318 Soil Survey

318.1 General

The Soil Survey sheet (essentially a soil test analysis sheet) depicts the various types of soils encountered within the limits of the project. This sheet also shows the classification, mechanical properties and recommended usage of those soils. A preformatted CADD sheet can be found in the FDOT CADD Software.

Assign soils having identical characteristics to the same stratum and group for identification and recommendation purposes. The test analysis sheet must be signed by the responsible Engineer.

318.2 Roadway Soil Survey Compilation and Presentation

Upon completion of the proposed typical section, and after placing alignment, proposed grades and existing utilities on the plan-profile sheets and preliminary sections, prints of these sheets must be utilized for determining the location and depth of borings for the sampling of soils for testing and classifications. These classification and test results, including pH, resistivity, sulfides, and chlorides must be shown on the test analysis sheet. Show date and weather conditions at the time of sampling. Refer to ***Exhibit 318-1*** for an example of Soil Survey sheet.

After completion of soils testing, show the boring data on cross sections by columns approximately 1/4 inch wide below the ground line at test sample locations. Show stratum limits and numbers inside the column. Transmit this information to the appropriate responsible materials engineer for verification. Retain one hard copy of the soils information, including cross sections with soils information, in the Soils Engineer's Record.

318.3 Other Soil Surveys

Soil surveys other than those for roadway plans are required for various plans components. Included in these are soil surveys/borings for retention/detention ponds, overhead sign structures, high mast poles and traffic signal mast arms.

Soil Survey sheets generated for such components are generally located in the plans set with the other details and information for each component. Requirements for the Soil Survey sheets are similar to those prepared for the roadway soil survey, showing such things as the location of test holes, various strata encountered, soil properties, classification and recommended usage.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

DATE OF SURVEY : 2/15/2018-5/1/2018
SURVEY MADE BY : SOIL SURVEY, INC.
SUBMITTED BY : LEIA I. CROSSWELL, P.E.

PROJECT NAME: _____

FINANCIAL PROJECT ID : _____

DISTRICT : 3
ROAD NO : SR 22
COUNTY : BAY

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA. : 125+87 SURVEY ENDS STA. : 442+67
REFERENCE: BASELINE SURVEY

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS % PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	% MOISTURE	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohms-cm	CHLORIDE ppm	SULFATES ppm	pH
1	0	--	0	--	0	--	--	--	--	--	0	--	N.P.	--	ROCK BASE	0	--	--	--	--
2	0	--	0	--	4	87-98	77-93	59-82	44-55	3-10	0	--	N.P.	A-3	SUBGRADE, GRAY & TAN SAND W/TRACE SILT, LIMEROCK & SHELL	0	--	--	--	--
3	7	3.2-4.4	7	8-20	7	94-100	86-94	65-71	34-45	15-21	0	--	N.P.	A-2-4	FILL, DARK BROWN SAND W/SOME SILT & TRACE LIMEROCK	7	34000-43000	40-60	18-72	6.4-8.3
4	3	1.2-2.2	4	15-25	4	84-100	71-93	60-90	53-82	37-45	4	25-38	5-9	A-4	GRAY AND BROWN SILTY SAND W/TRACE CLAY AND LIMESTONE FRAGMENTS	4	23000-26000	60-120	84-96	8.4-8.9
5	0	--	0	--	3	100	99-100	96-98	75-80	30-34	3	42-44	11-15	A-2-7	TAN AND LIGHT GRAY SILTY SAND W/SOME CLAY AND TRACE SHELL	3	6600-8000	60-120	156-216	7.5-8.2
6	3	22-40	3	47-150	3	--	--	--	--	30-46	3	25-33	10-15	A-8	MUCK, ORGANIC DARK BROWN SILTY SAND W/SOME CLAY	0	--	--	--	--
7	0	--	0	--	3	100	88-92	73-79	60-69	51-55	3	55-61	38-53	A-7-6	YELLOW AND GRAY SILTY SANDY CLAY	0	--	--	--	--
8	3	16-20	3	20-58	3	99-100	97-99	88-97	77-80	10-15	0	--	N.P.	A-2-4	ORGANIC BROWN SAND W/TRACE SHELL	3	2000-3500	120	120	4.6-5.2
9	0	--	0	--	0	--	--	--	--	--	0	--	--	--	NATURAL LIMESTONE	0	--	--	--	--

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE MAKE FINAL CHECK AFTER GRADING

▼ - WATER TABLE ENCOUNTERED

▽ - ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL

GNE - GROUND WATER NOT ENCOUNTERED

The material from Stratum Number 1 is Rock Base under Asphaltic Concrete.

The material from Stratum Number 2 appears satisfactory for use in the embankment when utilized in accordance with Standard Plans, Index 120-001.

The material from Stratum Number 3 appears satisfactory for use in the embankment when utilized in accordance with Standard Plans, Index 120-001. However, this material is likely to retain excess moisture and may be difficult to dry and compact. It should be used in the embankment above the water level existing at the time of construction. This material may not be used in the subgrade portion of the roadbed due to its organic content.

The materials from Stratum Numbers 4 and 5 are plastic materials and shall be removed in accordance with Standard Plans, Index 120-002. They may be placed above the existing water level at the time of construction, to within 4 feet of the proposed base. They should be placed uniformly in the lower portion of the embankment for some distances along the project rather than full depths for short distances.

The material from Stratum Numbers 6 and 8 is ORGANIC/A-8 material and shall be removed in accordance with Standard Plans, Index 120-002, except where noted in the cross sections.

The material from Stratum Number 7 is Highly Plastic material and shall be removed in accordance with Standard Plans, Index 120-002. It may be used within the project limits as indicated in Standard Plans, Index 120-001 only when excavated within the project limits and is not to be used when obtained from outside the project limits.

The material from Stratum Number 9 is the Natural Limestone Formation. Special tools and equipment may be required to excavate and/or dewater this material.

The " -- " indicates an unmeasured parameter.

LEIA I. CROSSWELL LICENSE No 99995 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Leia I. Crosswell
2018.10.11 8:31:01 - 4'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOIL SURVEY, INC.
321 EAST 2ND STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 11235
LEIA I. CROSSWELL, P.E. NO. 99995

Exhibit 318-1
Date: 1/1/19

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LEIA I. CROSSWELL, P.E.
P.E. NO. 99995
SOIL SURVEY, INC.
321 EAST 2ND STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 11235

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

ROADWAY SOIL SURVEY

SHEET NO. GR-1

$DATE$ $TIME$