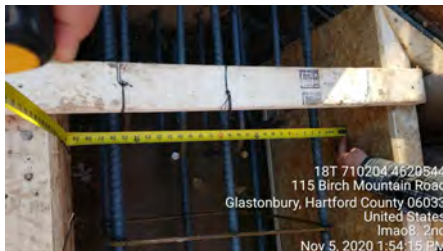


Photo #17  
(TimePhoto\_20201105\_135433.jpg)



Photo #18  
(TimePhoto\_20201105\_135634.jpg)



Photo #19  
(TimePhoto\_20201105\_135706.jpg)



Photo #20  
(TimePhoto\_20201105\_135733.jpg)



Photo #21  
(TimePhoto\_20201105\_135756.jpg)



Photo #22  
(TimePhoto\_20201105\_135819.jpg)



Photo #23  
(TimePhoto\_20201105\_140206.jpg)



Photo #24  
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Photo #25  
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Photo #26  
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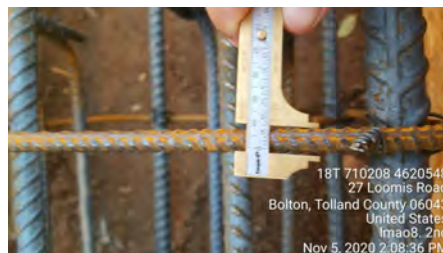


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Photo #28  
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Photo #29  
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Photo #30  
(TimePhoto\_20201106\_135645.jpg)



Photo #31  
(TimePhoto\_20201106\_143856.jpg)



Photo #32  
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Photo #33  
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Photo #34  
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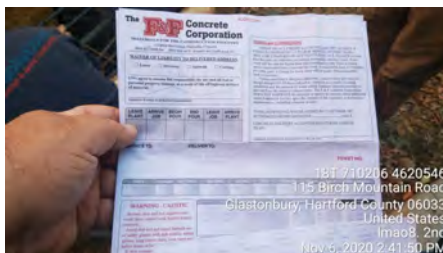


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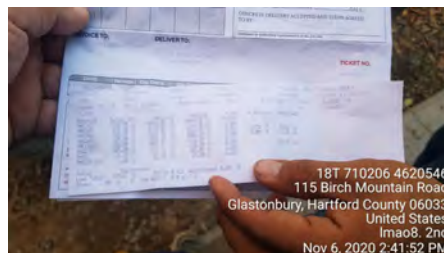


Photo #36  
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Photo #37  
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Photo #38  
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Photo #39  
(TimePhoto\_20201106\_144558.jpg)



Photo #40  
(TimePhoto\_20201106\_144719.jpg)



Photo #41  
(TimePhoto\_20201106\_144811.jpg)



Photo #42  
(TimePhoto\_20201106\_144816.jpg)





Photo #1 (IMG\_1525.jpg)



Photo #2 (IMG\_1526.jpg)



Photo #3 (IMG\_1527.jpg)



Photo #4 (IMG\_1528.jpg)



Photo #5 (IMG\_1529.jpg)



Photo #6 (IMG\_1531.jpg)



Photo #7 (IMG\_1532.jpg)



Photo #8 (IMG\_1535.jpg)



Photo #9 (IMG\_1537.jpg)



Photo #10 (IMG\_1538.jpg)



Photo #11 (IMG\_1541.jpg)



Photo #12 (IMG\_1542.jpg)



Photo #13 (IMG\_1544.jpg)



Photo #14 (IMG\_1547.jpg)



Photo #15 (IMG\_1554.jpg)



Photo #16 (IMG\_1555.jpg)



Photo #17 (IMG\_1562.jpg)



Photo #18 (IMG\_1565.jpg)





Photo #19 (IMG\_1569.jpg)



Photo #20 (IMG\_1570.jpg)



Photo #21 (IMG\_1580.jpg)



Photo #22 (IMG\_1582.jpg)



Photo #23 (IMG\_1585.jpg)



Photo #24 (IMG\_1605.jpg)



Photo #25 (IMG\_1606.jpg)



Photo #26 (IMG\_1625.jpg)



Photo #27 (IMG\_1632.jpg)



Photo #28 (IMG\_1635.jpg)



Photo #29 (IMG\_1638.jpg)



Photo #30 (IMG\_1643.jpg)



Photo #31 (IMG\_1659.jpg)



Photo #32 (IMG\_1661.jpg)



Photo #33 (IMG\_1663.jpg)



Photo #34 (IMG\_1667.jpg)



Photo #35 (IMG\_1681.jpg)



Photo #36 (IMG\_1683.jpg)





Photo #37 (IMG\_1684.jpg)



Photo #38 (IMG\_1688.jpg)



Photo #39 (IMG\_1690.jpg)



Photo #40 (IMG\_1695.jpg)



Photo #41 (IMG\_1696.jpg)



Photo #42 (IMG\_1698.jpg)



Photo #43 (IMG\_1701.jpg)



Photo #44 (IMG\_1709.jpg)



Photo #45 (IMG\_1720.jpg)





Photo #46 (IMG\_1723.jpg)



Photo #47 (IMG\_1803.jpg)

