STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

VIA ELECTRONIC MAIL

October 19, 2018

Jeffrey Barbadora
Real Estate Specialist
Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

RE: **EM-SPRINT-022-181009** – Sprint notice of intent to modify an existing telecommunications facility located at 53 Westminster Road, Canterbury, Connecticut.

Dear Mr. Barbadora:

The Connecticut Siting Council (Council) is in receipt of your correspondence of October 19, 2018 submitted in response to the Council's October 10, 2018 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/FOC/IN

Robidoux, Evan

From: Barbadora, Jeff <Jeff.Barbadora@crowncastle.com>
Sent: Friday, October 19, 2018 10:25 AM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-SPRINT-022-181009-WestminsterRd-Canterbury
Attachments: MA.pdf

Good morning Evan,

Attached is the mount analysis as requested in the CSC 10/10/18 letter.

Please let me know if I should send hard copies of the MA to the council.

Thanks,

Jeffrey Barbadora
781-970-0053
12 Gill Street, Suite 5800, Woburn, MA 01801
CrownCastle.com

From: Robidoux, Evan
Sent: Thursday, October 11, 2018 4:13 PM
To: Barbadora, Jeff
Cc: CSC-DL Siting Council
Subject: Council Incomplete Letter for EM-SPRINT-022-181009-WestminsterRd-Canterbury

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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HUDSON
Design Group LLC

Date: May 16, 2018
June 15, 2018 (Rev.1)

Marianne Dunst
Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Hudson Design Group LLC
45 Beechwood Drive
N. Andover, MA 01845
(978) 557-5553

Subject:	**Mount Structural Analysis**	
Carrier Designation:	**Sprint Equipment Change-Out**	
	Carrier Site Number:	CT33XC084
	Carrier Site Name:	Canterbury / Lemire
Crown Castle Designation:	**Crown Castle BU Number:**	876375
	Crown Castle Site Name:	Canterbury / Lemire
	Crown Castle JDE Number:	505920
	Crown Castle PO Number:	1201945
	Crown Castle Application Number:	441436 Rev.0
Engineering Firm Designation:	**Crown Castle Report Designation:**	3876279
Site Data:	**53 Westminster Road, Canterbury, CT, 06331** **Latitude: 41° 42' 7.15" Longitude: -71° 58' 50.11"**	
Structure Information:	**Tower Height & Type:**	**180 ft Monopole**
	Mount Elevation:	**180 ft**
	Mount Width & Type:	**12 ft Platform**

Dear Marianne Dunst,

Hudson Design Group LLC (HDG) is pleased to submit this "Mount Structural Analysis Report" to determine the structural integrity of Sprint's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

Based upon our analysis, we have determined the adequacy of the antenna mounting system that will support the existing and proposed loading to be:

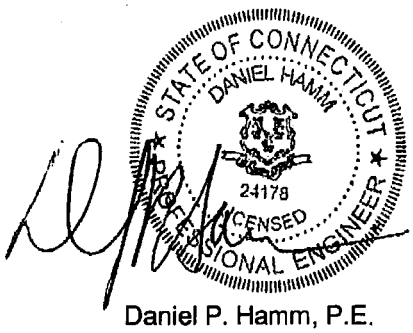
Platform — Conditional

This analysis has been performed in accordance with the 2012 International Building Code and the TIA-222-G based on a basic wind speed of 110 mph as required for use in the TIA-222-G Standard Annex B. Exposure Category B with a maximum topographic factor, K_{zt}, of 1.0 and Risk Category II were used in this analysis.

We at HDG 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.

Mount structural analysis prepared by: HDG
Respectfully Submitted by:

Michael Cabral
Structural Dept. Head



Daniel P. Hamm, P.E.
Principal

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1) INTRODUCTION

This mount is a 12' platform. No original structural design documents or fabrication drawings were available for the existing mounts. A mount mapping was not performed at this site. HDG performed a visual assessment using field photographs and mount mapping data from similar mounts to perform this analysis. The mount is installed at an elevation of 180 ft on the 180 ft Monopole.

2) ANALYSIS CRITERIA

The mount structural analysis was conducted in accordance with the requirements of TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a basic wind speed of 110 mph with no ice, 50 mph with a 2.37 inch escalated ice thickness, Exposure Category B and Topographic category 1 with a crest height of 0 ft. In addition, the mounts have been analyzed for various live loading conditions consisting of a 250 pound man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500 pound man live load applied individually at mount pipe locations using a 3-second gust wind speed of 30 mph.

Table 1 - Proposed Equipment Loading Information

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
180	180	3	Commscope	NNVV-65B-R4	-	1,2
		3	RFS/Celwave	APXVTM14-ALU-I20	-	1,2
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ	-	1,2
		6	Alcatel Lucent	RRH2X50-800	-	1,2
		3	Alcatel Lucent	TD-RRH8X20-25	-	1,2

Notes:
1) Proposed Equipment
2) Existing Mount to Remain

Table 2 - Existing and Reserved Equipment Loading Information

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
180	-	-	-	-	12' Platform	1

Notes:
1) Existing Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
HDG Construction Drawings – 1/24/18	HDG		HDG
RFDS	Sprint	-	ON FILE

3.1) Analysis Method

RAM Elements (Version 14.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and 2 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Square, Rectangular)	ASTM A500 (GR B)
Pipe	ASTM A53 (GR 53)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 4(a) - Mount Component Stresses vs. Capacity (Platform, Alpha Sector)

Notes	Component	Member No.	Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	1	180	61	Pass
1	Standoff Members	6	180	81	Pass
2	Mount-to-Tower Connection	-	180	35	Pass

Table 4(b) - Mount Component Stresses vs. Capacity (Platform, Beta Sector)

Notes	Component	Beam No.	Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	3	180	76	Pass
1	Standoff Members	4	180	77	Pass
2	Mount-to-Tower Connection	-	180	35	Pass

Table 4(c) - Mount Component Stresses vs. Capacity (Platform, Gamma Sector)

Notes	Component	Beam No.	Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	2	180	73	Pass
1	Standoff Members	5	180	81	Pass
2	Mount-to-Tower Connection	-	180	35	Pass

Structure Rating (max from all components) =	81%

Notes:
1) See additional documentation in "Appendix C – Analysis Output" for calculations supporting the % Capacity consumed.
2) See additional documentation in "Appendix D – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The mount has sufficient capacity to support the existing and proposed loading with the following modifications:

- **Install new handrail kit, SitePro1 P/N HRK12 (or approved equal).**
- **Install new handrail reinforcement kit, SitePro1 P/N PRK-SFS-L (or approved equal).**