Cal -Tech Testing, Inc.

- Engineering
- Geotechnical
- Environmental

LABORATORIES

P O Box 1625 • Lake City, FL 32056
Tel (386) 755-3633 • Fax (386) 752-5456

450 SR 13N, Suite 106-308, Jacksonville, FL 32259
Tel (904) 381-8901 • Fax (904) 381-8902

March 6, 2020

Mr. Kris Fase
456 Swain Blvd.
Greenacres, Florida 33463

RE: Geotechnical Engineering Exploration Report
1003 NW Tiger Drain Road-House & Steel Building Structures
White Springs, Florida 32096
Cal-Tech Testing Inc. Project No. 20-00068-01

Dear Mr. Kris Fase:

This report presents the results of our geotechnical engineering exploration performed for the proposed House & Steel Building Structures at 1003 NW Tiger Drain Road in White Springs, Florida.

The purposes of the exploration were to determine and evaluate the general soil subsurface conditions at the property site and provide site preparation and foundation recommendations in regards to design and construction of the proposed residential home and work shop steel structures.

SITE AND PROJECT INFORMATION

Based on our observations during our field work, the site consists of a relatively flat and cleared vacant property surrounded by woods and trees.

Information you provided to us indicates the residential home will consists of an approximately 3,200 ft^2, 1-story structure, and a detach 2400 ft^2, 1-story, work shop steel structure. No information regarding the proposed structural loading system was provided.

SUBSURFACE SOIL EXPLORATION

Our subsurface soil exploration was performed on February 21, 2020 and consisted of drilling four (4) Standard Penetration Test (SPT) borings (B1 through B4) to a depth of 15 ft. at locations within the structures footprints you marked onsite. Refer to the enclosed Boring Location Plan.

We contacted Sunshine State One Call of Florida to mark out existing, known underground utilities prior to the beginning of our field investigation.

The SPT borings were advanced using a continuous flight auger and manual hammer. The split-spoon sampling was performed continuously in the upper 10 ft. and at 5 ft. intervals thereafter to the termination depth of the borings at 15 ft. The penetration test was performed by driving a 2-inch O.D. split spoon sampler with the hammer falling 30 inches. The number of hammer blows required to drive the sampler a total of 24 inches (upper 10 ft.) and 18 inches in 6-inch increments

2

were recorded in boring logs. The penetration resistance, N-values, is the summation of the second and third 6-inch increments and is used to derive soil engineering parameter indexes from empirical correlations. The boreholes were backfilled with soil cuttings at completion.

All soil samples were delivered to our geotechnical laboratory for their review and classification by our geotechnical engineer.

SUBSURFACE SOIL CONDITIONS

Generalized Subsurface Soil Profile

The generalized subsurface soil profile inferred from the results of the subsurface soil exploration consists of a 2 ft. to 5 ft. thick stratum of poorly graded SAND (SP) underlain by a 2 ft. to 3 ft. thick layer of SILTY SAND (SM), a 8 ft. to 10 ft. thick SANDY CLAY (CH) stratum and the BOTTOM SILTY SAND to the boring termination depths at 15 ft.

The recorded N-values indicate a predominate Very Loose (i.e. N<4) Relative Density in the SAND stratum and Loose (i.e. 5<N<10) to Medium Dense (i.e. 11<N<30) SILTY SAND. The SANDY CLAY stratum presented a Stiff (i.e. 9<N<15) to Very Stiff (i.e. 16<N<30) consistency. The BOTTOM SILTY SAND was encountered in a Medium Dense condition.

Analyses of the soil laboratory test results (i.e. Fine content and Atterberg Limits) suggest the SANDY CLAY stratum is inactive in terms of expansion with changes of moisture content and slightly over-consolidated.

Details of the subsurface soil strata, SPT blows/foot (N-value) and laboratory test results are presented in the log of borings enclosed to this report.

Groundwater

The groundwater was encountered first at a depth of 7 ft. at boring location B1 only. The USDA NRCS indicates groundwater at depths of 42 inches to 72 inches for the soil map unit covering the site.

Based on the Federal Emergency Administration (FEMA) Flood No. 12023C0167D, effective November 2, 2018 (enclosed), the property is located within an "Area of Minimal Flood Hazard."

FOUNDATION EVALUATION AND RECOMMENDATIONS

The primary geotechnical considerations for the support of the proposed residence home and work shop steel structures is the Very Loose and Loose relative density in the SAND and SILTY SAND strata; however, the proposed structures could be supported on a system of shallow foundations after performance of a site preparation work as indicated in the following paragraphs.

The recommended site preparation work should consist of the excavation and backfilling of the existing soils to a depth of 5 ft. and to 5 ft. beyond the structure's footprints. During the excavation the clay soils, if encountered, should be segregated from the sand and silty sand soils. Subsequently, the excavated sand and silty sand soils, or approved material, should be used to backfill in 12-in thick lifts compacted to at least 95% of the material's Maximum Dry Density (ASTM D-1557) and to the general ground surface elevations.

Rising of the existing ground levels, if required, to establish the finished floor elevations after excavation and backfilling, should be performed by placing and compacting 12-inch thick lifts of approved material up to the proposed finish grades. Each lift should be compacted to at least 95% of the material's Maximum Dry Density (ASTM D 1557).

Approved material should consist of granular soils with size particles not larger than 3 inches, maximum 12% of fines (i.e. wash 200) and no organic content. Soils with higher fines content are acceptable; however, may result difficult to compact.

After satisfactory performance of the recommended site preparation work the proposed structures could be supported on footings bearing on the backfilled sand a silty sand or approved material and designed with a safe soil contact pressure of 2,000 lb/ft^2 and settlements within 1 inch.

An allowable sliding resistance of 0.35 could be used for the concrete footings cast directly on the backfilled sand, silty sand or approved soils.

The footing subgrade upper 12 inches should be compacted to at least 95% of the material's Maximum Dry Density (ASTM D 1557).

The ground floor slabs could be supported on grade after performance of the recommended site preparation work.

Positive drainage of stormwater should be directed away from the structures to avoid moisture accumulation beneath the structure footings and slabs.

LIMITATIONS

Information on subsurface strata and groundwater levels shown on the logs represent conditions encountered only at the locations and depths indicated and at the time of the exploration. If different conditions are encountered during construction, they should be immediately brought to our attention for evaluation as they may affect our recommendations.

The project site is located within Sinkhole Area III; however, sinkhole investigation was outside the scope of services of the exploration work.

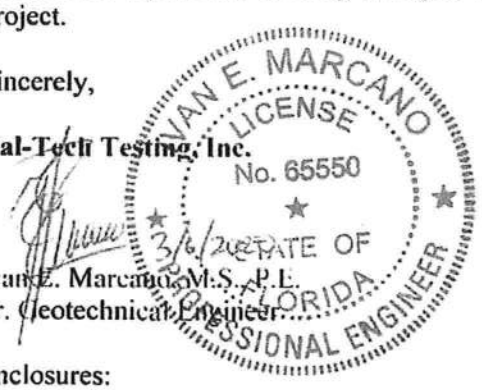
CLOSURE

We are available for inspection of the site during the exploratory test pits and to test the backfill and fill compaction.

It has been a pleasure working with you and we look forward to continuing our work on this project.

Sincerely,

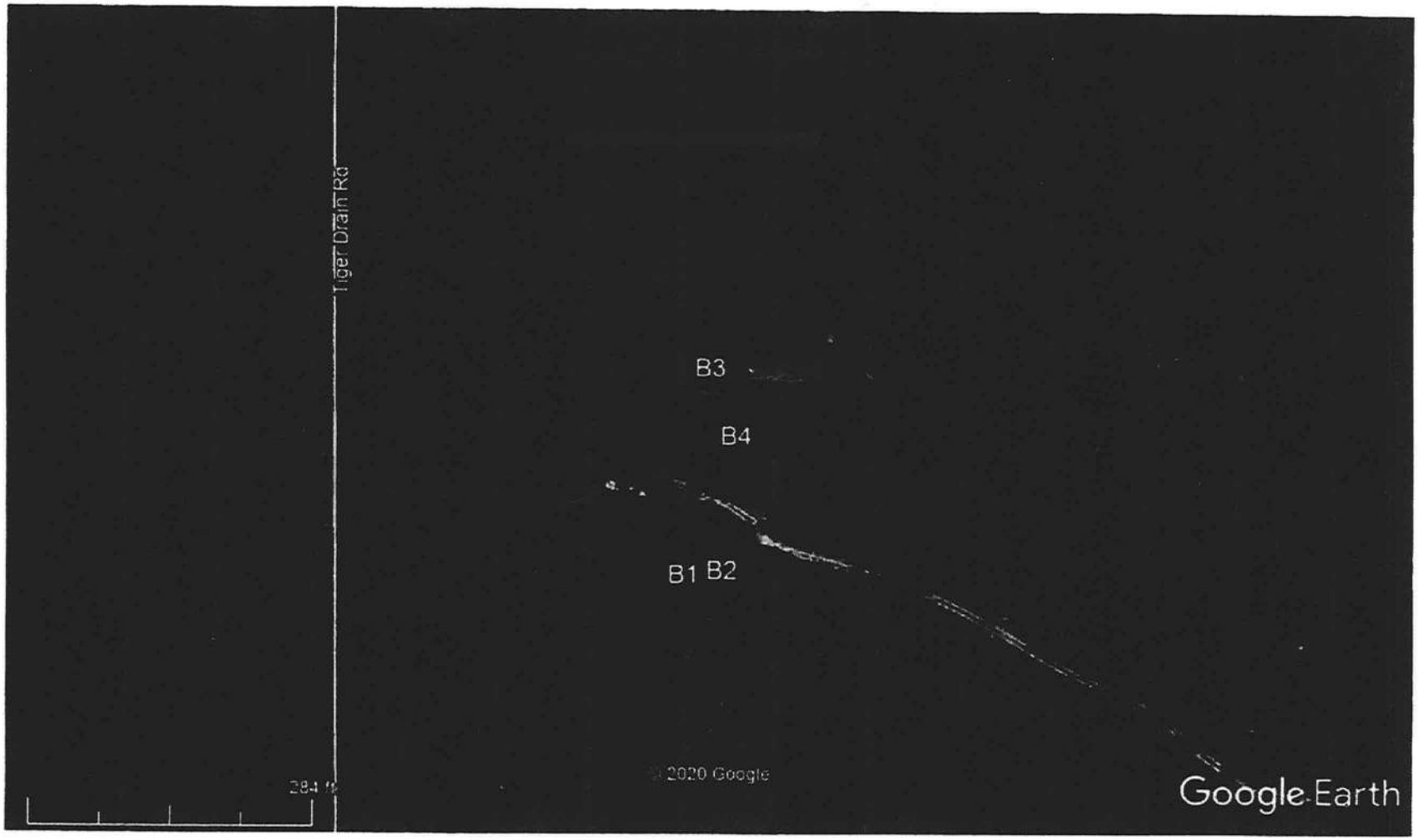
Cal-Tech Testing, Inc.



Ivan E. Marcano, M.S., P.E.
Sr. Geotechnical Engineer

Mike Stalvey, Jr.
Vice-President

Enclosures:
Boring Location Plan
FEMA Map
Boring Logs



CAL-TECH TESTING, INC.

P.O. BOX 1625
Lake City, Florida 32056-1625
Phone: (386) 755-3633
Fax: (386) 752-5456

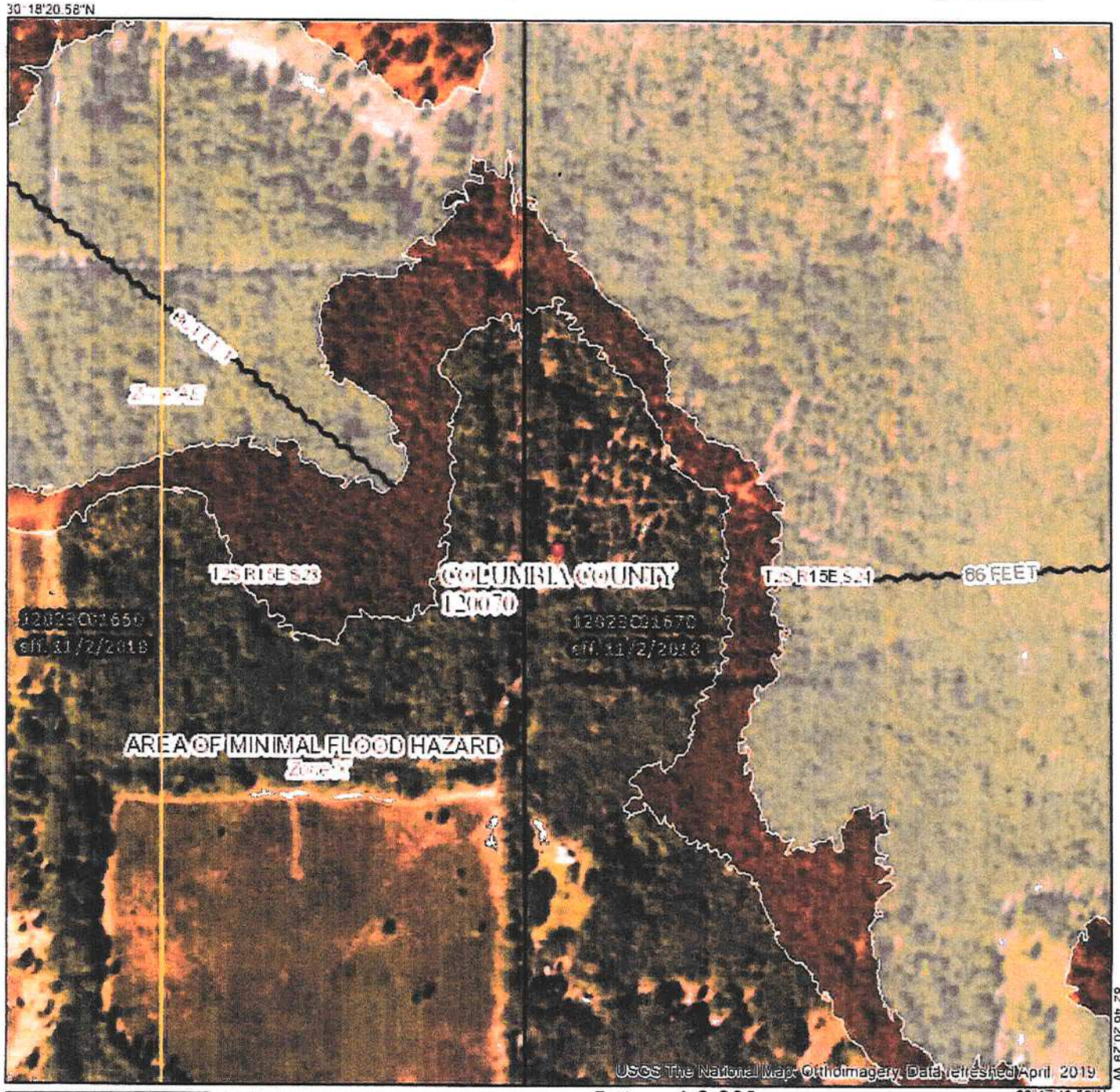
BORING LOCATION PLAN

House & Steel Building Structures

White Springs, Florida

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Are of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone L

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zon

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximat point selected by the user and does not repres an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3 6 2020 at 2:45:56 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Cal-Tech Testing, Inc.
3309 SR 247
Lake City, FL 32024
Telephone: 386-755-3633
Fax: 386-755-3633

BORING NUMBER B1

CLIENT Mr. Kris Fase
PROJECT NAME House & Steel Building Structures
PROJECT NUMBER 20-00068-01
PROJECT LOCATION White Springs Florida
DATE STARTED 2/21/20 **COMPLETED** 2/21/20
GROUND ELEVATION 0 ft **HOLE SIZE** 3-in dia. x 15 ft. depth
DRILLING CONTRACTOR Cal-Tech Testing, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
▽ **AT TIME OF DRILLING** 7.00 ft / Elev -7.00 ft
LOGGED BY M.S. **CHECKED BY** I.M.
AT END OF DRILLING ---
NOTES Elev. refered to ground surface
AFTER DRILLING —

ELEV. (ft)	MATERIAL DESCRIPTION	SYMBOL LOG	DEPTH SCALE (ft)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (%) (RQD) %	BLOW COUNTS (N VALUE)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	(SP) Yellowish brown **SAND**		2	1	SS	71	1-2-2-2 (4)	Boring Location Coordinates: N30°18'7.51" W82°46'36.67" SS=Split Spoon sampler
	(SM) Yellowish brown **SILTY SAND**		4	2	SS	75	2-1-2-4 (3)	Laboratory Test Result SS-2B Fines content=24.9%
-5	(SM) Gray **SILTY SAND**		6	3	SS	83	3-5-8-9 (13)	
	▽ (CH) Greenish gray **CLAY**		8	4	SS	75	5-8-8-9 (16)	
-10			10	5	SS	83	5-10-11-14 (21)	
			12					
-15	(SM) Light gray **SILTY SAND**		14	6	SS	78	4-6-6 (12)	Laboratory Test Result SS-6 Fines content=15.2%
	Bottom of borehole at 15.0 feet.							

Cal-Tech Testing, Inc
3309 SR 247
Lake City, FL 32024
Telephone: 386-755-3633
Fax: 386-755-3633

BORING NUMBER B2

CLIENT Mr. Kris Fase
PROJECT NAME House & Steel Building Structures
PROJECT NUMBER 20-00068-01
PROJECT LOCATION White Springs Florida
DATE STARTED 2/21/20 **COMPLETED** 2/21/20
GROUND ELEVATION 0 ft **HOLE SIZE** 3-in dia. x 15 ft. depth
DRILLING CONTRACTOR Cal-Tech Testing, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
AT TIME OF DRILLING --- Not encountered
LOGGED BY M.S. **CHECKED BY** I.M.
AT END OF DRILLING ---
NOTES Elev. refered to ground surface
AFTER DRILLING ---

ELEV. (ft)	MATERIAL DESCRIPTION	SYMBOL LOG	DEPTH SCALE (ft)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (%) (ROD) %	BLOW COUNTS (N VALUE)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC)
	(SP) Yellowish brown **SAND**		2	1	SS	67	1-2-2-2 (4)	Boring Location Coordinates: N30°18'7.55" W82°46'36.23" SS=Split Spoon sampler
			4	2	SS	58	1-2-2-2 (4)	
-5	(SM) Gray **CLAY**		6	3	SS	71	2-5-5-2 (10)	Laboratory Test Result SS-3B Fines content=47.9% SS-3B Moisture content=26.2% SS-3B Liquid Limit=33 SS-3B Plasticity Index=21
	(CH) Greenish gray **CLAY**		8	4	SS	54	5-6-8-12 (14)	
-10			10	5	SS	67	8-10-10-10 (20)	Laboratory Test Result SS-4 Fines content=73.1% SS-4 Moisture content=4212% SS-4 Liquid Limit=57 SS-4 Plasticity Index=25
			12					
-15	(SM) Light gray **SILTY SAND**		14	6	SS	72	7-8-7 (15)	
	Bottom of borehole at 15.0 feet.							

Cal-Tech Testing, Inc.
3309 SR 247
Lake City, FL 32024
Telephone: 386-755-3633
Fax: 386-755-3633

BORING NUMBER B3

CLIENT Mr. Kris Fase
PROJECT NAME House & Steel Building Structures
PROJECT NUMBER 20-00068-01
PROJECT LOCATION White Springs Florida
DATE STARTED 2/21/20 **COMPLETED** 2/21/20
GROUND ELEVATION 0 ft **HOLE SIZE** 3-in dia. x 15 ft. depth
DRILLING CONTRACTOR Cal-Tech Testing, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
AT TIME OF DRILLING --- Not encountered
LOGGED BY M.S. **CHECKED BY** I.M.
AT END OF DRILLING ---
NOTES Elev. refered to ground surface
AFTER DRILLING ---

ELEV (ft)	MATERIAL DESCRIPTION	SYMBOL LOG	DEPTH SCALE (ft)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (%) (ROD) %	BLOW COUNTS (N VALUE)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	(SP) Yellowish brown **SAND**		2	1	SS	75	1-2-1-2 (3)	Boring Location Coordinates: N30°18'9.47" W82°46'36.06"
			4	2	SS	71	2-2-2-2 (4)	SS=Split-Spoon sampler
-5	(SM) Gray **SILTY SAND**		6	3	SS	71	3-4-5-7 (9)	
	(CH) Greenish gray **CLAY**		8	4	SS	79	5-7-8-9 (15)	
-10			10	5	SS	67	5-8-11-14 (19)	
			12					
-15	(SM) Light brownish gray **SILTY SAND**		14	6	SS	78	8-8-8 (16)	Laboratory Test Result SS-6 Fines content=24.6%
	Bottom of borehole at 15.0 feet.							

Cal-Tech Testing, Inc.
3309 SR 247
Lake City, FL 32024
Telephone: 386-755-3633
Fax: 386-755-3633

BORING NUMBER B4

CLIENT Mr. Kris Fase
PROJECT NAME House & Steel Building Structures
PROJECT NUMBER 20-00068-01
PROJECT LOCATION White Springs Florida
DATE STARTED 2/21/20 **COMPLETED** 2/21/20
GROUND ELEVATION 0 ft **HOLE SIZE** 3-in dia. x 15 ft. depth
DRILLING CONTRACTOR Cal-Tech Testing, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
AT TIME OF DRILLING --- Not encountered
LOGGED BY M.S. **CHECKED BY** I.M.
AT END OF DRILLING ---
NOTES Elev. refered to ground surface
AFTER DRILLING ---

ELEV. (ft)	MATERIAL DESCRIPTION	SYMBOL LOG	DEPTH SCALE (ft)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (%) (RQD) %	BLOW COUNTS (N VALUE)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	(SP) Yellowish brown **SAND**		2	1	SS	71	1-2-1-2 (3)	Boring Location Coordinates: N30°18'8.94" W82°46'36.06"
	(SM) Yellowish brown **SILTY SAND**		4	2	SS	75	2-2-2-5 (4)	SS=Split-Spoon sampler
-5	(CH) Greenish gray **CLAY**		6	3	SS	83	5-6-6-9 (12)	
			8	4	SS	71	5-8-8-13 (16)	
-10			10	5	SS	67	6-8-9-13 (17)	
			12					
-15	(SM) Light brownish gray **SILTY SAND**		14	6	SS	72	5-7-7 (14)	
	Bottom of borehole at 15.0 feet.							

HOME

Record Search | Search Results | Parcel Details | GIS Map

Columbia County Property Appraiser

Columbia County Property Appraiser

Jeff Hampton

Parcel: 24-2S-15-00087-000

Owner & Property Info

Owner	FASE KRISTOPHER J & KAREN 455 SWAIN BLVD GREENACRES FL 33413
Site	
Description	3/12 OF N1/4 313-476 ... PR DEED ...
Area	60 AC
S/T/R	24-2S-15
Use Code	NO AG ACRE (009900)
Tax District	3

Property & Assessment Values

	2019 Certified Values		2020 Working Values
Mkt Land	$33,397	Mkt Land	$33,397
Ag Land	$0	Ag Land	$0
Building	$0	Building	$0
XFOB	$0	XFOB	$0
Just	$33,397	Just	$33,397
Class	$0	Class	$0
Appraised	$33,397	Appraised	$33,397
SOH Cap	$0	SOH Cap	$0
Assessed	$33,397	Assessed	$33,397
Exempt	$0	Exempt	$0
Total Taxable	county:$33,397 city:$33,397 other:$33,397 school:$33,397	Total Taxable	county:$33,397 city:$33,397 other:$33,397 school:$33,397

2020 Working Values

Retrieve Tax Record | 2019 TRIM (pdf) | Property Card | Parcel List Generator | Show on GIS Map | Print

Aerial Viewer | Pictometery | Google Maps

Sales History

Sale Date	Sale Price	Book/Page	Deed	V/I	Quality	RCode
3/15/2013	$140,000		WD	V	Q	01
12/7/2009	$100		PR	V	U	18

Building Characteristics

Bldg Sketch	Bldg Item	Bldg Desc	Year Blt	Base SF	Actual SF	Bldg Value
NONE						

Extra Features & Out Buildings

Code	Desc	Year Blt	Value	Units	Dims	Condition (% Good)
NONE						

Land Breakdown

Land Code	Desc	Units	Adjustments	Eff Rate	Land Value
009900	AC NON-AG MKT	60.000 AC	1.00/1.00 1.00/1.00	$1,042	$33,397

Search Result: 1 of 2 | Next >>

8:34 AM 5/19/2020

Fase Farm

6/3/2020

Kris Fase (561) 644-1284
Karen Fase (561) 767-6391
Current residence: 456 Swain Blvd, Greenacres, FL 33463

Columbia County Site Location for Steel Building:

1003 NW Tiger Drain Rd
White Springs FL 32096

Steel Building

Apex Metal Building
Jason Bullock
386-209-3779

Septic

Lundy Septic
Adam Lundy
386-590-6272

Slab

Parrish Concrete
Larry Parrish
386-623-6374

Plumbing

Paradise Plumbing Services
Mark Dawson
386-288-6407

Electrical

TBD - Holly Electric?