

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

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PUBLIC SERVICE  
COMMISSION

In the Matter of:

APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC )  
AND SBA TOWERS V, LLC )  
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC )  
CONVENIENCE AND NECESSITY TO CONSTRUCT )CASE: 2014-00337  
A WIRELESS COMMUNICATIONS FACILITY AT )  
7810 U.S ROUTE 60, ASHLAND )  
BOYD COUNTY, KENTUCKY, 41102 )

SITE NAME: ROCKDALE 2 (KY15745-S)


**AMENDMENT TO APPLICATION FOR CERTIFICATE  
OF PUBLIC CONVENIENCE AND NECESSITY  
TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY**

Applicant to the above application hereby submits this Amendment to correct previously submitted incorrect documentation. The information provided and exhibits attached are hereby made a part of and to be included as official documentation to the above application.

1. The correct coordinates for the proposed facility are North Latitude 38° 25' 13.268" by West Longitude 82° 42' 7.596" as found in the Site Development Plan and Survey found in Exhibit B to the Application.
2. The Geotechnical Engineering Report found in Exhibit E to the Application is hereby deleted and replaced with the Geotechnical Engineering Report (Subsurface Exploration Report) attached to this Amendment as Exhibit 1. The previously submitted document contained an error in its reference to the proposed facility coordinates.
3. The Site Specific Obstruction Evaluation Report found in Exhibit G to the Application is hereby deleted and replaced with the Site Specific Obstruction Evaluation Report attached to this Amendment as Exhibit 2. The previously

submitted document contained an error in its reference to the proposed facility coordinates. The revised report coordinates have been rounded in order to utilize the evaluation program. The difference in coordinates is very slight and do not materially impact the evaluation of the safety or functionality of the proposed tower.

Respectfully submitted,

A handwritten signature in cursive script, reading "Todd R. Briggs", is positioned above a horizontal line.

Todd R. Briggs  
Briggs Law Office, PSC  
4965 U.S. Hwy 42  
Suite 1000  
Louisville, KY 40222  
Telephone 502-412-9222  
Counsel for Applicant

# Exhibit 1

Date: **June 30, 2014**

Mauricio Agredo  
SBA Towers, Inc.  
5900 Broken Sound Parkway, NW  
Boca Raton, FL 33487  
Office: (561) 226-9328



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**Subject: Subsurface Exploration Report**

<b>SBA Designation:</b>	<b>Site Number:</b>	KY15745-S
	<b>Site Name:</b>	Rockdale KY
<b>Engineering Firm Designation:</b>	<b>TEP Project Number:</b>	55070.20150
<b>Site Data:</b>	<b>East Williams Drive, Ashland, KY 41102 (Boyd County)</b> <b>Latitude N38° 25' 13.268"; Longitude W82° 42' 07.596"</b> <b>195 Foot - Proposed Self Supporting Tower</b>	

Dear Mr. Agredo,

*Tower Engineering Professionals, Inc.* is pleased to submit this "**Subsurface Exploration Report**" to evaluate subsurface conditions in the tower area as they pertain to providing support for the tower foundation.

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions in this report are based on the applicable standards of TEP's practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

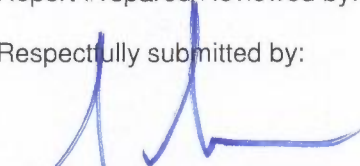
TEP assumes the current ground surface elevation; tower location and subsequent centerlines provided are correct and are consistent with the elevation and centerlines to be used for construction of the structure. Should the ground surface elevation be altered and/or the tower location be moved or shifted TEP should be contacted to determine if additional borings are necessary.

The analyses and recommendations submitted herein are based, in part, upon the data obtained from the subsurface exploration. The soil conditions may vary from what is represented in the boring logs. While some transitions may be gradual, subsurface conditions in other areas may be quite different. Should actual site conditions vary from those presented in this report, TEP should be provided the opportunity to amend its recommendations as necessary.

We at *Tower Engineering Professionals, Inc.* appreciate the opportunity of providing our continuing professional services to you and SBA Towers, Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Report Prepared/Reviewed by: Stephen W. Nickerson, E.I.T. / John D. Longest, P.E.

Respectfully submitted by:

  
Andrew T. Haldane, P.E.



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## 1) PROJECT DESCRIPTION

Based on the preliminary drawings, it is understood a self supporting communications tower will be constructed at the referenced site. The structure loads will be provided by the tower manufacturer.

## 2) SITE EXPLORATION

The field exploration included the performance of one soil test boring (B-1) to the auger refusal depth of 12.3 feet (bgs) adjacent to the staked centerline of the proposed self supporting tower. One offset boring was performed approximately 6 feet east to the auger refusal depth of 14.3 feet (bgs). The boring was performed by an ATV mounted drill rig using solid stem augers to advance the hole. Split-spoon samples and Standard Penetration Resistance Values (N-values) were obtained in accordance with ASTM D 1586 at a frequency of four samples in the top 10 feet and one sample thereafter to auger refusal.

The Split-spoon samples were transported to the TEP laboratory where they were classified by a Geotechnical Engineer in general accordance with the Unified Soil Classification System (USCS), using visual-manual identification procedures (ASTM-D-2488).

A Boring Location Plan showing the approximate boring location, a Boring Log presenting the subsurface information obtained and a brief guide to interpreting the boring log are included in the Appendix.

## 3) SITE CONDITIONS

The site is located off of East Williams Drive in Ashland, Boyd County, Kentucky. The proposed tower and compound are to be located in a clearing in a residential area. The ground topography is lightly sloping.

## 4) SUBSURFACE CONDITIONS

The following description of subsurface conditions is brief and general. For more detailed information, the individual Boring Log contained in Appendix B - Boring Log may be consulted.

### 4.1) Soil

The USCS classification of the materials encountered in the boring include OL, MH, CH and Weathered Sandstone. The Standard Penetration Resistance ("N" Values) recorded in the materials ranged from 11 blows per foot to 50 blows per 0 inches of penetration.

### 4.2) Rock

Weathered Sandstone was encountered at a depth of 8.5 feet (bgs) in the boring. Refusal of auger advancement was encountered at a depth of 12.3 feet (bgs) in the boring and 14.3 feet (bgs) in the offset boring.

### 4.3) Subsurface Water

Subsurface water was not encountered in the boring at the time of drilling. It should be noted the subsurface water level will fluctuate during the year, due to seasonal variations and construction activity in the area.

### 4.4) Frost

The TIA frost depth for Boyd County Kentucky is 30 inches.

## 5) TOWER FOUNDATION DESIGN

Based on the boring data, it is the opinion of TEP that a pier for each leg extending to a single large mat foundation or an individual pier and spread footing for each leg can be used to support the new tower. The following presents TEP's conclusions and recommendations regarding the foundation types.

### 5.1) Shallow Foundation

The foundation should bear a minimum of 30 inches below the ground surface to penetrate the frost depth and with sufficient depth to withstand the overturning of the tower. To resist the overturning moment, the weight of the concrete and any soil directly above the foundation can be used. The values are based on the current ground surface elevation.

**Table 1 - Shallow Foundation Analysis Parameters – Boring B-1**

Depth		Soil	Static Bearing <sup>1,3</sup> (psf)	Cohesion <sup>2</sup> (psf)	Friction Angle <sup>2</sup> (degrees)	Effective Unit Weight (pcf)	Friction Factor
Top	Bottom						
0	0.2	Topsoil	0	-	-	100	0.30
0.2	3.5	MH	4975	3050	-	115	0.30
3.5	6	CH	7075	4500	-	117	0.30
6	8.5	CH	6375	2550	-	117	0.30
8.5	13.5	Weathered Sandstone <sup>4</sup>	21400	-	45	130	0.50

Notes:

- 1) The bearing values provided are net allowable with a minimum factor of safety of 2 with anticipated settlement less than 1 inch. Bearing may be increased by 1/3 for transient loading (e.g. wind or earthquake loading)
- 2) These values should be considered ultimate soil parameters
- 3) The soil values are based on a maximum foundation size of 40 foot squared. If the foundation design size exceeds this dimension TEP should be contacted to re-evaluate soil parameters based on the actual foundation size
- 4) Due to the weathered nature of the rock cohesion of the rock cannot be relied upon for strength parameters. Indicated layers have been evaluated as a granular material

## 5.2) Drilled Shaft Foundation

A drilled shaft foundation is not recommended for this site. See Section 5.1) for shallow foundation design parameters.

## 6) SOIL RESISTIVITY

Soil resistivity was performed at the TEP laboratory in accordance with ASTM G187-05 (Standard Test Method for Measurement of Soil Resistivity Using the Two Electrode Soil Box Method). Test results indicated a result of 36,000 ohms/cm.



## 7) CONSTRUCTION CONSIDERATIONS - SHALLOW FOUNDATION

### 7.1) Excavation

The boring data indicates excavation to the expected subgrade level for the shallow foundation will extend through silt, clay and sandstone. A large tracked excavator should be able to remove the silt and clay with minimal to moderate difficulty. A large tracked excavator with rock teeth and/or a pneumatic hammer will be necessary to remove the sandstone with difficulty. TEP anticipates the depth to the surface of the rock will vary outside of the boring location.

Excavations should be sloped or shored in accordance with local, state and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. It is the responsibility of the contractor for site safety. This information is provided as a service and under no circumstance should TEP be assumed responsible for construction site safety.

### 7.2) Foundation Evaluation/Subgrade Preparation

After excavation to the design elevation for the footing, the materials should be evaluated by a Geotechnical Engineer or a representative of the Geotechnical Engineer prior to reinforcement and concrete placement. This evaluation should include probing, shallow hand auger borings and dynamic cone penetrometer testing (ASTM STP-399) to help verify that suitable residual material lies directly under the foundation and to determine the need for any undercut and replacement of unsuitable materials. Loose surficial material should be compacted in the excavation prior to reinforcement and concrete placement to stabilize surface soil that may have become loose during the excavation process. TEP recommends a 6-inch layer of compacted crushed stone be placed just after excavation to aid in surface stability.

The silt and clay encountered in the boring will deteriorate rapidly once disturbed and exposed to the weather. It is recommended that precautions be made to prevent soils from prolonged exposure, such as placing rebar and concrete soon after excavating soils and/or the placement of a mud mat to protect sensitive soils prior to the placement of rebar and concrete. If the foundation excavation shows that only a portion of the foundation will bear on rock, with a portion bearing on soil, then the entire footprint should be over-excavated by a minimum of 6 inches and the bearing elevation should be re-established with a coarse graded aggregate.

### 7.3) Fill Placement and Compaction

Backfill materials placed above the shallow foundation to the design subgrade elevation should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. To be considered for use, backfill materials should have a maximum dry density of at least 100 pounds per cubic foot as determined by standard Proctor (ASTM D 698), a Liquid Limit no greater than 40, a Plasticity Index no greater than 20, a maximum particle size of 4 inches, and 20 percent or less of the material having a particle size between 2 and 4 inches. Because small handheld or walk-behind compaction equipment will most likely be used, backfill should be placed in thin horizontal lifts not exceeding 6 inches (loose).

Fill placement should be monitored by a qualified Materials Technician working under the direction of a Geotechnical Engineer. In addition to the visual evaluation, a sufficient amount of in-place field density tests should be conducted to confirm the required compaction is being attained.

### 7.4) Reuse of Excavated Soil

The silt that meets the above referenced criteria can be utilized as backfill based on dry soil and site conditions at the time of construction. TEP does not recommend the use of fat clay or sandstone as backfill. Import soil that meets the above requirements should be utilized as backfill.

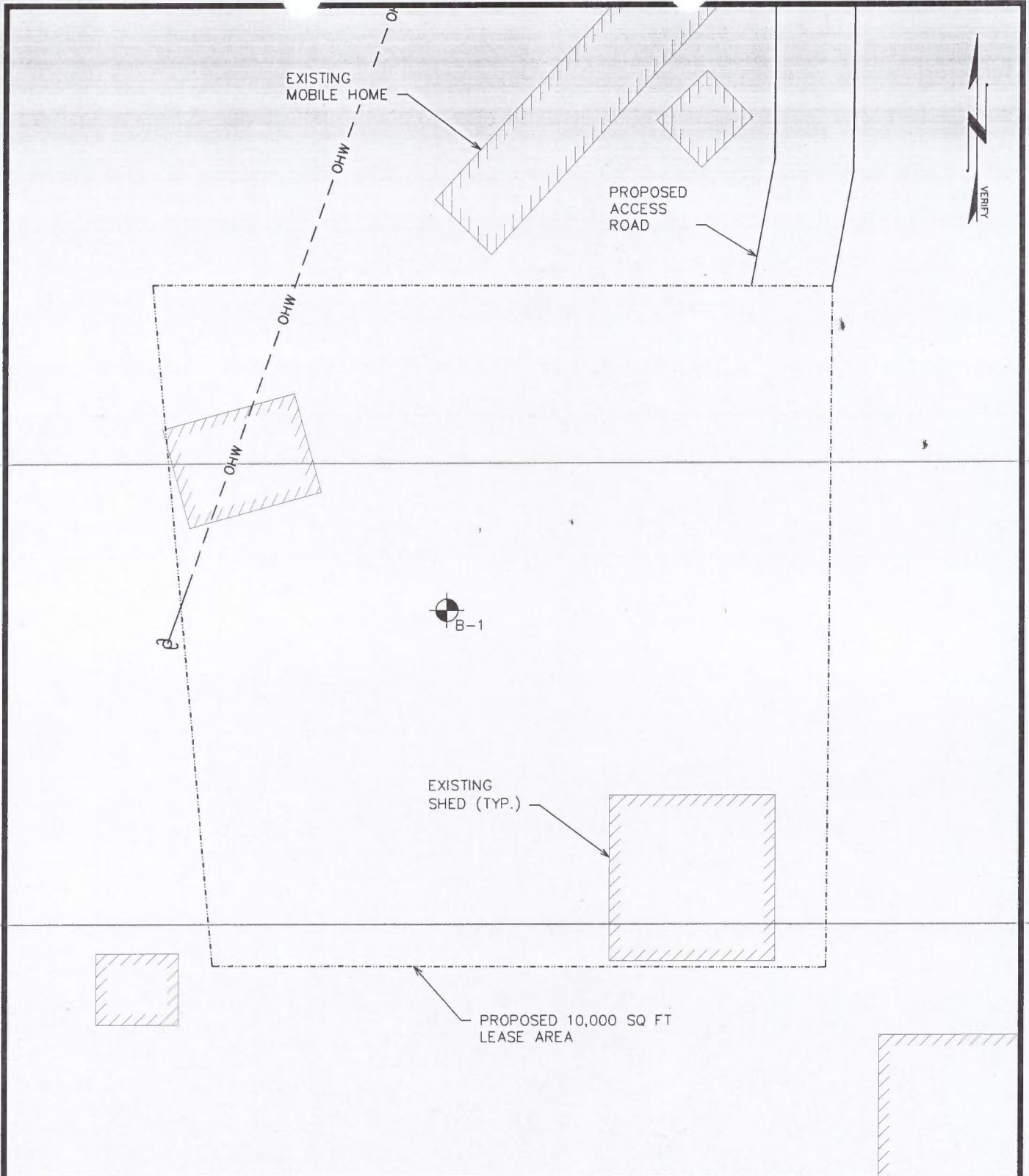
If variability in the subsurface materials is encountered, a representative of the Geotechnical Engineer should verify that the design parameters are valid during construction. Modification to the design values presented above may be required in the field.

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**APPENDIX A**  
**BORING LAYOUT**

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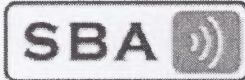
## BORING LAYOUT

SCALE: N.T.S.

PREPARED BY:

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PREPARED FOR:



SBA COMMUNICATIONS CORPORATION  
 5000 VALLEYSTONE DRIVE  
 CARY, NC 27519  
 OFFICE: (919) 469-5559

PROJECT INFORMATION:

**ROCKDALE KY**  
**SITE #: KY15745-S**

E WILLIAMS DRIVE  
 ASHLAND, KY 41102  
 (BOYD COUNTY)

REVISION: 0

TEP JOB #: 55070.20150

SHEET NUMBER:

**C-1**



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**APPENDIX B**  
**BORING LOG**

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## Key to Soil Symbols and Terms

### TERMS DESCRIBING CONSISTENCY OR CONDITION

**COARSE-GRAINED SOILS** (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

<u>Descriptive Terms</u>	<u>SPT Blow Count</u>
Very Loose	< 4
Loose	4 to 10
Medium Dense	11 to 30
Dense	31 to 50
Very Dense	> 50

**FINE-GRAINED SOILS** (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

<u>Descriptive Terms</u>	<u>SPT Blow Count</u>
Very Soft	< 2
Soft	2 to 4
Medium Stiff	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	> 30

### GENERAL NOTES

1. Classifications are based on the Unified Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. Surface elevations are based on topographic maps and estimated locations and should be considered approximate.

3. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not guaranteed to be representative of subsurface condition at other locations or times.

Group Symbols	Typical Names	Sampler Symbols
	GW Well-graded gravels, gravel-sand mixtures, little or no fines	Split Spoon
	GP Poorly-graded gravels, little or no fines/sands	Standard Penetration Test (SPT)
	GM Silty gravels, gravel-sand-silt mixtures	Pushed Shelby Tube
	GC Clayey gravels, gravel-sand-silt mixtures	Auger Cuttings
	SW Well-graded sands, gravelly sands, little or no fines	Grab Sample
	SP Poorly-graded sands, little or no fines/sands/gravels	Dynamic Cone Penetrometer
	SM Silty sands, sand-silt mixtures	Hand Auger
	SC Clayey sands, sand-clay mixtures	Rock Core
	ML Inorganic silts and very fine sands, rock floor, silty or clayey fine sands or clayey silts with slight plasticity	<b>Log Abbreviations</b>  ATD - At Time of Drilling AD - After Drilling EOD - End of Drilling RMR - Rock Mass Rating WOH - Weight of Hammer WOR - Weight of Rod REC - Rock Core Recovery RQD - Rock Quality Designation
	CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
	OL Organic silts and organic silty clays of low plasticity	
	MH Inorganic silts, micaceous or distomaceous fine sandy or silty soils, elastic silts	
	CH Inorganic clays of high plasticity, fat clays	
	OH Organic clays of medium to high plasticity, organic silts	
	PT Peat and other highly organic soils	





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# LOG OF BORING B-1

1 OF 1

DATE STARTED <b>6/19/2014</b>		DRILLING METHOD <b>Solid Stem Auger</b>		HOLE SIZE <b>4in</b>		CITY, STATE <b>Ashland, Kentucky</b>	
DATE COMPLETE <b>6/19/2014</b>		HAMMER WEIGHT/FALL <b>140lbs / 30in</b>		HAMMER TYPE <b>Auto Hammer</b>		TOTAL DEPTH <b>12.3 FT</b>	
GROUND EL.		LOGGED BY <b>TAD</b>		CHECKED BY <b>JDL</b>		DEPTH/EL. GROUNDWATER <b>Not Encountered</b>	
BORING LOCATION <b>Adjacent to staked centerline of proposed tower</b>							
PROJECT <b>Rockdale KY</b>							
SITE ID: <b>KY15745-S</b>						TEP NO.: <b>55070.20150</b>	

SAMPLE NUMBER	SAMPLE LENGTH (INCHES)	BLOW COUNTS (N) / REC% / RQD%	ELEVATION (FEET)	DEPTH (FEET)	SAMPLE GRAPHIC	USCS GRAPHIC	DESCRIPTION AND CLASSIFICATION	REMARKS	POCKET PEN TSF	UNCONFINED STRENGTH, PSF	UNIT WEIGHT PCF
							0.0-0.2: Topsoil - 2 Inches				
							0.2-3.5: Stiff, brown, sandy SILT (ML), trace clay, moist				
S1	18	4-5-6 (11)									
S2	18	6-8-11 (19)		5			3.5-8.5: Very stiff, brown and gray, fat CLAY (CH), trace sand, moist			4.5	
S3	18	5-9-3 (12)								2	
S4	1	50/1"		10			8.5-12.3: Very dense, light brown, weathered SANDSTONE, dry				
							12.3: Boring Terminated - Auger Refusal Offset 6 feet - Auger Refusal at 14.3 feet				

\* Where elevations have not been provided in site documents, they have been estimated from available online sources.

## Exhibit 2





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## Site Specific Obstruction Evaluation Report

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Date: December 12, 2014

Study Site Name: KY 15745-S Rockdale 2

Study Site Latitude: 38° 25' 13.27"

Study Site Longitude: 082° 42' 07.60"

Surface Elevation: 696' AMSL (Above Mean Sea Level)

Structure Height: 199' AGL (Above Ground Level)

Total Height: 895' AMSL

This study is conducted in accordance with Federal Aviation Regulations (FAR) Part 77 and the Federal Communications Commission (FCC) Rules Part 17.

This report is intended for the exclusive use of SBA Network Services, Inc and their clients in making appropriate regulatory filings and may not be reproduced in any form or manner.

## IMPACT

The study site is located 49,872' or 8.21 NM Southeast from the airport reference point (ARP) of Ashland Regional Airport a public use instrumented airport. The proposed structure **would not** affect VFR flight operations at this airport.

Private use airports or heliports do not meet FAR PART 77 criteria and the FAA would not consider them in its study of the proposed structure. In the interest of flight safety SBA considers private use airports in every study. SBA found no evidence of private use airports, which affect this study site.

**FAA Notice (FAR PART 77.9 (a)):** The proposed 199' AGL structure **would not exceed** this 200' AGL surface. FAA notice of proposed construction **is not** required.

**FAR PART 77.9 (b) (1) (2) (3):** The proposed 199' AGL structure **would not** exceed the imaginary 100:1 slope surface or fail the FCC slope test for Ashland Regional Airport. FAA notice of proposed construction **is not** required.

**Obstructions Standards of FAR PART 77.19, and FAR 77.17 (Ref: FAR PART 77.19 (a) (1), (2), (3), and FAR PART 77.17):** The proposed 199' AGL structure **would not** exceed any obstruction standards for Ashland Regional Airport.

**AM Broadcast Station Impact:** SBA found no evidence of AM Broadcast Stations that would impact the study site. AM station Proof-of-Performance is not required.

## **Conclusion/Recommendations:**

The proposed 199' AGL/895' AMSL structure would not be considered an obstruction to air navigation by the FAA. FAA notice of proposed construction is **not** required. If filed, the FAA would likely approve such a proposal without an extended study.

- **FAA notice is not required. Maximum no notice height is 200' AGL.**
- **Marking and Lighting is not requiring. Maximum no lighting/marketing height is 200' AGL.**
- **Extended study is not required.**
- **The proposed structure would not be considered a hazard to IFR flight operations.**
- **The proposed structure is not within AM Broadcast Station interference radius.**
- **Proposed structure would not impact flight operations at private use airports or heliports.**

For questions or concerns contact Clint Papenfuss at (561) 226-9481.

Clinton T. Papenfuss  
SBA Airspace Analyst