Harnett County, North Carolina

Telecommunications Site Review
Tower Foundation Upgrade Application

CityScape
CONSULTANTS, INC.
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Boca Raton, FL 33433-3483
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October 26, 2018

Mr. Jay Sikes
Planning, Central Permitting & Inspections
108 East Front Street
Lillington, NC 27546

RE: Harnett County - BCOM 1810-0006
SBA Towers – "368-594"

Dear Mr. Sikes,

At your request, on behalf of Harnett County, North Carolina ("County"), CityScape Consultants, Inc. ("CityScape"), in its capacity as telecommunications consultant for the County, has considered the merits of an application provided by SBA Communications ("Applicant") to modify the tower foundation on an existing, two hundred fifty (250) foot *lattice* tower. The tower is owned by SBA Communications and is located at 106 JR Lane, Broadway, Harnett County, see *figure 1*. The site is also known by the address 108 JR Lane.

Currently, the tower has facilities for four (4) of the five (5) active carriers serving Harnett County. The reasoning for the application is unknown. All the tower tenants have on file the necessary FCC compliance statements, so a new document is not necessary.

The previous full structural analysis was prepared by Allpro Consulting Group, Inc., dated December 28, 2016, based on ANSI/TIA-222-G. The report indicates the structure loading is 98.7% (105% is maximum) and the foundation loading is 100.4% (110% is maximum), both of these had reduced from the previous analysis. It is noted that the analysis did not include the tower leg bolts as their data was not available. There was also the case for the last structural prepared for the tower that was submitted with the 2016 application from SBA/Verizon. At that time, CityScape recommended that the County require SBA to provide a statement of action that it will confirm the leg bolts to not pose a structural safety hazard. It is not known if the County moved forward with these recommendations.

The Applicant did not submit a new structural analysis with the submittals only the County Permit form and a set of Construction Drawings. CityScape requested the most current structural analysis and it was returned the same day. This new Structural Analysis was dated April 16, 2018 and prepared by Tower Engineering Solutions and is sealed by a North Carolina Professional Engineer. This new Analysis has clarified corrections from the last review; therefore, no further action is needed.

The tower stress rating was and remains satisfactory at 103.8% out of an allowable 105%, but for some reason it was found the foundation was overstressed:

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Original Design Reactions	317.1	262.3	31.5
Analysis Reactions	495.2	427.3	49.8
Factored Reactions*	428.0	354.1	42.5
% of Design Reactions	115.7%	120.7%	117.3%

All aspect of the foundation stress exceeded allowed limits of 110%. Following the modifications described in the analysis the new foundation stress rating will be 67% out of a maximum of 110%, see *figure 2*.

I certify that to the best of my knowledge all the information included herein is accurate at the time of this report. CityScape only works for public entities and has unbiased opinions. All recommendations are based on technical merits without prejudice per prevailing laws and codes.

Respectfully submitted,

Richard L. Edwards
FCC Licensed
PCIA Certified
CityScape Consultants, Inc.

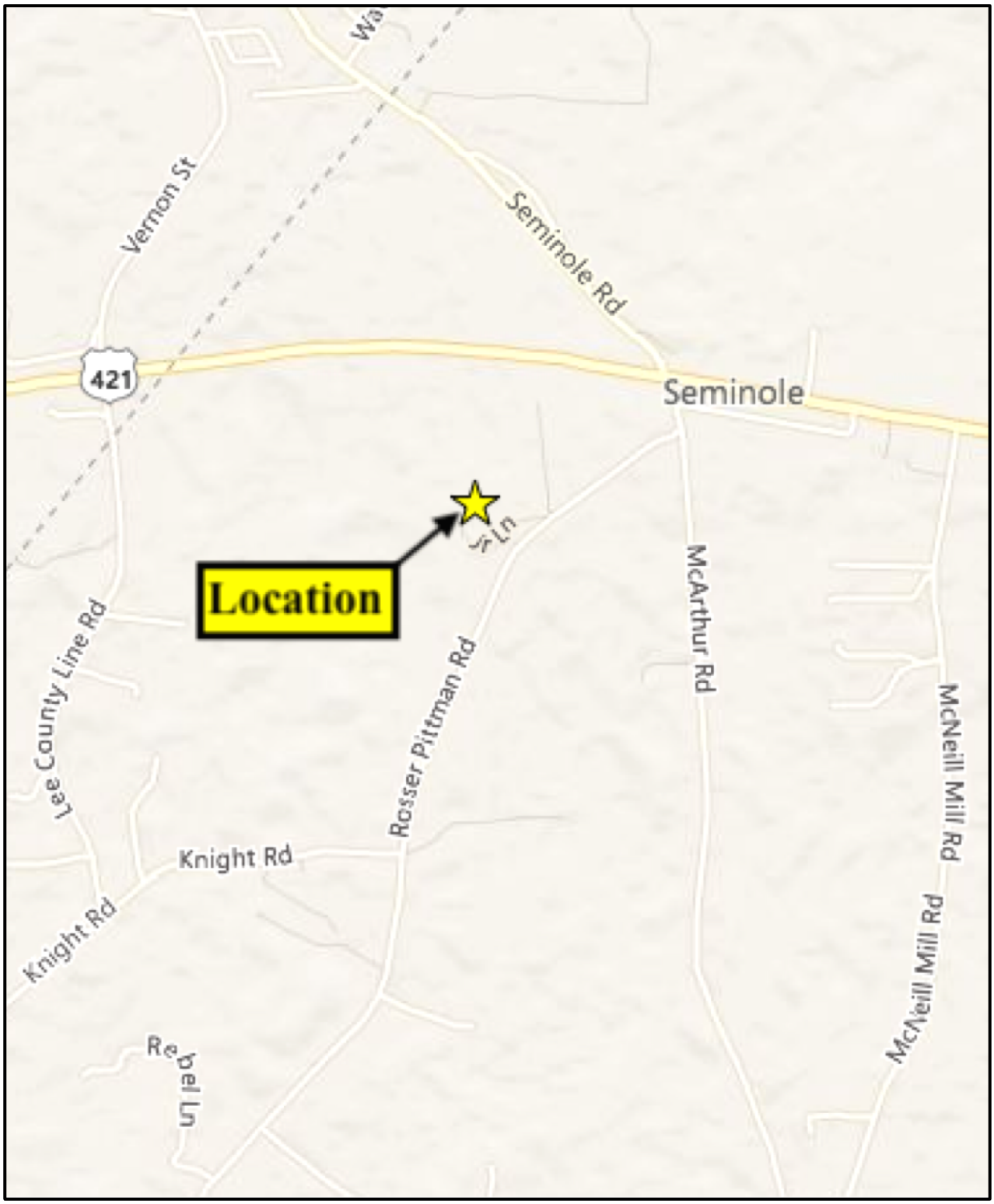
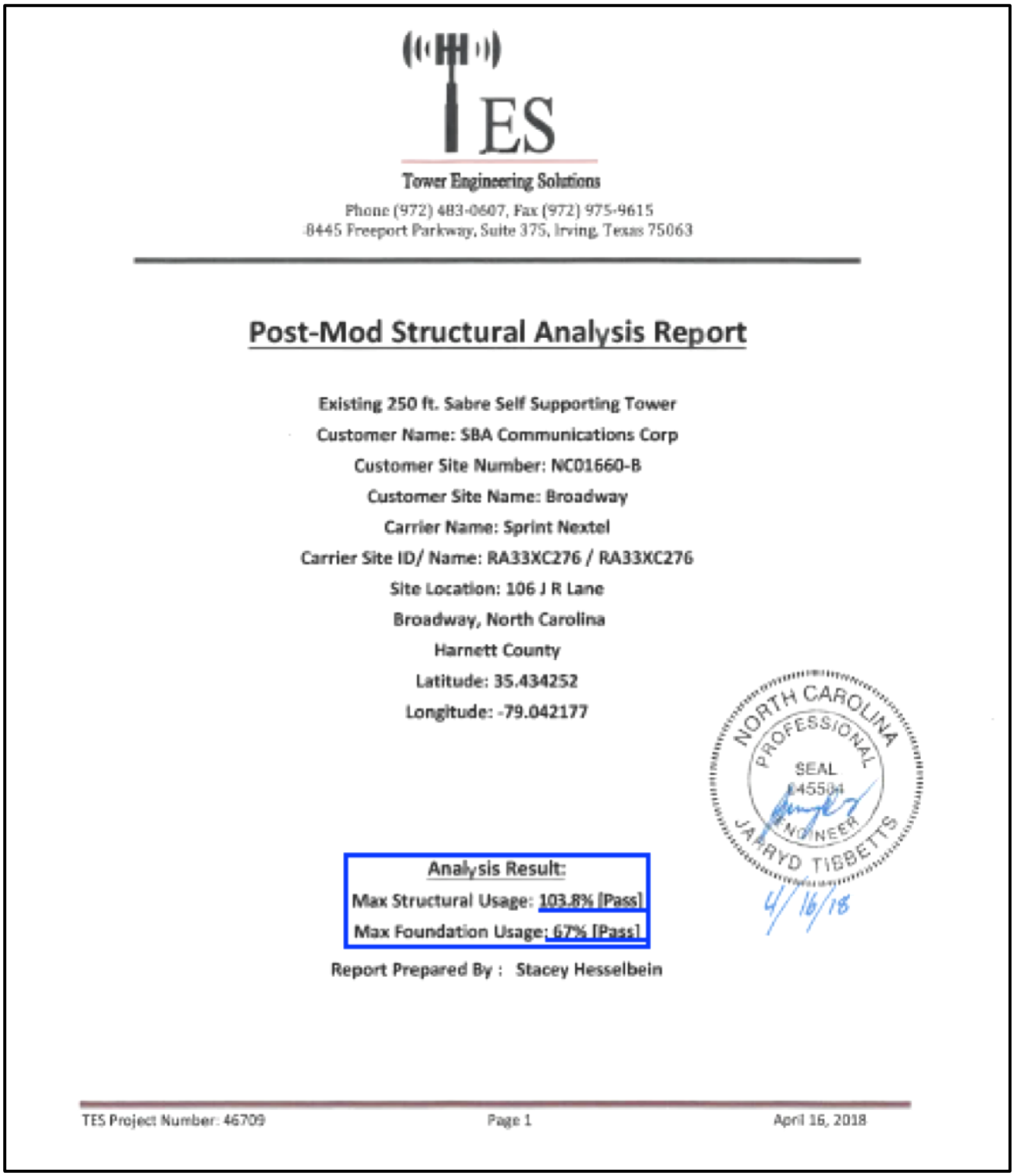


Figure 1. Location

CityScape Consultants, Inc.



TES
Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Post-Mod Structural Analysis Report

Existing 250 ft. Sabre Self Supporting Tower
Customer Name: SBA Communications Corp
Customer Site Number: NC01660-B
Customer Site Name: Broadway
Carrier Name: Sprint Nextel
Carrier Site ID/ Name: RA33XC276 / RA33XC276
Site Location: 106 J R Lane
Broadway, North Carolina
Harnett County
Latitude: 35.434252
Longitude: -79.042177

NORTH CAROLINA PROFESSIONAL SEAL 24550 ENGINEER JARRYD TIBBETTS
4/16/18

Analysis Result:
Max Structural Usage: 103.8% [Pass]
Max Foundation Usage: 67% [Pass]

Report Prepared By : Stacey Hesselbein

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Figure 2. Final Sealed Stress Ratings