ADDENDUM NO 3
RFQ 2025-L
SUWANNEE VALLEY COMMUNICATIONS TOWER

1. A&E Firm in conjunction with County Engineering conducted internally and will not impact submittal information. The respondents shall assume no A&E engineering was performed.

2. Boundary & Topographic Survey, Aeronautical Study, and Subsurface Exploration Report attached.

BOUNDARY & TOPOGRAPHIC SURVEY

IN SECTION 34, TOWNSHIP 2 SOUTH, RANGE 16 EAST,
COLUMBIA COUNTY, FLORIDA

SUBJECT PARCEL DESCRIPTION (O.R. 940, PAGE 1102 AS WRITTEN)

TOWNSHIP 2 SOUTH - RANGE 16 EAST

SECTION 34: COMMENCE AT THE SOUTHEAST CORNER OF COUNTRY LANE ESTATES, A SUBDIVISION AS RECORDED IN PLAT BOOK 5, PAGE 77, PUBLIC RECORDS, COLUMBIA COUNTY, FLORIDA, SAID CORNER BEING A POINT OF INTERSECTION OF THE NORTH LINE OF SECTION 34, TOWNSHIP 2 SOUTH, RANGE 16 EAST, COLUMBIA COUNTY, FLORIDA, AND THE WESTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY 41, THENCE S31° 44' 43"E ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF U.S. 41 A DISTANCE OF 555.07 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE S31° 44' 43"E ALONG SAID RIGHT-OF-WAY LINE 150.00 FEET; THENCE S86° 51' 17"W A DISTANCE OF 330.76 FEET; THENCE N31° 44' 43"W, A DISTANCE OF 150.00 FEET, THENCE N86° 51' 17"E A DISTANCE OF 330.76 FEET TO THE POINT OF BEGINNING. CONTAINING 1.00 ACRES, MORE OR LESS.

SURVEYOR'S NOTES

1. BEARINGS SHOWN HEREON ARE GRID FLORIDA STATE PLANE NAD83/2011, NORTH ZONE AND REFERENCED TO THE WESTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY 41 AS BEARING S32° 25' 10"E.

2. THE BOUNDARY & TOPOGRAPHIC SURVEY SHOWN HEREON IS BASED ON ACTUAL FIELD MEASUREMENTS AND OBSERVATIONS DATED JANUARY 7, 2025.

3. THIS SURVEY MAP OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

4. ALL MEASURED BEARINGS AND DISTANCES WERE IN SUBSTANTIAL AGREEMENT WITH RECORD DATA UNLESS OTHERWISE NOTED.

5. PROPERTY TIES ARE PERPENDICULAR MEASURE UNLESS OTHERWISE NOTED.

6. ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO FDOT BENCHMARK MONUMENT STAMPED "2904004 BM4" WITH A PUBLISHED ELEVATION OF 138.997'.

7. CENTER OF PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATION SHOWN HEREON WERE ESTABLISHED FROM RTK GPS OBSERVATIONS REFERENCED TO STATE OF FLORIDA PERMANENT REFERENCE NETWORK. THE VALUES FOR THE PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATION SHOWN HEREON EXCEED FAA "1-A" ACCURACY REQUIREMENTS.

8. UNDERGROUND FOUNDATIONS AND UTILITIES WERE NOT LOCATED AS PART OF THIS SURVEY UNLESS OTHERWISE NOTED HEREON.

9. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE SEARCH.

FLOOD ZONE NOTE

THE HEREON DESCRIBED SUBJECT PARCEL APPEARS TO LIE IN FLOOD ZONE X BASED ON THE FEDERAL EMERGENCY MANAGEMENT ACT FIRM, COMMUNITY PANEL MAP NUMBER 12023C0190D DATED NOVEMBER 2, 2018.

PROPOSED TOWER DATA

PROPOSED 300' SELF-SUPPORT TOWER
NAD 83/2011
LATITUDE: **30° 16' 39.25" NORTH**
LONGITUDE: **82° 41' 54.83" WEST**
GROUND ELEVATION: **139.0' NAVD 88**

LEGEND

◉	INDICATES 5/8" REBAR & CAP SET STAMPED LB 7810
●	INDICATES 5/8" REBAR & CAP FOUND STAMPED AS NOTED
⊗	INDICATES 1/2" REBAR & CAP FOUND NO ID
⊡	INDICATES 4"x4" CONCRETE MONUMENT FOUND ID AS NOTED
R/W	INDICATES RIGHT-OF-WAY
O.R.	INDICATES OFFICIAL RECORDS BOOK
ID	INDICATES IDENTIFICATION
(R)	INDICATES RECORD DATA WHEN DIFFERENT THAN MEASURED
FDOT	INDICATES FLORIDA DEPARTMENT OF TRANSPORTATION
NAVD 88	INDICATES NORTH AMERICAN VERTICAL DATUM OF 1988
- 136.6'	INDICATES EXISTING SPOT ELEVATION

TREE LEGEND

	PINE TREE
LO	LIVE OAK TREE
WO	WATER OAK TREE
8"	INDICATES SIZE (IN INCHES) OF TREE TRUNK AS MEASURED AT 4'± ABOVE GROUND
10"+12"	INDICATES TREE TRUNK CLUSTER SIZES

ALL TREES WITH 8"+ DIAMETER AT BREAST HEIGHT LYING WITHIN THE APC TOWERS LEASE PARCEL AND EASEMENTS WERE LOCATED AND ARE SHOWN HEREON.

STONECYPHER SURVEYING INC.
1225 NW 16TH AVENUE GAINESVILLE, FLORIDA 32601
Tel.: (352) 379-0948
Email: dws@stone-survey.com
WWW.STONE-SURVEY.COM
Professional Surveying & Mapping Certificate of Authorization No.: LB 7810

BOOK/PAGE	56/66	SCALE	1"=30'
DRAWN	MRJ	DATE	JANUARY 7, 2024
CHECKED	DWS	PROJECT #	24-0084

This map prepared by:
DAVID W. STONECYPHER
PROFESSIONAL SURVEYOR & MAPPER FLA. LICENSE NO. 6391

COLUMBIA COUNTY-LAKE CITY TOWER SITE

NW US HIGHWAY 41, LAKE CITY, FL 32055

DRAWING # Columbia County-Lake City Tower.survey.dwg

SHEET # **1 OF 1**

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2025-ASO-2775-OE

Issued Date: 03/05/2025

Lawrence Wilson
Columbia County, FL
263 NW Lake City Ave
Lake City, FM 32055

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna Tower SVFS #42
Location:	Lake City, FL
Latitude:	30-16-40.02N NAD 83
Longitude:	82-41-55.57W
Heights:	140 feet site elevation (SE)
	330 feet above ground level (AGL)
	470 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M Change 1, Obstruction Marking and Lighting, a med-dual system-Chapters 4,8(M-Dual),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 09/05/2026 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817) 222-4832, or Michael.J-CTR.Costanzi@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2025-ASO-2775-OE.

Signature Control No: 646506552-649445343 (DNE)
Michael Costanzi
Technician

Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2025-ASO-2775-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	42	dBW
6	7	GHz	55	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W

Verified Map for ASN 2025-ASO-2775-OE

Date: **February 27, 2025**

Chris Monzingo
Omnicom Consulting Group
2418 Mill Creek Ct., Ste 2
Tallahassee, FL 32308
(850) 792-4723

FL COA# 31011
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Geotech@tepgroup.net

Subject: Subsurface Exploration Report

Omnicom Designation:	***Site Name:***	*SVFS #42*
Engineering Firm Designation:	***TEP Project Number:***	*60013.1063668*
Site Data:	***US HWY 41 South, Lake City, FL 32055 (Columbia County)*** ***Latitude N30° 16' 40.0", Longitude W82° 41' 55.1"*** ***300 Foot – Proposed Self Supporting Tower***	

Chris Monzingo,

TEP 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, expressed or implied, is made.

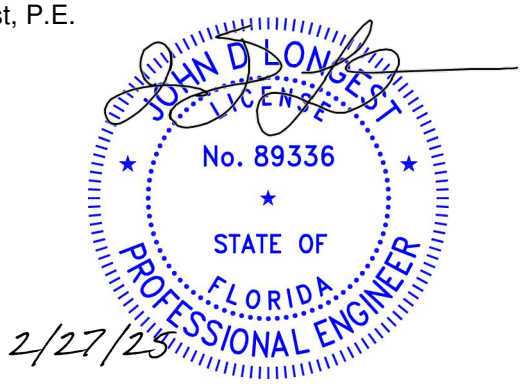
TEP assumes the current ground surface elevation, tower location and subsequent centerline provided are correct and are consistent with the elevation and centerline to be used for construction of the structure. Should the ground surface elevation be altered and/or the tower location be moved or shifted 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 log. 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 TEP appreciate the opportunity of providing our continuing professional services to you and Omnicom. If you have any questions or need further assistance on this or any other project, please give us a call.

Report Prepared/Reviewed by: Zeke A. Buchta, G.I.T. / John D. Longest, P.E.

Respectfully submitted by:



John D. Longest, P.E.

TABLE OF CONTENTS

1) PROJECT DESCRIPTION

It is understood a self supporting tower is being planned for construction at the above referenced site. The structure loads can be obtained from the tower manufacturer.

2) SITE EXPLORATION

The field exploration included the performance of one soil test boring (B-1). The boring was advanced to the planned depth of 80 feet below ground surface (bgs) at the approximate location of the proposed self supporting tower. The boring was performed by a track mounted drill rig using mud rotary drilling techniques to advance the hole. Split-spoon samples and Standard Penetration Test (SPT) resistance values (N-values) were obtained in accordance with ASTM D1586 at a frequency of five samples in the top 10 feet and two samples in every 10 feet thereafter.

The Split-spoon samples were transported to the TEP laboratory where they were classified by a qualified representative of the Geotechnical Engineer in general accordance with the Unified Soil Classification System (USCS), using visual-manual identification procedures (ASTM D2488).

A boring location plan showing the approximate boring location and the boring log presenting the subsurface information obtained, accompanied with a brief guide to interpreting the boring log, are included in Appendix A and B, respectively.

3) SITE CONDITIONS

The site is located at US HWY 41 South in Lake City, Columbia County, Florida. The proposed tower and compound are to be located in a sparsely wooded area with large open grassy clearances. The ground topography is relatively level.

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 may be consulted.

4.1) Soil

The USCS classification of the soils encountered in the boring include SP, SC, and CL. The Standard Penetration Resistance (“N” Values) recorded in the subsurface materials range from 3 blows per foot of penetration to 50 blows with 1 inch of penetration.

4.2) Rock

Weathered limerock was encountered at a depth of 68.5 feet (bgs) in the boring. Refusal of auger advancement was not encountered in the boring.

4.3) Subsurface Water

Subsurface water was encountered at a depth of 4.8 feet (bgs) in the boring at the time of drilling. It is anticipated that the seasonal high water level could rise to a depth of 2 feet (bgs). It should be noted the subsurface water level will fluctuate during the year due to seasonal variations, precipitation events and construction activity in the area.

4.4) Frost

The Telecommunications Industry Association (TIA) frost depth for Columbia County, Florida is 0 inches.

5) TOWER FOUNDATION ANALYSIS

Based on the boring data, it is the opinion of TEP that a pier for each leg extending to a single large mat foundation, an individual pier and spread footing for each leg or a single drilled shaft 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

Based on preliminary site information, the site is located on relatively level ground. It is recommended that foundation designs account for site grades being raised with excavation spoils or that foundation drawings specify minimum embedment depths based on existing site elevations and factor in ground slopes.

The following values may be used for design of a shallow foundation. The foundation should bear with sufficient depth to withstand 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 provided in Table 1 consider ground surface elevation at the time of the subsurface exploration and undisturbed, native materials. Due to the construction process disturbing the in-situ soils and reducing the soil densities above the new foundation from those provided in Table 1, TEP recommends that the foundation designer specify a minimum depth and unit weight for compacted backfill to resist overturning of the new shallow foundation.

Table 1 – Shallow Foundation Design Parameters

Depth (feet)		Subsurface Material	Gross Ultimate Bearing[1,2] (psf)	Cohesion[1] (psf)	Friction Angle[1] (degrees)	Effective Unit Weight (pcf)	Friction Factor
Top	Bottom						
0	2	SP	2775	-	29	106	0.35
2	4	SP	3100	-	29	41	0.35
4	6	SP	4375	-	30	43	0.36
6	8	SP	4550	-	29	41	0.35
8	13.5	SC	5950	-	30	43	0.36

Notes:
1) These values should be considered ultimate soil parameters.
2) Bearing values consider a foundation width ranging from 8 to 40 feet and less than 1 inch of total settlement.

Due to the loose saturated nature of the soils at the site, the installation of shallow foundations may prove to be difficult. It is likely that more advanced dewatering measures will be necessary to successfully install a foundation in these difficult conditions below 2 feet (bgs). Installation of well points to remove excess moisture from the soils to a workable depth will likely be necessary. Once well points are installed they should be able to operate somewhat continuously and reliably as frequent wetting and drying of the soils will reduce their overall performance in bearing, in maintaining an open excavation, and ability for soils to be properly compacted following foundation installation. It may be necessary for a contractor to perform test pits or an additional preliminary exploration at the site to determine the extent of dewatering necessary.

The soils at this site will likely deteriorate once disturbed, and further when left exposed. Following evaluation by an experienced geotechnical engineer, soils at the bearing layer should be protected by placing a lean concrete mix "mud mat" in the base of the excavation to protect the soils from drying and rewetting as well as construction activity.

5.2) Drilled Shaft Foundation

The following values may be used for design of a drilled shaft foundation. TEP recommends the side frictional and lateral resistance values developed in the top section of the caisson for a depth equal to half the diameter of the caisson be neglected in design calculations. Design of drilled shaft foundations should ensure termination in a known material. The values presented in Table 2 are based on the ground surface elevation at the time of the subsurface exploration.

Table 2 – Drilled Shaft Foundation Design Parameters

Depth (feet)		Subsurface Material	Gross Ultimate Bearing[1] (psf)	Ultimate Side Frictional Resistance[1] (psf)	Cohesion[1] (psf)	Friction Angle[1] (degrees)	Effective Unit Weight (pcf)
Top	Bottom						
0	2	SP	975	40	-	29	106
2	4	SP	1600	100	-	29	41
4	6	SP	2800	130	-	30	43
6	8	SP	2875	160	-	29	41
8	13.5	SC	4400	240	-	30	43
13.5	18.5	SC	9225	360	-	32	50
18.5	23.5	CL	16325	1260	2300	-	50
23.5	28.5	SC	13600	560	-	31	50
28.5	33.5	CL	8650	960	1750	-	50
33.5	38.5	CL	7200	440	800	-	51
38.5	43.5	SC	17500	1200	-	40	53
43.5	48.5	SC	4375	1190	-	36	52
48.5	53.5	CL	3625	220	400	-	47
53.5	58.5	SC	41775	1490	-	37	52
58.5	63.5	SC	10425	2070	-	45	55
63.5	68.5	CL	8700	520	950	-	51
68.5	73.5	Weathered Limerock	137425	2440	-	45	62
73.5	78.5	Weathered Limerock	143575	2650	-	45	62
78.5	80	SC	155350	2780	-	45	55

Notes:
1) These values should be considered ultimate soil parameters.

5.3) Modulus of Subgrade Reaction

A vertical modulus of subgrade reaction and a horizontal modulus of subgrade reaction may be derived using the following equations and soil parameters for analysis of foundations.

$$k_{s-v} = 12 \cdot SF \cdot q_a$$

$$k_{s-h} = k_{s-v} \cdot B$$

Where;

q_a = Allowable Bearing Capacity (ksf)
SF = Factor of Safety
B = Base width (ft), use 1 if B < 1ft.
$k_{s\text{-}v}$ = Vertical Modulus of Subgrade Reaction (kcf)
$k_{s\text{-}h}$ = Horizontal Modulus of Subgrade Reaction (ksf)

6) SEISMIC SITE CLASS

The Site Class, per Section 1613.2.2 of the 2018 International Building Code (2018 IBC) and Chapter 20 of ASCE 7 (2016), based on the site soil conditions is Site Class D.

7) SOIL RESISTIVITY

Soil resistivity testing was performed at the TEP laboratory in accordance with ASTM G57 (Standard Test Method for Measurement of Soil Resistivity Using the Four Electrode Soil Box Method). The test results indicate a resistivity ranging from 990,000 ohm-cm in the near-surface soils to 14,000 ohm-cm at a depth of 8 feet (bgs). It should be noted that soil resistivity will fluctuate during the year due to seasonal variations, precipitation events and depth below surface.

8) CONSTRUCTION CONSIDERATIONS - SHALLOW FOUNDATION

The following recommendations pertain to the newly proposed tower foundation only. Should additional recommendations be required for lightly loaded support structures, such as the equipment shelter, TEP can provide these, at the client's request, for an additional fee.

8.1) Excavation

The boring data indicates excavation to the expected subgrade level for the shallow foundation will extend through sand. A large, tracked excavator should be able to remove the materials with moderate difficulty.

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.

8.2) Dewatering/Foundation Evaluation/Subgrade Preparation

As subsurface water was estimated to be encountered at a depth of 2 feet (bgs) during the subsurface exploration, dewatering will likely be required. In excavations shallower than 3 feet subsurface water can likely be controlled with the use of a sump and pump system and/or trenches. Excavations deeper than 3 feet will likely require the use of more advanced dewatering measures such as well points and/or sheet piling. Dewatering components should be placed to not interfere with the placement of backfill materials and/or concrete foundations and should be utilized to keep the localized water table below the bottom of any excavation.

After dewatering and 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 dense-graded stone be placed just after excavation to aid in surface stability.

8.3) 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 D698), 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.

8.4) Reuse of Excavated Soil

The sand that meets the above referenced criteria can be utilized as backfill based on dry soil and site conditions at the time of construction.

9) CONSTRUCTION CONSIDERATIONS - DRILLED SHAFTS

Based on TEP's experience, a conventional drilled shaft rig (Hughes Tool LDH, or equivalent) can be used to excavate to the termination depth of TEP's boring. An earth auger can typically penetrate the materials encountered to the termination depth of the boring with moderate to high difficulty. Special excavation equipment may be necessary for a shaft greater that 60-inches in diameter.

Due to the subsurface water and the sandy soil, the contractor should utilize the "slurry" method for shaft construction. The following are general procedure recommendations in drilled shaft construction using the "slurry" method:

1) Slurry drilled shafts are constructed by conventional caisson drill rigs excavating beneath a drilling mud slurry. Typically, the slurry is introduced into the excavation after the water table has been penetrated and/or the soils on the sides of the excavation are observed to be caving-in. When the design shaft depth is reached, fluid concrete is placed through a tremie pipe at the bottom of the excavation.

2) The slurry level should be maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the subsurface water level.

3) Inspection during excavation should include verification of plumbness, maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and prior to concreting.

4) A removable steel casing should be installed in the shaft to prevent caving of the excavation sides due to excavation disturbance and soil relaxation. Loose soils in the bottom of the shaft should be removed.

5) The specific gravity or relative density of the drilling mud slurry should be monitored from the initial mixing to the completion of the excavation. An increase in the specific gravity or density of the drilling slurry by as much as 10 percent is indicative of soil particles settling out of the slurry onto the bottom of the excavation. This settling will result in a reduction of the allowable bearing capacity of the bottom of the drilled shaft.

6) After approval, the drilled shaft should be concreted as soon as practical using a tremie pipe.

7) For slurry drilled shafts, the concrete should have a 6- to 8-inch slump prior to discharge into the tremie. The bottom of the tremie should be set at about one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie should be used, or a sliding plug introduced into the tremie before the concrete, to reduce the potential for the concrete being contaminated by the slurry. The bottom of the tremie must be maintained in concrete during placement, which should be continuous.

8) The protective steel casing should be extracted as concrete is placed. A head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the casing.

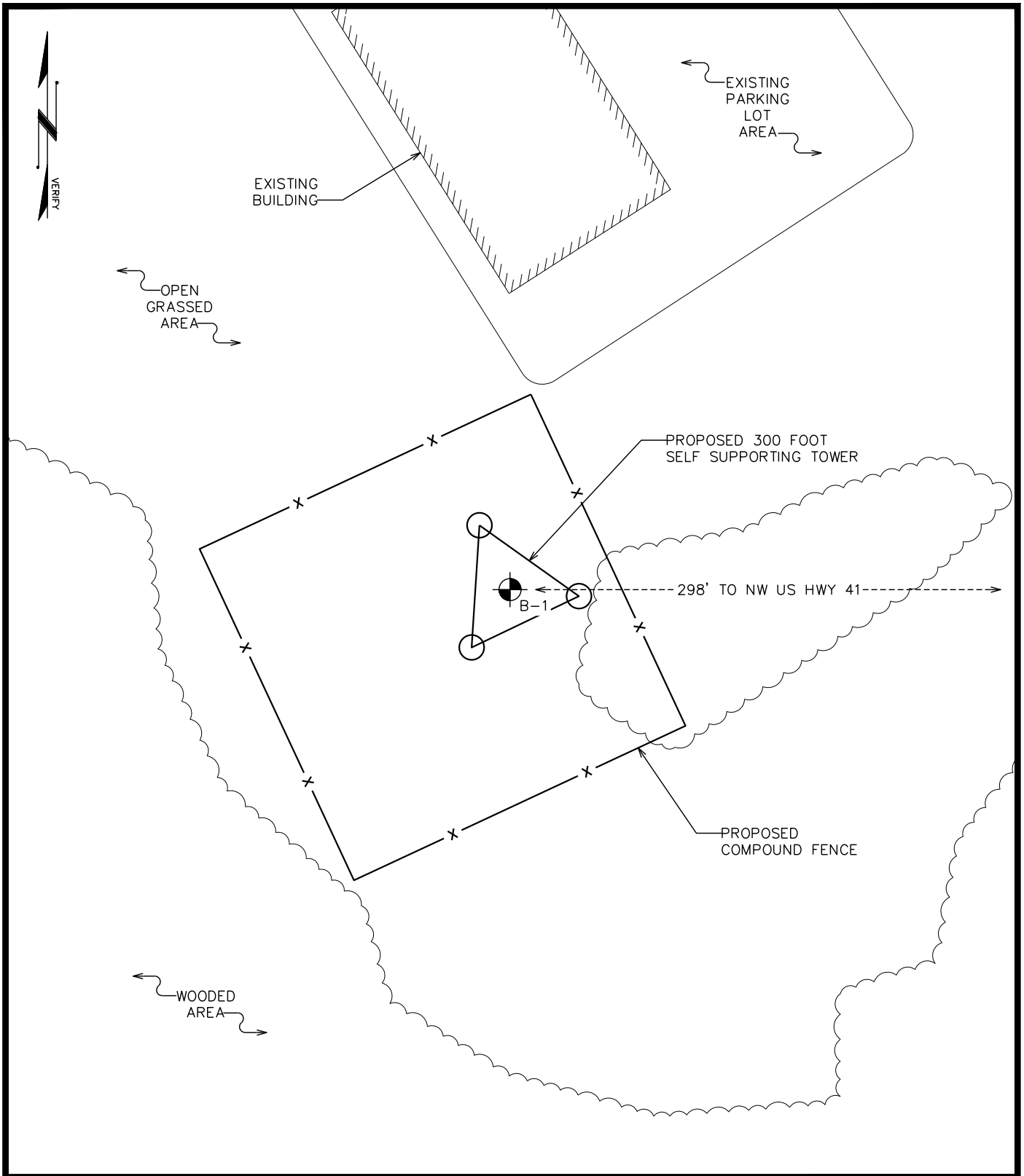
If variability in the subsurface materials is encountered, a representative of the Geotechnical Engineer should verify that the design parameters are valid during construction. Modification to the design values presented above may be required in the field.

10) SITE PHOTOGRAPHS

	Boring Location Prior to Drilling Activities
	Boring Location During Drilling Activities

APPENDIX A

BORING LAYOUT



BORING LAYOUT

SCALE: N.T.S.

PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
(919) 661-6351

PREPARED FOR:

OCG omnicom consulting group

2418 MILL CREEK CT., STE 2
TALLAHASSEE, FL 32308
(850) 792-4723

PROJECT INFORMATION:

SVFS #42

US HWY 41 SOUTH
LAKE CITY, FL 32055
(COLUMBIA COUNTY)

REVISION: 0

TEP JOB #: 60013.1063668

SHEET NUMBER:

C-1

APPENDIX B

BORING LOG

TEP
326 Tryon Road
Raleigh, NC 27603
919.661.6351
geotech@tepgroup.net

LOG OF BORING B-1

PROJECT	SITE ID:	TEP NO.:
SVFS 42		60013

DATE STARTED	DRILLING METHOD	HOLE SIZE	CITY, STATE
2/12/2025	Mud Rotary	3 in	Lake City, Florida

DATE COMPLETE	HAMMER WEIGHT/FALL	HAMMER TYPE	TOTAL DEPTH	DRILL RIG TYPE
2/12/2025	140lbs / 30in	Auto Hammer	80.0 FT	Diedrich D50

GROUND EL.	LOGGED BY	CHECKED BY	BACKFILL	DEPTH/EL. GROUNDWATER
	RAB	JDL	Cuttings	▽ 4.8/ ATD

BORING LOCATION: At the approximate location of the proposed tower

SAMPLE NUMBER	SAMPLE LENGTH (INCHES)	BLOW COUNTS (N) / REC% / RQD%	ELEVATION (FEET)	DEPTH (FEET)	DESCRIPTION AND CLASSIFICATION	REMARKS	POCKET PEN TSF	UNCONFINED STRENGTH, PSF	UNIT WEIGHT PCF
S1	24	1-2-2-2 (4)		0	0.0-2.0: Loose, light brown, fine to medium, poorly graded SAND (SP), trace silt and rootlets, moist				
S2	24	1-1-2-1 (3)		5	2.0-4.0: to very loose, pale brown, trace clay, no rootlets, wet				
S3	24				4.0-6.0: to loose, gray				
S4	24	1-2-3-4 (5)			6.0-8.0: to very loose, pale brown, no clay				
S5	24	1-1-2-4 (3)		10	8.0-13.5: Loose, light gray, fine to coarse, clayey SAND (SC), trace gravel and silt, wet				
		1-2-3-6 (5)							
S6	18	5-6-6 (12)		15	13.5-18.5: to medium dense, no gravel				
S7	18	5-7-7 (14)		20	18.5-23.5: Stiff, white, sandy lean CLAY (CL), trace silt, wet				
S8	18	2-4-7 (11)		25	23.5-28.5: Medium dense, light brown, fine to medium, clayey SAND (SC), trace silt, wet				
S9	18	3-5-8 (13)		30	28.5-33.5: Stiff, white, sandy lean CLAY (CL), trace silt, wet				
S10	18	6-10-12 (22)		35	33.5-38.5: to very stiff				
S11	18	5-19-23 (42)		40	38.5-43.5: Dense, white, fine, clayey SAND (SC), trace silt, wet				
S12	18	8-12-19 (31)		45	43.5-48.5: to pale brown				
S13	18	3-4-5 (9)		50	48.5-53.5: Stiff, pale brown, lean CLAY (CL), with sand, trace silt, wet	Driller Note: Loss of circulation from 48.5 feet bgs to the end of the boring			
S14	18	12-17-20 (37)		55	53.5-58.5: Dense, pale brown, fine, clayey SAND (SC), trace silt, wet				
S15	13	11-14-50/1"		60	58.5-63.5: to very dense, light brown, fine to coarse, with limerock fragments	Driller Note: Sand with limestone from 58.5 to 63.5 feet bgs			
S16	18	3-8-13 (21)		65	63.5-68.5: Very stiff, white, lean CLAY (CL), with sand, wet	Driller Note: Limestone from 63.5 feet bgs to the end of the boring			
S17	1	50/1"		70	68.5-78.5: Very dense, white, weathered LIMEROCK, wet				
S18	3	50/3"		75					
S19	11	22-50/5"		80	78.5-80.0: Very dense, light brown, fine to medium, clayey SAND (SC), trace silt, wet				
					80.0: Boring Terminated				
				85	Calibrated Hammer ETR: 60.6%				

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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.

Descriptive Terms	SPT Blow Count
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.

Descriptive Terms	SPT Blow Count
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 bases 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
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, little or no fines/sands
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-silt mixtures
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly-graded sands, little or no fines/sands/gravels
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
	ML	Inorganic silts and very fine sands, rock floor, silty or clayey fine sands or clayey silts with slight plasticity
	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

Sampler Symbols

- Split Spoon
- Standard Penetration Test (SPT)
- Pushed Shelby Tube
- Auger Cuttings
- Grab Sample
- Dynamic Cone Penetrometer
- Hand Auger
- Rock Core

Log Abbreviations

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

Information Regarding This Subsurface Exploration Report

The information contained in this report has been specifically tailored to the needs of the client at the time the report was provided, for the specific purpose of the project named in this report. The attached report may not address the needs of contractors, civil engineers, or structural engineers. Anyone other than the named client should consult with the geotechnical engineer prior to utilizing the information contained in the report.

It is always recommended that the full report be read. While certain aspects of the report may seem unnecessary or irrelevant; just as each project and site are unique, so are the subsurface investigation reports and the information contained in them. Several factors can influence the contents of these reports, and the geotechnical engineer has taken into consideration the specific project, the project location, the client's objectives, potential future improvements, etc. If there is any question about whether the attached report pertains to your specific project or if you would like to verify that certain factors were considered in the preparation of this report, it is recommended that you contact the geotechnical engineer.

Geotechnical subsurface investigations often are prepared during the preliminary stages of a project and aspects of the project may change later on. Some changes may require a report revision or additional exploration. Some changes that often need to be brought to the attention of the geotechnical engineer include changes in location, size and/or type of structure, modifications to existing structures, grading around the project site, etc. Some naturally occurring changes can also develop that impact the information contained in this geotechnical report such as earthquakes, landslides, floods, subsurface water levels changing, etc. It is always recommended that the geotechnical be informed of known changes at the project site.

Subsurface exploration reports are generated based on the analysis and professional opinions of a geotechnical engineer based on the results of field and laboratory data. Often subsurface conditions can vary – sometimes significantly – across a site and over short distances. It often is helpful to retain the geotechnical engineer's services during the construction process. Otherwise, the geotechnical cannot assume responsibility or liability for report recommendations which may have needed to change based on changing site conditions or misinterpretation of recommendations.

Geotechnical engineers assemble testing and/or boring logs based on their interpretation of field and laboratory data. Testing and/or boring logs should always be coupled with the subsurface exploration report. The geotechnical engineer and Tower Engineering Professionals cannot be held reliable for interpretations, analyses, or recommendations based solely on the testing and/or boring log if it is independent of the prepared report.

The scope of the subsurface exploration report does not include an assessment or analysis of environmental conditions, determination of the presence or absence of wetlands or hazardous or toxic materials on or below the ground surface. Any notes regarding odors, fill, debris, or anything of that nature are offered as general information for the client, often to help identify or delineate natural soil boundaries.

TEP

For additional information, please contact the geotechnical engineer named in the attached report.

ACKNOWLEDGE THE RECEIPT OF THE ADDENDUMS BY FILLING IN THE TABLE BELOW.

_____

SIGNATURE

ADDENDA	
NUMBER	DATE SENT

END OF ADDENDUM NO. 3

(Please acknowledge receipt of Addendums)