ZERO RISE REPORT

Prepared for:

Betsy & Rolando Soto

23676 S. U.S. Hwy. 441
High Springs, FL

COLUMBIA COUNTY

November 1, 2019

Prepared by:

Carol Chadwick, P.E.
307.680.1772
ccpewyo@gmail.com

Digitally signed by Carol Chadwick
DN: c=US, o=Unaffiliated, ou=A01410C0000016CDF503D0F00000CBA, cn=Carol Chadwick
Date: 2019.11.02 17:44:24 -04'00'

CC Job FL18050

TABLE OF CONTENTS

PROJECT DESCRIPTION

Betsy and Rolando Soto would like to permit improvements to their property located at 23676 S. U.S. Hwy 441, High Springs, FL (Parcel #21-7S-17-10045-000). An existing wood and block structure with an area of 1236 s.f. will be removed as it is located too close to U.S. Hwy. 441. The proposed structure will be constructed with concrete masonry units.

The width of the existing structure, constructed pre-2000, perpendicular to the river flow is 37.7 feet. Currently, the new structure is 31.5 feet wide with a 15-foot wide deck on both sides with 6' stairs for a total width of 68 feet perpendicular to the river flow.

No trees will be removed for the proposed construction. The proposed structure is not located within 75 feet of the river. Please see the attached Site Plan.

Photo 1. Existing and new structures taken at the northeast corner of existing house looking west.

Photo 2. Existing structure looking south down US Hwy 441.

Photo 3. New structure from burn pit looking east toward US Hwy 441.

ANALYSIS

A Zero Rise Certification with supporting documentation is attached. A new cross-section was interpolated from existing cross-sections and is shown on the Site Plan. The following steps were executed in performing the zero rise calculations:

1. Run the model with Suwannee River Water Management District (SRWMD) existing cross-sections. Verify that the model matches the original flood study results.

   The output from the run using the existing cross-sections matched the original flood study. The HEC-RAS model was obtained from SRWMD.

2. Interpolate between existing cross-sections and add a new cross-section at the site location.

   A new cross-section, RS 27.72 was interpolated from RS 27.76 and RS 27.68.

3. Verify the run using by confirming that the additional cross-section matches the original output.

   The interpolated cross-sections were calculated using HEC-RAS 5.0.3 from the model obtained from SRWMD so the 100-year flood levels are consistent with the current flood study.

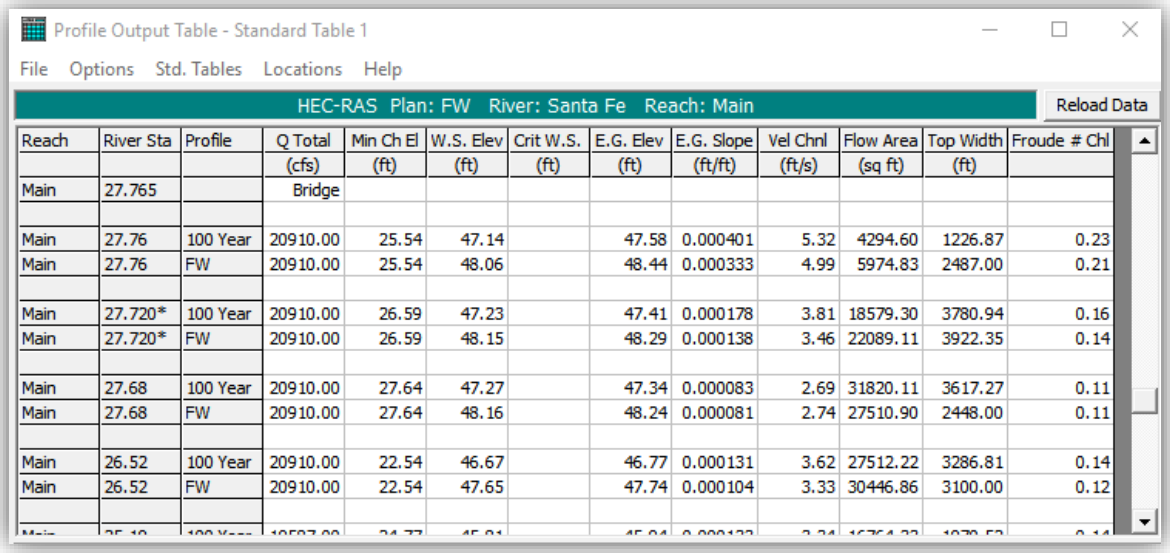
4. Add obstructions along the new cross-section to model the new development.

   For pre-development, one 37.7' wide obstruction was added at cross-section RS 27.72 to model the existing structure, circa pre-2000. For post-development, one 68.0' wide obstruction was added at cross-section RS 27.72 to model the proposed structure.

5. Verify the run including the obstacles does not obstruct flows or cause more than a 0.01 foot rise in the 100-year flood elevations of the Santa Fe River.

   Calculations show no obstruction of flow and the water surface elevations for all runs show no increase; therefore, a zero rise is achieved. Table 1 shows the profile data for pre-development conditions and Table 3 shows the profile date for post-development conditions. Table 2 shows the blocked obstructions for pre-development conditions and Table 4 shows the blocked obstructions for post-development. Tables 5 and 6 list the stations and elevations for the cross-section at RS 27.72 for pre-development and post-development conditions, respectively.

Table 1. Pre-development profile data.



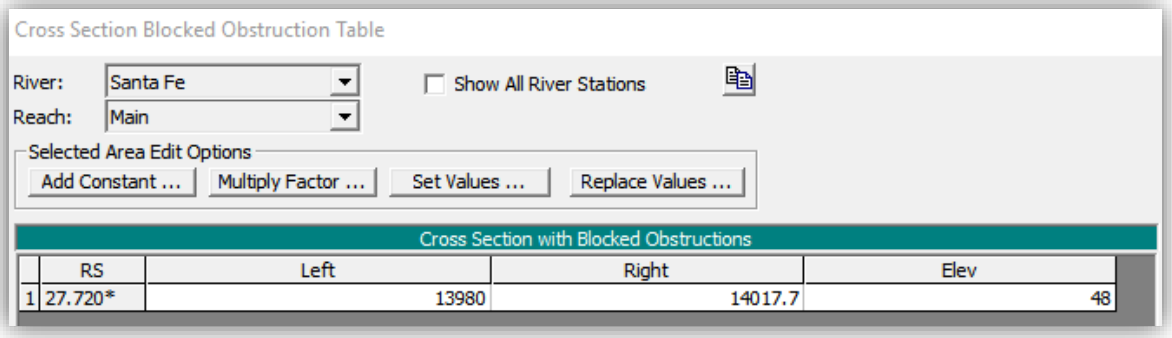
Profile Output Table - Standard Table 1

File Options Std. Tables Locations Help

HEC-RAS Plan: FW River: Santa Fe Reach: Main — Reload Data

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main	27.765		Bridge									
Main	27.76	100 Year	20910.00	25.54	47.14		47.58	0.000401	5.32	4294.60	1226.87	0.23
Main	27.76	FW	20910.00	25.54	48.06		48.44	0.000333	4.99	5974.83	2487.00	0.21
Main	27.720*	100 Year	20910.00	26.59	47.23		47.41	0.000178	3.81	18579.30	3780.94	0.16
Main	27.720*	FW	20910.00	26.59	48.15		48.29	0.000138	3.46	22089.11	3922.35	0.14
Main	27.68	100 Year	20910.00	27.64	47.27		47.34	0.000083	2.69	31820.11	3617.27	0.11
Main	27.68	FW	20910.00	27.64	48.16		48.24	0.000081	2.74	27510.90	2448.00	0.11
Main	26.52	100 Year	20910.00	22.54	46.67		46.77	0.000131	3.62	27512.22	3286.81	0.14
Main	26.52	FW	20910.00	22.54	47.65		47.74	0.000104	3.33	30446.86	3100.00	0.12

Table 2. Pre-development blocked obstructions.



Cross Section Blocked Obstruction Table

River: Santa Fe — Show All River Stations

Reach: Main

Selected Area Edit Options

Add Constant ... | Multiply Factor ... | Set Values ... | Replace Values ...

Cross Section with Blocked Obstructions

	RS	Left	Right	Elev
1	27.720*	13980	14017.7	48

Table 3. Post-development profile data.

Profile Output Table - Standard Table 1

File Options Std. Tables Locations Help

HEC-RAS Plan: FW River: Santa Fe Reach: Main — Reload Data

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main	27.765		Bridge									
Main	27.76	100 Year	20910.00	25.54	47.14		47.58	0.000401	5.32	4294.60	1226.87	0.23
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Main	27.720*	100 Year	20910.00	26.59	47.23		47.41	0.000178	3.81	18561.02	3750.64	0.16
Main	27.720*	FW	20910.00	26.59	48.15		48.29	0.000138	3.47	22037.45	3854.34	0.14
Main	27.68	100 Year	20910.00	27.64	47.27		47.34	0.000083	2.69	31820.11	3617.27	0.11
Main	27.68	FW	20910.00	27.64	48.16		48.24	0.000081	2.74	27510.90	2448.00	0.11
Main	26.52	100 Year	20910.00	22.54	46.67		46.77	0.000131	3.62	27512.22	3286.81	0.14
Main	26.52	FW	20910.00	22.54	47.65		47.74	0.000104	3.33	30446.86	3100.00	0.12

Table 4. Post-development blocked obstructions.

Cross Section Blocked Obstruction Table

River: (All Rivers) Show All River Stations

Reach:

Selected Area Edit Options

Add Constant ... | Multiply Factor ... | Set Values ... | Replace Values ...

Cross Section with Blocked Obstructions

	River	Reach	RS	Left	Right	Elev
1	Santa Fe	Main	27.720*	13965	14033	58.28

Table 5. Pre-development RS 27.72 cross-section data.

Cross Section Coordinates		
	Station	Elevation
1	9675	53.84
2	9968.62	50.32
3	10067.02	49.4
4	10092.68	49.13
5	10114.07	48.9
6	10175.22	47.88
7	10212.86	47.47
8	10241.7	46.73
9	10259.9	46.33
10	10284.99	45.67
11	10361.82	44.13
12	10448.7	42.15
13	10476.3	41.53
14	10559.4	40.21
15	10627.08	39.96
16	10720.92	39.75
17	10804.72	40.07
18	10830.69	40.14
19	10883.27	40.53
20	10884	40.54
21	10899.97	36.07
22	10920.73	30.72
23	10929.86	28.56
24	10932.04	28.52
25	10954.27	28.51
26	10974.26	28.73
27	10991	26.59
28	11020.92	26.84
29	11040	26.59
30	11062.87	27.01
31	11089.28	27.65
32	11093.69	28.16
33	11106.62	30.19
34	11124.48	32.57
35	11127.5	40.34
36	11172.21	41.09
37	11202.35	43.49
38	11232.5	45.19
39	11276.17	45.34
40	11348.95	45.49
41	11350.98	45.49
42	11410.29	45.32
43	11462.27	45.31
44	11475.78	45.33
45	11487.22	45.71
46	11503.85	45.68
47	11543.36	44.55
48	11591.18	43.9
49	11619.73	43.6
50	11668.12	43.21

Cross Section Coordinates		
	Station	Elevation
51	11759.61	42.86
52	11822.01	42.57
53	11878.13	42.23
54	11959.22	41.89
55	11963.61	41.88
56	12030.96	41.64
57	12106.18	40.84
58	12235.77	39.65
59	12257.6	39.37
60	12286.31	39.39
61	12287.75	39.39
62	12325.18	39.98
63	12381.32	40.19
64	12472.22	40.61
65	12480.08	40.64
66	12594.45	40.8
67	12670.65	41.25
68	12826.7	42.35
69	12842.92	42.43
70	12960.59	43.27
71	12976	43.39
72	13107.01	45.99
73	13131.94	46.49
74	13267.1	46.59
75	13272.69	46.55
76	13418.89	45.66
77	13526.99	45.28
78	13598.75	45.32
79	13620.43	45.44
80	13767.17	45.83
81	14006.29	46.46
82	14150.8	49.7
83	14166.39	49.74
84	14193.42	50.71
85	14218.38	50.93
86	14562.5	54.34

Table 6. Post-development RS 27.72 cross-section data.

Cross Section Coordinates

	Station	Elevation
1	9675	53.84
2	9968.62	50.32
3	10067.02	49.4
4	10092.68	49.13
5	10114.07	48.9
6	10175.22	47.88
7	10212.86	47.47
8	10241.7	46.73
9	10259.9	46.33
10	10284.99	45.67
11	10361.82	44.13
12	10448.7	42.15
13	10476.3	41.53
14	10559.4	40.21
15	10627.08	39.96
16	10720.92	39.75
17	10804.72	40.07
18	10830.69	40.14
19	10883.27	40.53
20	10884	40.54
21	10899.97	36.07
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25	10954.27	28.51
26	10974.26	28.73
27	10991	26.59
28	11020.92	26.84
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35	11127.5	40.34
36	11172.21	41.09
37	11202.35	43.49
38	11232.5	45.19
39	11276.17	45.34
40	11348.95	45.49
41	11350.98	45.49
42	11410.29	45.32
43	11462.27	45.31
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45	11487.22	45.71
46	11503.85	45.68
47	11543.36	44.55
48	11591.18	43.9
49	11619.73	43.6
50	11668.12	43.21

Cross Section Coordinates

	Station	Elevation
51	11759.61	42.86
52	11822.01	42.57
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60	12286.31	39.39
61	12287.75	39.39
62	12325.18	39.98
63	12381.32	40.19
64	12472.22	40.61
65	12480.08	40.64
66	12594.45	40.8
67	12670.65	41.25
68	12826.7	42.35
69	12842.92	42.43
70	12960.59	43.27
71	12976	43.39
72	13107.01	45.99
73	13131.94	46.49
74	13267.1	46.59
75	13272.69	46.55
76	13418.89	45.66
77	13526.99	45.28
78	13598.75	45.32
79	13620.43	45.44
80	13767.17	45.83
81	14006.29	46.46
82	14150.8	49.7
83	14166.39	49.74
84	14193.42	50.71
85	14218.38	50.93
86	14562.5	54.34

CONCLUSION

Calculations show no obstruction of flow and the water surface elevations show no increase; therefore, a zero rise is achieved.

ZERO RISE CERTIFICATION

CAROL CHADWICK, P.E.
Civil Engineer
1208 S.W. Fairfax Glen
Lake City, FL 32025
307.680.1772
ccpewyo@gmail.com

November 1, 2019

ZERO RISE CERTIFICATION

Owners:	Betsy & Rolando Soto
Property Address:	23676 S. U.S. Hwy 441, High Springs, FL
Property Description:	23676 S. U.S. Hwy 441, High Springs, FL Section 21, Township 7 South, Range 17 East Columbia County, Florida
Structures in Floodway:	1200 s.f. residence
River Mile:	RS 27.72
Elevation of 100-year flood:	47.4 feet
Community Panel:	1200070 0551 C

I hereby certify that the construction of the residence will not obstruct flow or cause a rise in the 100-year flood elevation of the Santa Fe River.

CAROL J. CHADWICK LICENSE No. 82560 STATE OF FLORIDA PROFESSIONAL ENGINEER

11/1/19

Carol Chadwick, P.E.

CC Job FL19074

APPLICATION FOR A WORKS OF THE DISTRICT PERMIT

&

COLUMBIA COUNTY PROPERTY APPRAISER MAP

APPLICATION FOR A WORK OF THE DISTRICT PERMIT FOR DISTRICT FLOODWAYS
FORM 40B-4.3020

Suwannee River Water Management District
9225 CR 49
Live Oak, FL 32060
TELEPHONE: 386.362.1001
TELEPHONE: 800.226.1066
FAX: 386.362.1056

Application #: _____
FOR AGENCY USE ONLY

Please provide complete information for the items on this application. Applicants should consult the listings of content and conditions for use of a permit in 40B-4.3020 and 40B-4.3030, Florida Administrative Code (F.A.C.). This information may be found on www.mysuwanneeriver.com. For a general permit to be valid, all of the information required on this application must be supplied and the proposed development must meet the conditions listed in 40B-4.3030, F.A.C.

Application Type: ☐ New Permit ☐ Modification to Existing Permit

Existing Permit Number and/or Related District Permit Numbers: _____

Name of Project (if applicable): Soto Residence	Parcel Identification Number(s): 21-7S-17-10045-000
Applicant's Name: Betsy & Rolando Soto	Project Description (please check all that apply): ☒ Buildings ☐ Boardwalk ☐ Deck ☐ Floating Dock ☐ Non-floating Dock ☐ Boat Ramp/Seawalls/Retaining Walls/Rip-Rap ☐ Other (please specify)
Title and Company:	Owner's Name, Title and Company (if different than applicant):
Mailing Address: 23676 S US Hwy 441	Owner's Address (including city, state and zip code):
City, State and Zip: High Springs, FL 32643	
Telephone Number (including area code): 786.942.9190	Telephone Number: / Email Address:
Fax Number (including area code):	
Email Address: seth.soto95@gmail.com	

County of Project:	Project Size (acres):	Section:	Township:	Range:
Columbia	0.15	21	7S	17

Property Address (if applicable): 23676 S. US Hwy 441, High Springs, FL 32643

A Works of the District Permit is authorized by Chapter 40B-4, F.A.C., which requires permittees to comply with all limiting conditions listed in rule 40B-4.3030, F.A.C. Submission of this application and subsequent development under the provisions of the permit constitutes agreement by the permittee to abide by these conditions. Failure to abide by these conditions may constitute a violation of District rules and result in District enforcement action.

Betsy Soto
Signature of the OWNER of the property on which the development will occur.

10/18/19
Date

Form 40B-4.3020, effective August 1, 2013.
Incorporated by reference in 40B-4.3020, Florida Administrative Code.
Water for Nature, Water for People

2018 Tax Roll Year
updated: 8/14/2019

Parcel: << **21-7S-17-10045-000** >>

Owner & Property Info

Result: 2 of 13

Owner	**SOTO BETSY & ROLANDO** 23676 S US HWY 441 HIGH SPRINGS, FL 32643		
Site	23676 S US HIGHWAY 441 , HIGH SPRINGS		
Description*	BEG 50 FT W OF SE COR OF SE1/4 RUN N ALONG US-441 315 FT, W 280 FT, S 315 FT, E 280 FT TO POB. PROB #98-41-CP ORB 854-2496 THRU 2507, 856-1216, 860-432, 950-957, 950-958, JTWRS 952-599, NEED CORR DEED FOR ORB 975-1869, 999-1076 THRU 1082, WD 1066-1367.		
Area	2.02 AC	S/T/R	21-7S-17
Use Code**	SINGLE FAM (000100)	Tax District	3

*The Description above is not to be used as the Legal Description for this parcel in any legal transaction.
**The Use Code is a FL Dept. of Revenue (DOR) code and is not maintained by the Property Appraiser's office. Please contact your city or county Planning & Zoning office for specific zoning information.

Aerial Viewer Pictometery Google Maps

Property & Assessment Values

2018 Certified Values		2019 Working Values	
Mkt Land (1)	$17,624	Mkt Land (1)	$17,624
Ag Land (0)	$0	Ag Land (0)	$0
Building (1)	$31,863	Building (1)	$37,714
XFOB (1)	$200	XFOB (1)	$200
Just	$49,687	Just	$55,538
Class	$0	Class	$0
Appraised	$49,687	Appraised	$55,538
SOH Cap [?]	$28,050	SOH Cap [?]	$29,943
Assessed	$25,118	Assessed	$25,595
Exempt	HX H3 $25,000	Exempt	HX H3 $25,000
Total Taxable	county:$118 city:$118 other:$118 school:$118	Total Taxable	county:$595 city:$595 other:$595 school:$595

Sales History

Sale Date	Sale Price	Book/Page	Deed	V/I	Quality (Codes)	RCode
11/28/2005	$120,000	1066/1367	WD	I	Q	
11/4/2003	$24,800	999/1082	WD	I	Q	
3/29/2002	$100	952/0599	PR	V	U	01
3/29/2002	$100	950/0957	QC	I	U	01
1/14/2002	$100	950/0958	QC	I	U	01
5/4/1998	$0	860/0432	PR	I	U	01

Building Characteristics

Bldg Sketch	Bldg Item	Bldg Desc*	Year Blt	Base SF	Actual SF	Bldg Value
Sketch	1	SINGLE FAM (000100)	1937	1236	1236	$37,714

*Bldg Desc determinations are used by the Property Appraisers office solely for the purpose of determining a property's Just Value for ad valorem tax purposes and should not be used for any other purpose.

Extra Features & Out Buildings (Codes)

Code	Desc	Year Blt	Value	Units	Dims	Condition (% Good)
0294	SHED WOOD/	1993	$200.00	1.000	0 x 0 x 0	(000.00)

Land Breakdown

Land Code	Desc	Units	Adjustments	Eff Rate	Land Value
000100	SFR (MKT)	2.020 AC	1.00/1.00 1.00/1.00	$8,725	$17,624

Search Result: 2 of 13

Rec 10.00
DS 840.00

RETURN TO
U. S. Title
642 N.E. Santa Fe Blvd.
High Springs, FL 32643
USH - 3379

Inst:2005029581 Date:11/30/2005 Time:14:10
Doc Stamp-Deed : 840.00
DC,P.DeWitt Cason,Columbia County B:1066 P:1367

[Space Above This Line for Recording Data]

Parcel I.D. No.: 21-7S-[redacted]HX

WARRANTY DEED

This Indenture made this **28th** day of **November**, **RON PRESTON, JOINED BY HIS WIFE, CINDY PRESTON** BETWEEN **RON PRESTON, A MARRIED MAN**, GRANTOR*, whose post office address is 23676 S HWY 441, HIGH SPRINGS, FL 32643 and **BETSY SOTO and ROLANDO SOTO, HUSBAND AND WIFE**, GRANTEE*, whose post office address is 14600 SW 296 STREET, HOMESTEAD, FL 33033.

WITNESSETH, That said Grantor, for and in consideration of the sum of TEN AND 00/100'S ($10.00) Dollars and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the grantee and grantee's heirs forever the following described land located in the County of COLUMBIA, State of Florida, to-wit:

Beginning at the SE corner of the SE 1/4 of Section 21, Township 7 South, Range 17 East, and running North along State Road #2 (also known as U.S.41) 315 feet; thence West 280 feet; thence South 315 feet; thence East 280 feet to the Point of Beginning.

Also described as follows: Beginning 50 feet West of the SE corner of the SE 1/4 of Section 21, Township 7 South, Range 17 East, and running North along State Road #2 (also known as U.S. 41) 315 feet; thence West 280 feet; thence South 315 feet; thence East 280 feet to the Point of Beginning.

SUBJECT TO covenants, restrictions and easements of record, if any; however, this reference thereto shall not operate to reimpose same.

and the grantor hereby covenants with said grantee that the grantor is lawfully seized of said land in fee simple; that the grantor has good right and lawful authority to sell and convey said land; that the grantor hereby fully warrants the title to said land, and will defend the same against the lawful claims of all persons whomsoever; and that said land is free of all encumbrances, except taxes accruing subsequent to December 31, 2004.

*Singular and plural are interchangeable as context requires.

IN WITNESS WHEREOF, Grantor has hereunto set grantor's hand and seal this day and year first above written.

WITNESSES

Typed Name: Jannette S. Boyd

Typed Name: CAROL GRACH

RON PRESTON

CINDY PRESTON

COUNTY OF ALACHUA
STATE OF FLORIDA
THE FOREGOING INSTRUMENT was acknowledged before me on **November 28th, 2005 by RON PRESTON and CINDY PRESTON,** who is/are personally known to me or has produced his/her Driver's License as identification.

[Seal]

Jannette S. Boyd
MY COMMISSION # DD230332 EXPIRES
August 7, 2007
BONDED THRU TROY FAIN INSURANCE, INC.

NOTARY PUBLIC, STATE OF _____ AT LARGE
Name:
COMMISSION EXPIRATION:

THIS INSTRUMENT WAS PREPARED BY: JANNETTE S. BOYD, an employee of U.S. TITLE, 642 N.E. SANTA FE BLVD., HIGH SPRINGS, FLORIDA 32643, as a necessary incident to fulfill the requirements of a Title Insurance Binder issued by it. USH-3379.

Columbia County Property Appraiser

Jeff Hampton | Lake City, Florida | 386-758-1083

Owner & Property Info

Parcel ID: **21-7S-17-10045-000 HX H3**

Name	SOTO BETSY & ROLANDO
Site Addr	23676 S US HIGHWAY 441 , HIGH SPRINGS
Mailing	23676 S US HWY 441 HIGH SPRINGS, FL 32643
Description	BEG 50 FT W OF SE COR OF SE1/4 RUN N ALONG US-441 315 FT, W 280 FT, S 315 FT, E 280 FT

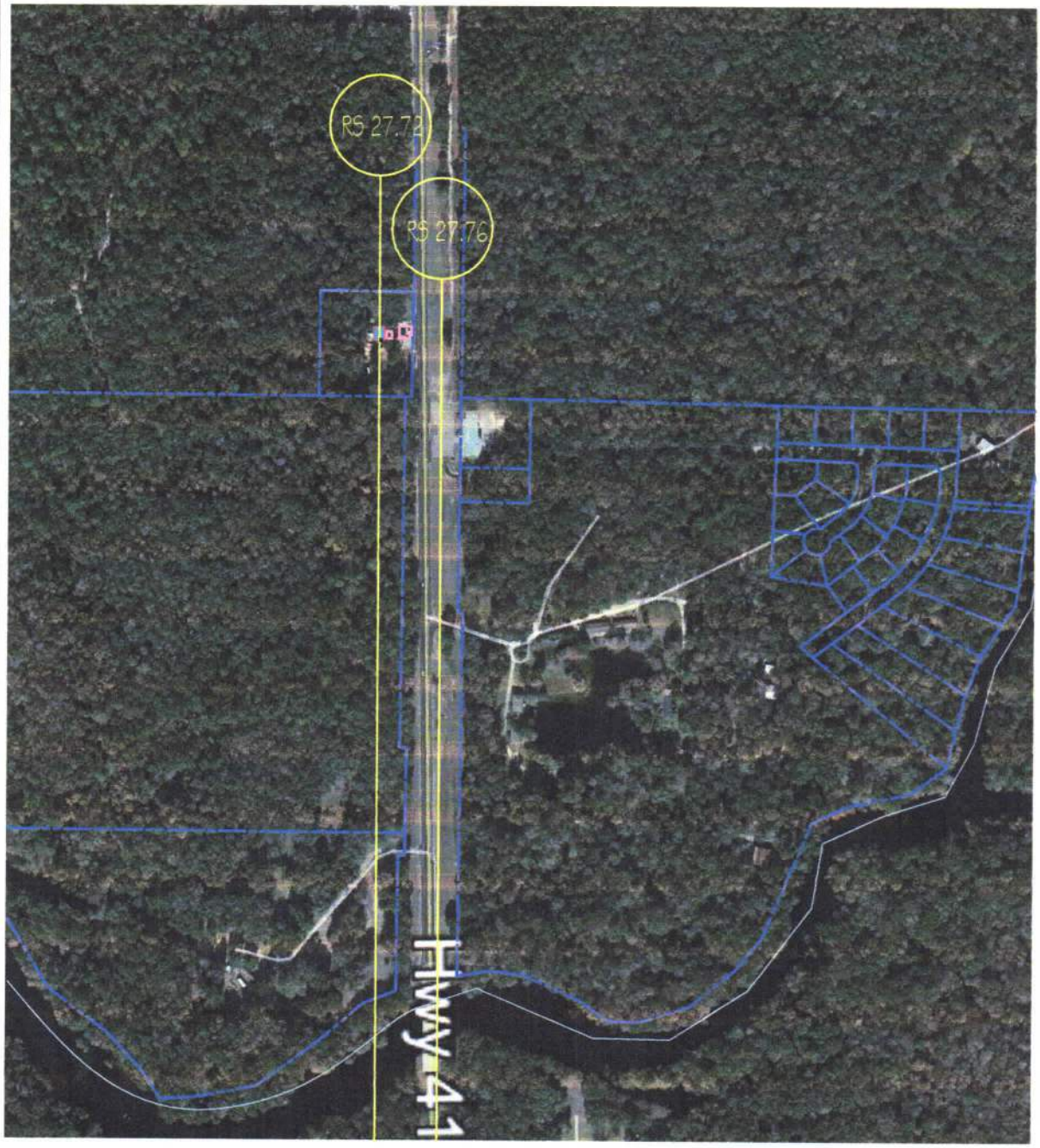
	Bldg Item	Bldg Desc	Year Blt	Base S.F.	Actual S.F.	Bldg Value
Show Sub-Area Codes	1	SINGLE FAM (000100)	1937	1236	1236	$37,714.00

Show All Buildings

LOCATION MAP

LOCATION MAP

23676 S US HWY 441
HIGH SPRINGS, FL



CAROL CHADWICK, P.E.
Civil Engineer
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cepeswyo@gmail.com
www.carolchadwickpe.com
FLORIDA ♦ WYOMING
OREGON ♦ CALIFORNIA ♦ N.C.E.E.S.

CAROL J. CHADWICK LICENSE No. 82560 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE	REVISION DESCRIPTION

PREPARED FOR
BETSY ♦ ROLANDO SOTO
23676 S US HWY 441
HIGH SPRINGS, FL
786.942.9190

SOTO RESIDENCE

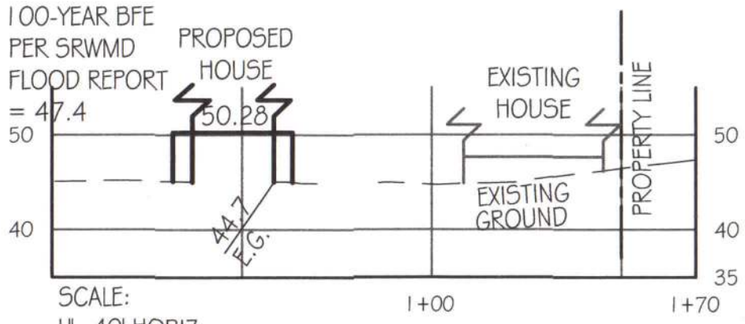
23676 S US HWY 441
HIGH SPRINGS, FL

CAROL J. CHADWICK LICENSE No. 82560 STATE OF FLORIDA PROFESSIONAL ENGINEER
10/19/19

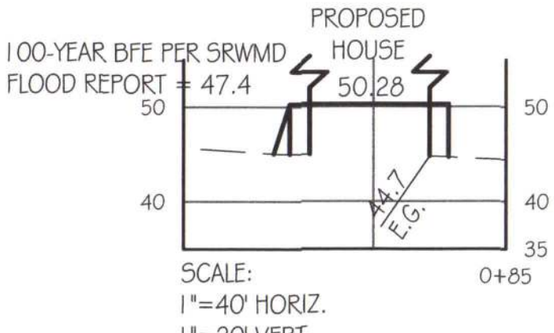
0 250 500
SCALE 1"=500'

PROJECT NO.	DATE	REVISION DATE	SHEET	SHEETS
FLI9074	OCT. 19, 2019		1 OF	1

SITE PLAN & CROSS-SECTION



SECTION A-A'



SECTION B-B'

CAROL J. CHADWICK
LICENSE
No. 82560
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
10/9/19

CAROL CHADWICK, P.E.
Civil Engineer
3204 SW Fallon Glen
Lake City, FL 32025
307.685.1271
ccpewyo@gmail.com
www.carolchadwickpe.com
FLORIDA • WYOMING
OREGON • CALIFORNIA • N.C.E.E.S.

CAROL J. CHADWICK
LICENSE
No. 82560
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
10/9/19

REVISION DESCRIPTION

DATE

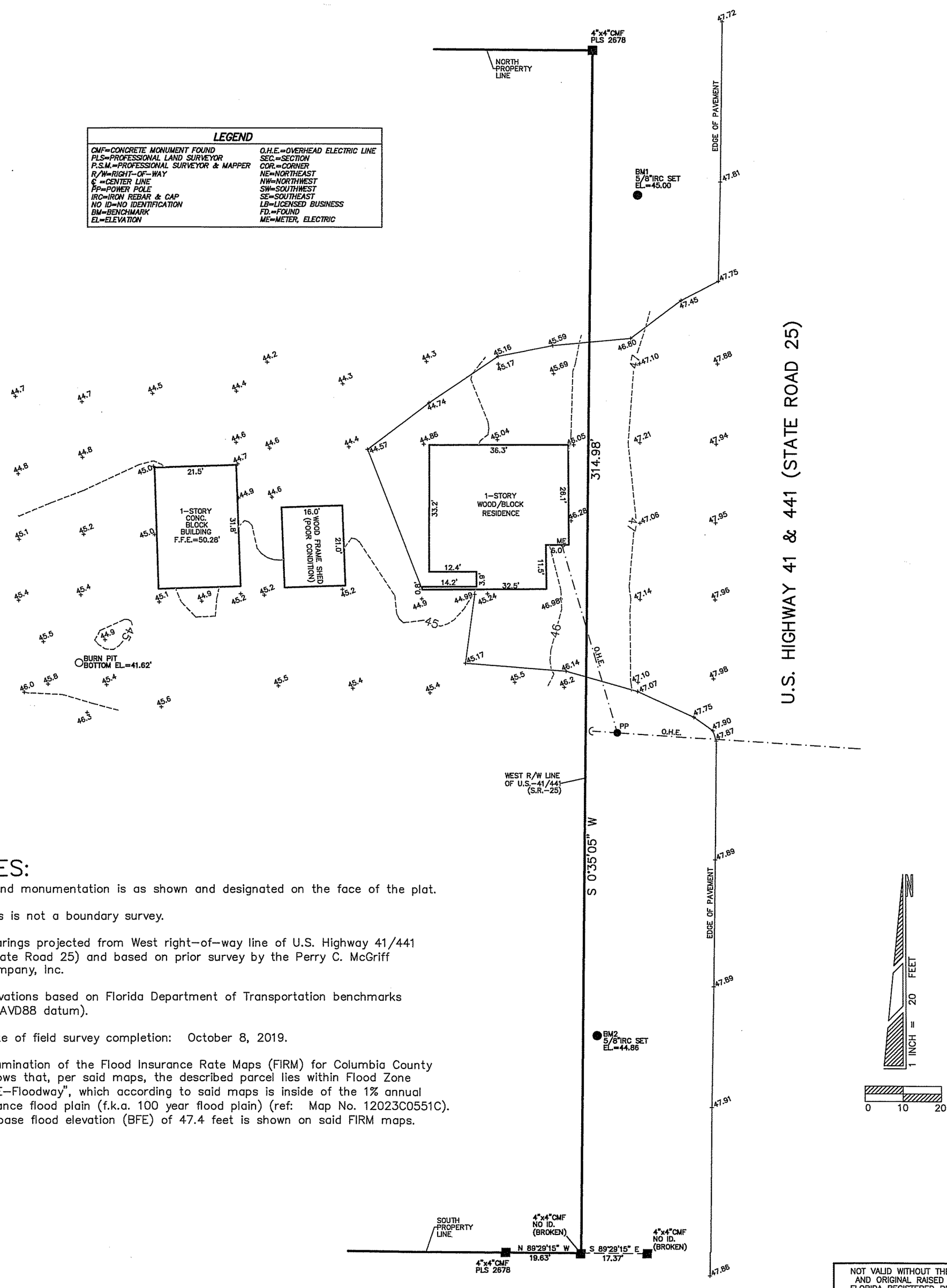
PREPARED FOR
BETSY & ROLANDO SOTO
23676 S US HWY 441
HIGH SPRINGS, FL
786.942.9190

SOTO RESIDENCE
SITE PLAN
23676 S US HWY 441
HIGH SPRINGS, FL

PROJECT NO. FL19074
DATE OCT. 19, 2019
REVISION DATE
SHEET 1 OF 1
SHEETS

SURVEY BY DONALD F. LEE AND ASSOCIATES

LEGEND	
CMF=CONCRETE MONUMENT FOUND	O.H.E.=OVERHEAD ELECTRIC LINE
PLS=PROFESSIONAL LAND SURVEYOR	SEC.=SECTION
P.S.M.=PROFESSIONAL SURVEYOR & MAPPER	COR.=CORNER
R/W=RIGHT-OF-WAY	NE=NORTHEAST
℄ =CENTER LINE	NW=NORTHWEST
PP=POWER POLE	SW=SOUTHWEST
IRC=IRON REBAR & CAP	SE=SOUTHEAST
NO ID=NO IDENTIFICATION	LB=LICENSED BUSINESS
BM=BENCHMARK	FD.=FOUND
EL.=ELEVATION	ME=METER, ELECTRIC



NOTES:

1.) Found monumentation is as shown and designated on the face of the plat.

2.) This is not a boundary survey.

3.) Bearings projected from West right-of-way line of U.S. Highway 41/441 (State Road 25) and based on prior survey by the Perry C. McGriff Company, Inc.

4.) Elevations based on Florida Department of Transportation benchmarks (NAVD88 datum).

5.) Date of field survey completion: October 8, 2019.

6.) Examination of the Flood Insurance Rate Maps (FIRM) for Columbia County shows that, per said maps, the described parcel lies within Flood Zone "AE-Floodway", which according to said maps is inside of the 1% annual chance flood plain (f.k.a. 100 year flood plain) (ref: Map No. 12023C0551C). A base flood elevation (BFE) of 47.4 feet is shown on said FIRM maps.

TOPOGRAPHY SURVEY

IN SECTION 21

TOWNSHIP 7 SOUTH, RANGE 17 EAST

COLUMBIA COUNTY, FLORIDA

NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER

Timothy A. Delbene, P.S.M.
Florida Reg. No. 5594
DATE: 10/18/2019

CAD FILE: 7290.DWG
REVISED: 10/18/2019 Flood note revised.

Donald F. Lee and Associates, Inc.
SURVEYORS - ENGINEERS
140 Northwest Ridgewood Avenue, Lake City, Florida 32055
Phone: (386) 755-6166 FAX: (386) 755-6167
Certificate of Authorization # LB 7042

Date: 10/10/2019	SETH SOTO	Scale: 1"=20'
Drafting: A V G		Field Book: ----
Computations: A V G		Work Order: 19-7290
Checked: T A D		File: A-64-45

SRWMD FLOOD MAP

Suwannee River Water Management District
Effective Flood Information Report

Effective Flood Zones described on Page 2

- SFHA - AE w/Floodway
- SFHA - Zones AE, AH, AO
- SFHA - Zone VE
- SFHA - Zone A
- 0.2 % (shaded X)
- Wetlands
- FIRM Panel
- State Lands
- Counties
- SRWMD
- Parcels
- Depressions
- BFE
- Cross Sections

LOCATION

Date: 10-17-2019

Parcel: 21-7S-17-10045-000

County: COLUMBIA

STR: S028 T07 R17

Columbia Flood Hazard Areas Status 2/4/2009

FLOOD INFORMATION

Special Flood Hazard Area? (SFHA): Yes

Flood Zone(s): AE FW

Floodway: Yes

1% Annual Chance Flood Elev (BFE): 47.4 (feet)

10% Annual Chance Flood Elev: 41.4 (feet)

50% Annual Chance Flood Elev: 35.3 (feet)

Note: Elevations are based on NAVD88

FIRM Panel(s): 12023C0551C

The Federal Emergency Management Agency (FEMA) maintains information about map features, such as street locations and names, in or near designated flood hazard areas. The information herein represents the best available data as of the effective date shown. The applicable Flood Insurance Study and a Digital Flood Insurance Rate Map is available online (http://www.srwmdfloodreport.com). To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to also consult the FEMA Map Service Center at 1-800-358-9616 (http://www.msc.fema.gov) for information on available products associated with this FIRM panel. Available products from the Map Service Center may include previously issued Letters of Map Change.

Requests to revise flood information in or near designated flood hazard areas may be provided to FEMA during the community review period on preliminary maps, or through the Letter of Map Change process for effective maps.

Base Flood Elevation (BFE)

The elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR, AO, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

A

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.

AE, A1-A30

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. In most instances, base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

AH

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Usually areas of ponding with flood depths of 1 to 3 feet. Base Flood Elevations are determined.

AO

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Usually areas of sheet flow on sloping terrain with flood depths of 1 to 3 feet. Base Flood Elevations are determined.

Supplemental Information:

10%-chance flood elevations (10-year flood-risk elevations) and 50%-chance flood elevations (2-year flood-risk elevations), are calculated during detailed flooding studies but are not shown on FEMA Digital Flood Insurance Rate Maps (FIRMs). They have been provided as supplemental information in the Flood Information section of this report.

AE FW (FLOODWAYS)

The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood (1% annual chance flood event). The floodway must be kept open so that flood water can proceed downstream and not be obstructed or diverted onto other properties.

Please note, if you develop within the regulatory floodway, you will need to contact your Local Government and the Suwannee River Water Management District prior to commencing with the activity. Please contact the District at 800.226.1066.

VE

Areas with a 1% annual chance of flooding over the life of a 30-year mortgage with additional hazards due to storm-induced velocity wave action. Base Flood Elevations (BFEs) derived from detailed analyses.

X 0.2 PCT (X Shaded, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD)

Same as Zone X; however, detailed studies have been performed, and the area has been determined to be within the 0.2 percent annual chance floodplain (also known as the 500-year flood zone). Insurance purchase is not required in this zone but is available at a reduced rate and is recommended.

X

All areas outside the 1-percent annual chance floodplain are Zone X. This includes areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.

LINKS

FEMA:

http://www.fema.gov

SRWMD:

http://www.srwmd.state.fl.us

CONTACT

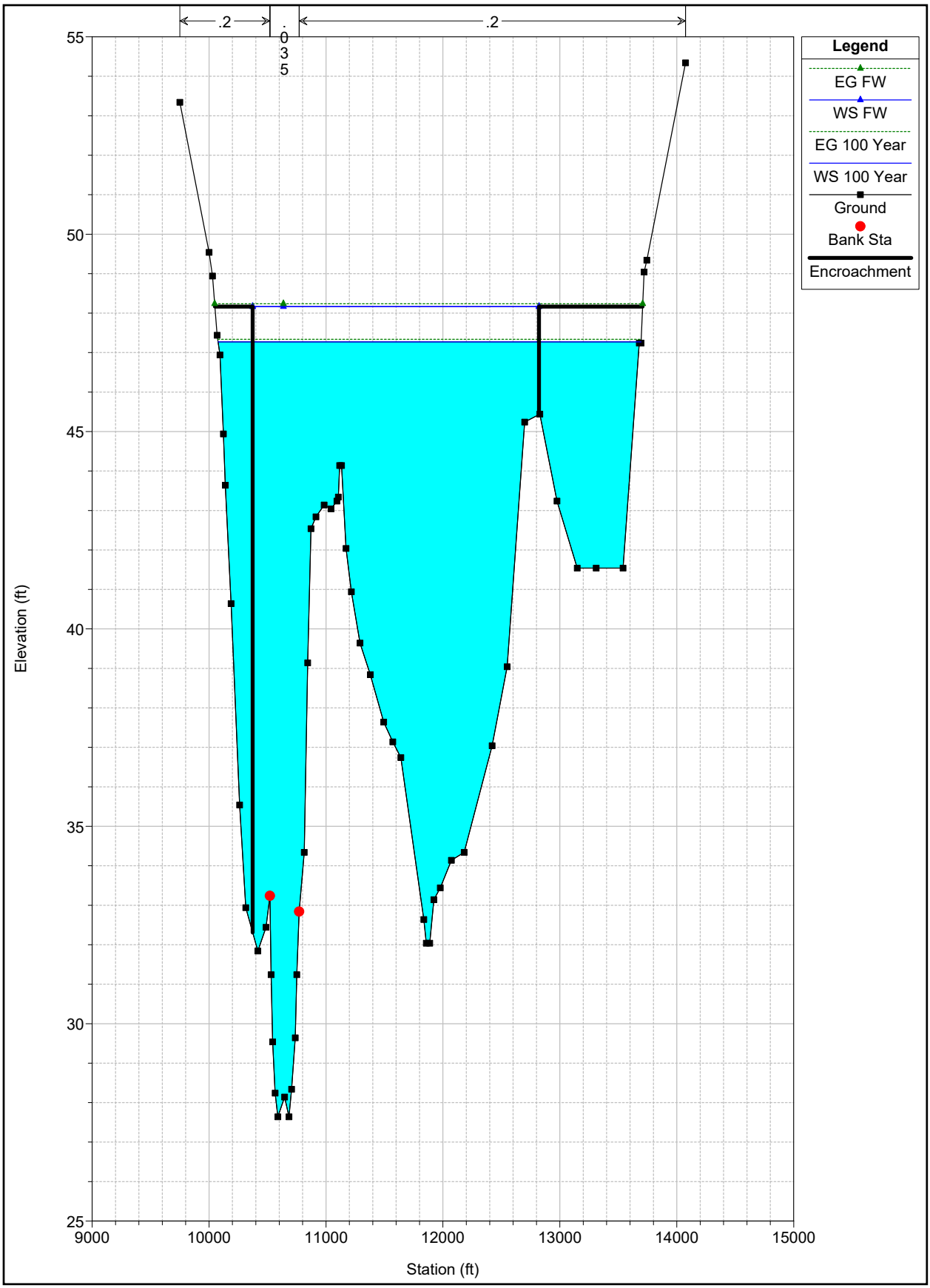
SRWMD
9225 County Road 49
Live Oak, FL 32060

(386) 362-1001

Toll Free:
(800) 226-1066

PRE-DEVELOPMENT ANALYSIS RESULTS & CROSS-SECTIONS

PRE 27.68


.2
.035
.2
Legend
EG FW
WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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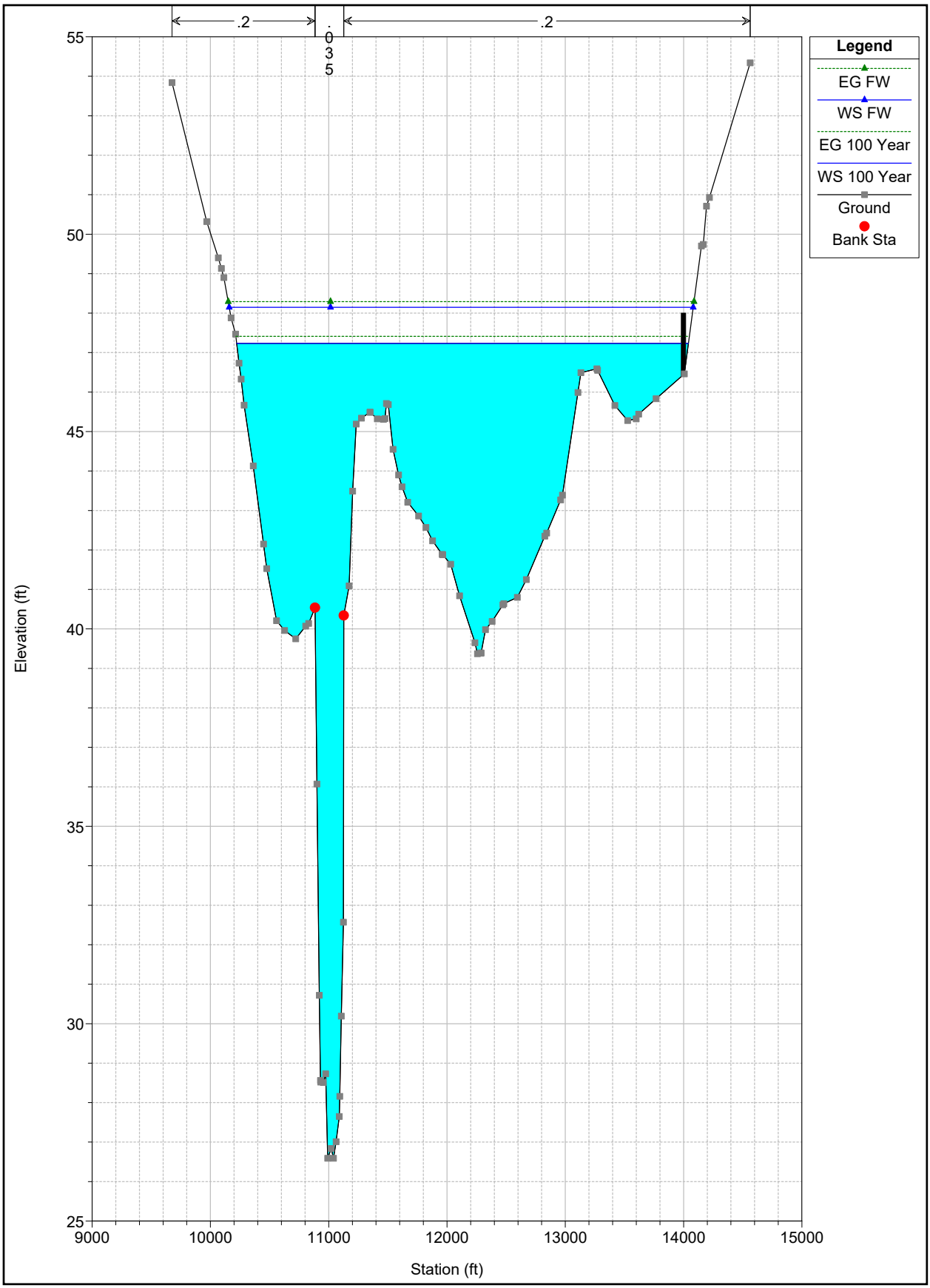
PRE 27.72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WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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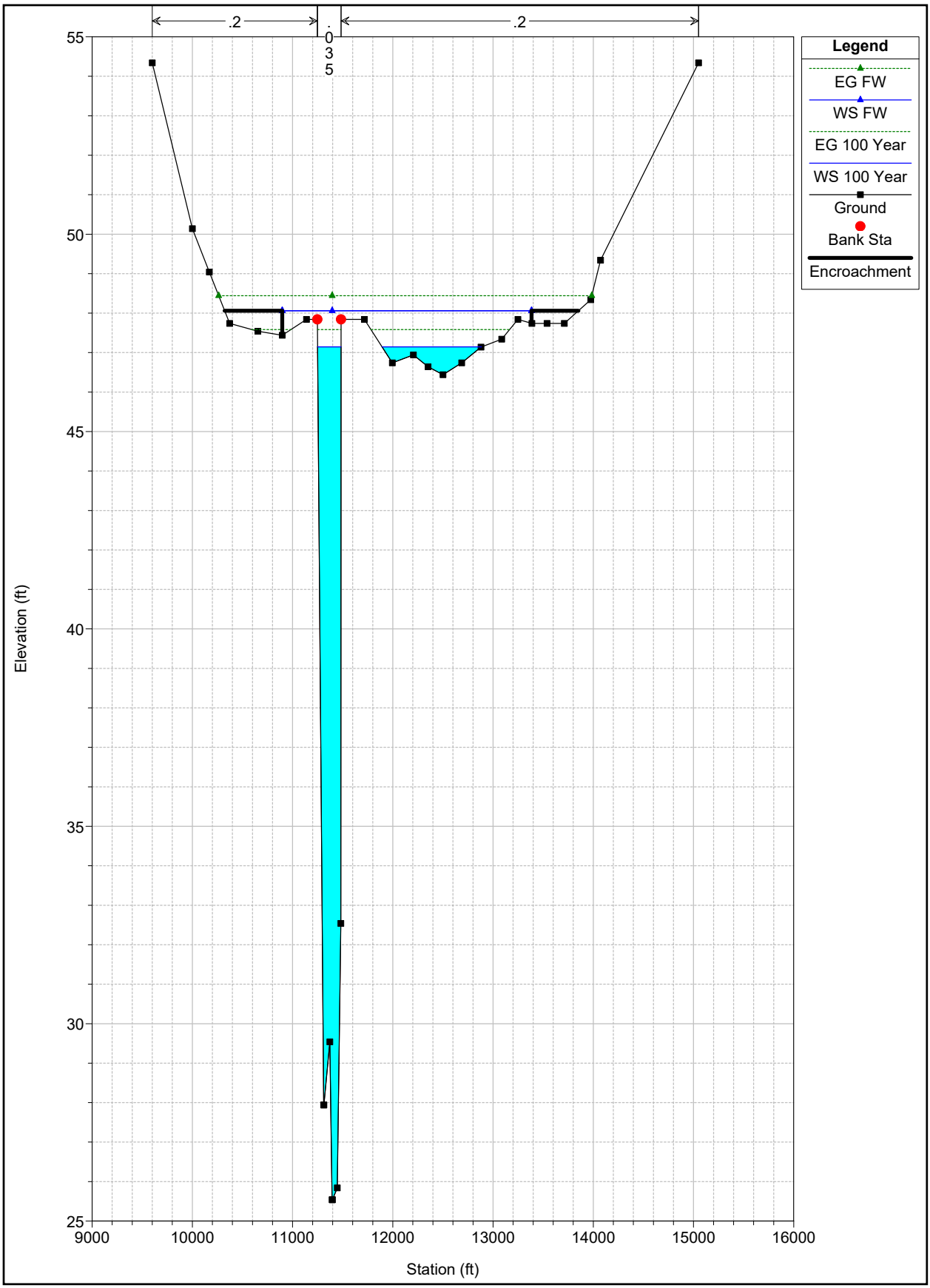
PRE 27.76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Legend
EG FW
WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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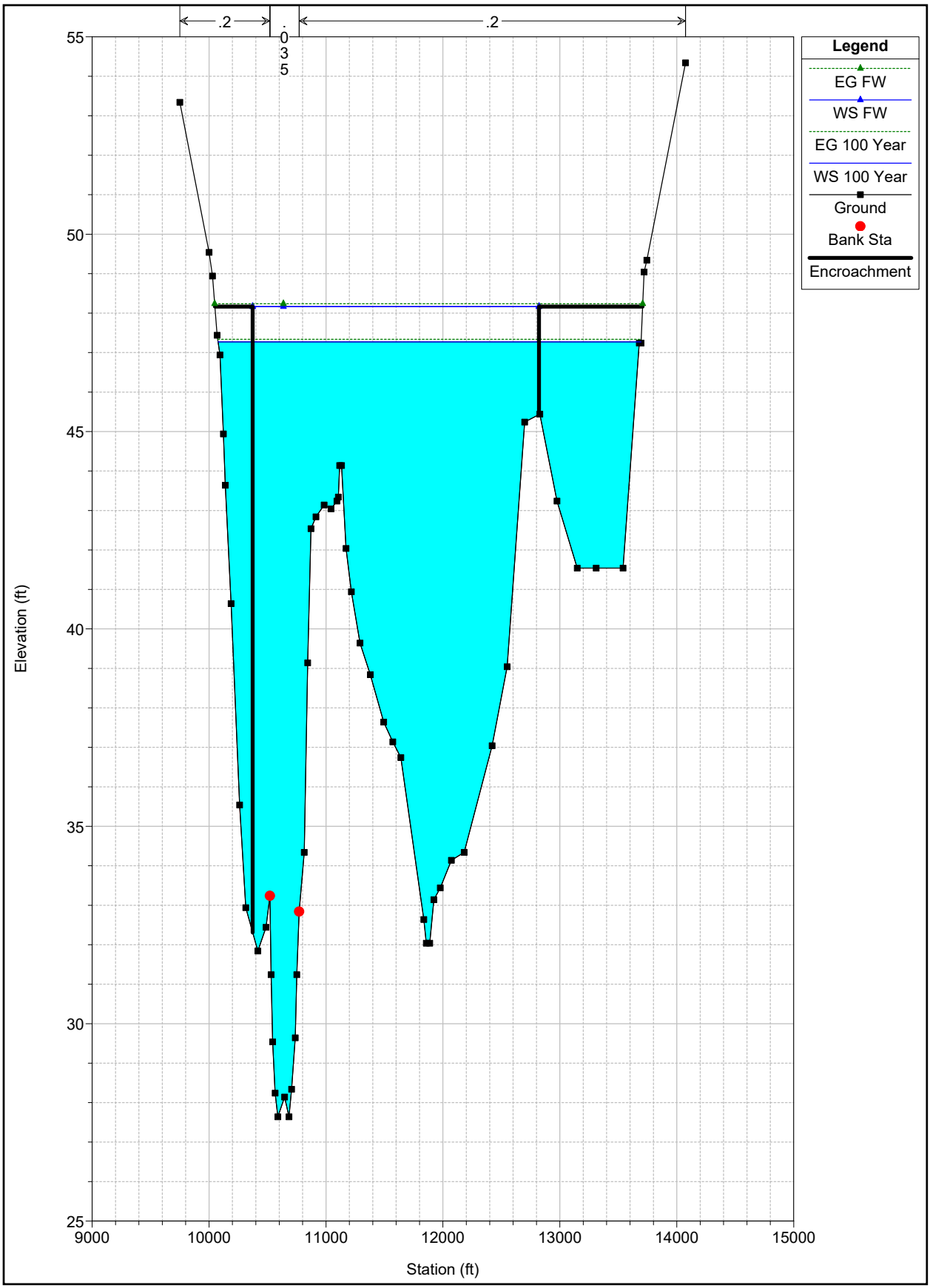
POST-DEVELOPMENT ANALYSIS RESULTS & CROSS-SECTIONS

POST 27.68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Legend
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WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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13000
14000
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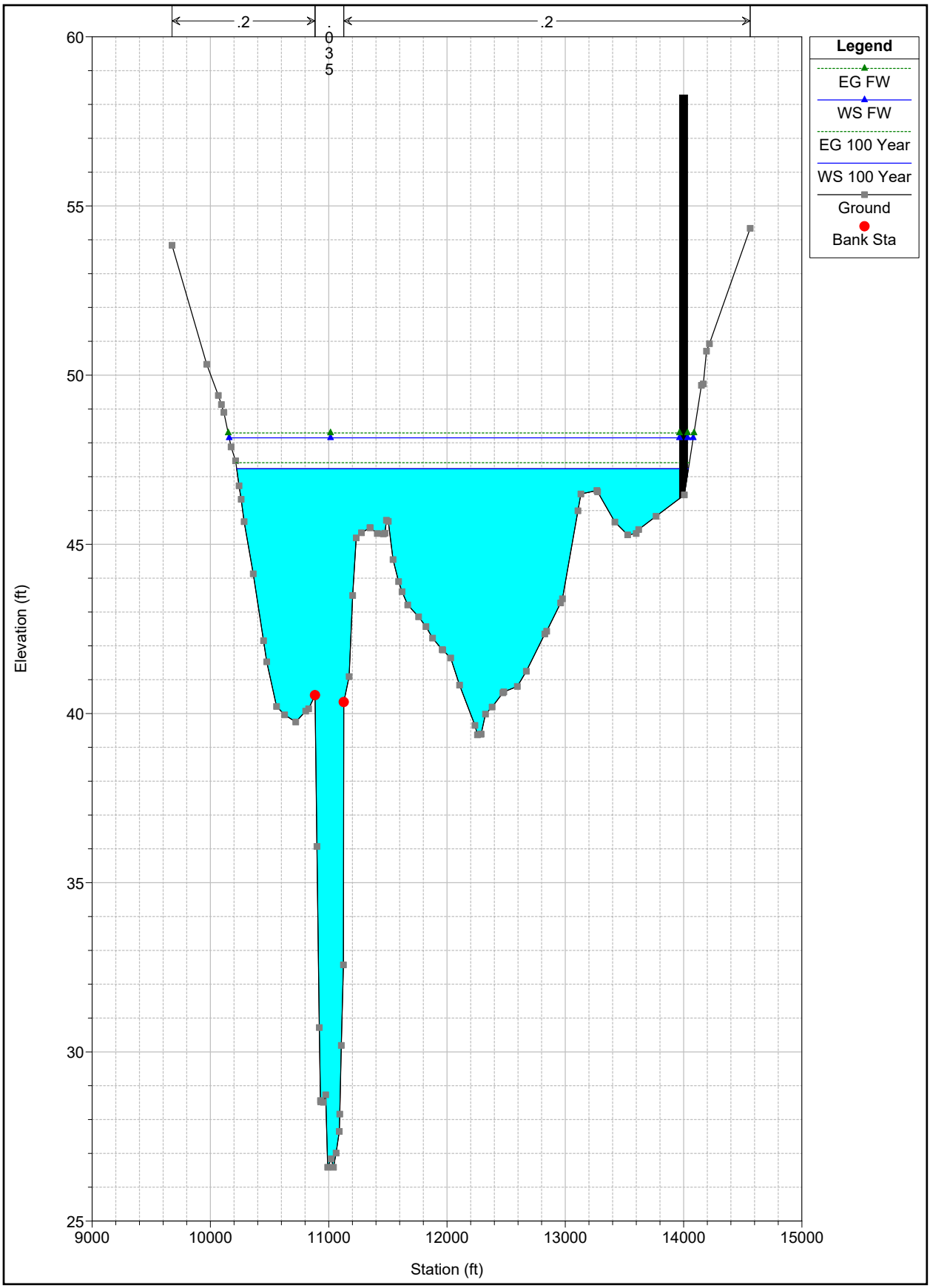
POST 27.72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Legend
EG FW
WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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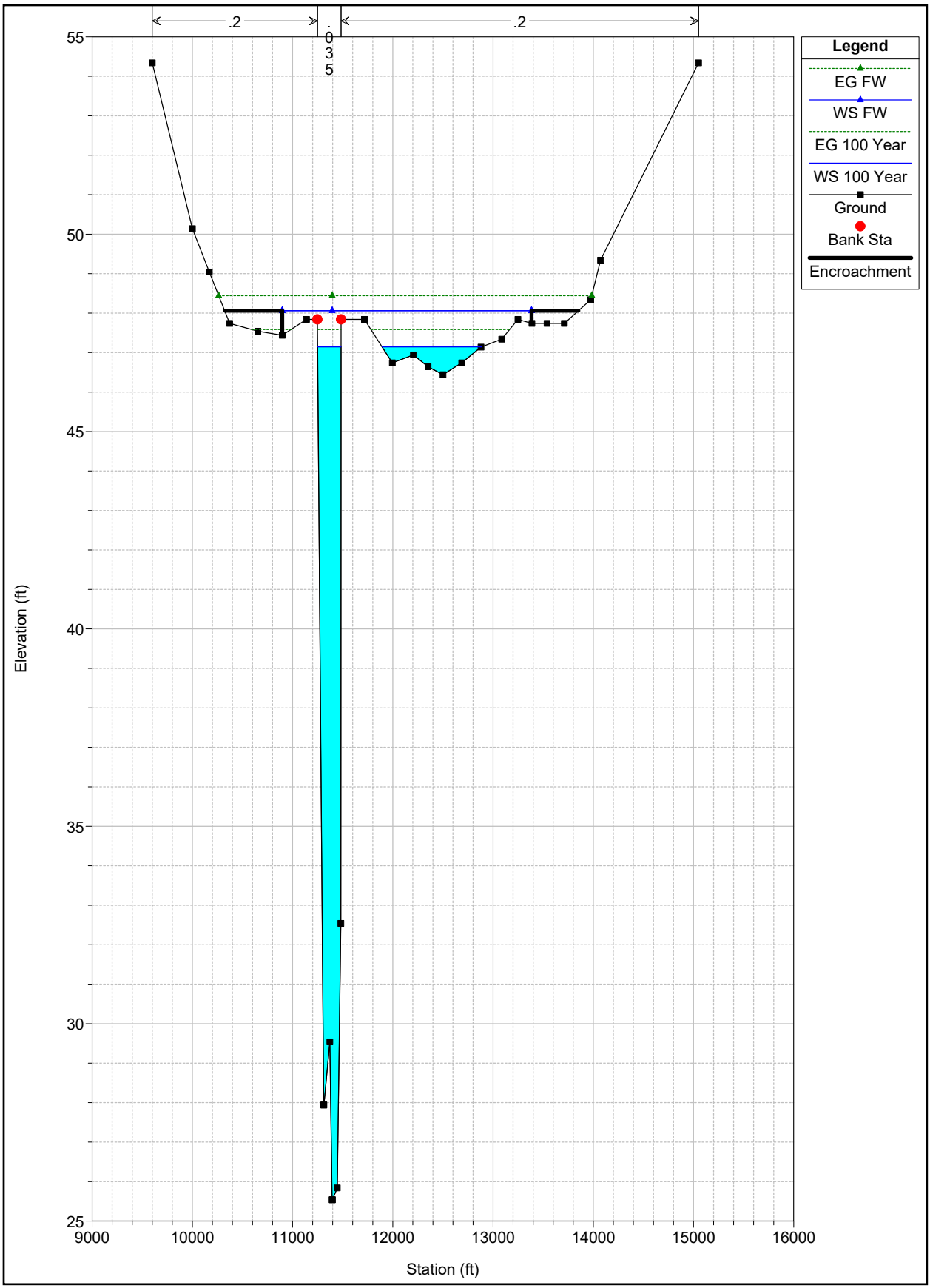
POST 27.76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WS FW
EG 100 Year
WS 100 Year
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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16000

HEC-RAS ANALYSIS & RESULTS

PRE-DEVELOPMENT

HEC-RAS HEC-RAS 5.0.5 June 2018
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Suwannee River and SantaFe River
Project File : Suwanee.prj
Run Date and Time: 10/19/2019 6:10:12 PM

Project in English units

Project Description:
Upper Suwannee River Floodplain Model 10, 50, 100, 500
Taylor
Engineering
Adapted from HEC-2 Provided by SRWMD

Model was truncated to
only include: Dixie, Gilchrist and LaFayette Counties. Converted to HEC-RAS
3.1.3, with some updates to structures and adjacent cross sections August 2005
by Dewberry and Davis LLC - Atlanta Office

The flodoway did not require any
adjustments to width following updated survey data. Floodway stations were
moved to account for new stationing on some sections.

PLAN DATA

Plan Title: Floodway Run

Plan File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\PRE-DEVELOPMENT\Suwanee.p02

Geometry Title: Updated 2005
Geometry File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\PRE-DEVELOPMENT\Suwanee.g01

Flow Title : Floodway
Flow File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\PRE-DEVELOPMENT\Suwanee.f02

Plan Summary Information:

Number of:	Cross Sections	= 298	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 27	Lateral Structures	=	0

Computational Information

Water surface calculation tolerance	= 0.003
Critical depth calculation tolerance	= 0.003
Maximum number of iterations	= 20
Maximum difference tolerance	= 0.1
Flow tolerance factor	= 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: Between every coordinate point (HEC2 Style)
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = Santa Fe Reach = Main

RS	Profile	Method	Value1	Value2
79.85	FW	1	11748	13914
79.1	FW	1	11751	14501
78.16	FW	1	11175	14425
76.67	FW	1	11077	12902
75.55	FW	1	13117	13450
75.15	FW	1	13519	13841
75	FW	1	13519	13691
74.98	FW	1	13730	13798
74.97	FW	1	13730	13798
74.92	FW	1	12760	13058
74.35	FW	1	13535	13911
74.3	FW	1	13778	14066
74.28	FW	1	12900	13101
74.27	FW	1	12900	13101
74.23	FW	1	13778	14066
74.04	FW	1	13578	14216
73.94	FW	1	13528	14446

73.36	FW	1	11527	13077
73.32	FW	1	11906.2	13864.7
73.31	FW	1	11092.3	11363
73.3	FW	1	10888.7	12618.1
73.27	FW	1	10888.7	12618.1
72.59	FW	1	10388	11224
71.46	FW	1	11917	12761
70.18	FW	1	10513.9	11110.1
69.45	FW	1	10622.3	10950.5
69.38	FW	1	11550	11652
69.37	FW	1	11550	11652
69.22	FW	1	10831	11293
68.72	FW	1	10736	11214
67.83	FW	1	11957.3	12768.6
67.11	FW	1	10562	11152
65.99	FW	1	10799	11834.2
65.97	FW	1	10996.4	11617
65.96	FW	1	11085.6	11617
65.89	FW	1	10903.2	11798.1
65.86	FW	1	10910.1	11796.1
64.57	FW	1	10976.2	11472.7
63.6	FW	1	10143	11830
62.24	FW	1	10171	12971
61.02	FW	1	10591	13058
59.68	FW	1	11827.6	12959.4
59.66	FW	1	10865	11065
59.65	FW	1	10865	11065
59.57	FW	1	11834.8	12950.8
59.26	FW	1	11560	12380
58.81	FW	1	11510	12035
58.79	FW	1	10315	10479
58.78	FW	1	10315	10476
58.7	FW	1	11510	12335
58.15	FW	1	11398	12448
57.21	FW	1	10927	11727
56.22	FW	1	11067	11967
55.99	FW	1	11067	11967
55.96	FW	1	12460	13610
55.95	FW	1	12460	13610
55.83	FW	1	10813	12613
54.27	FW	1	11100	12385
53.44	FW	1	10333	11733
51.87	FW	1	11150	13550
49.61	FW	1	12785	14322
49.48	FW	1	13817	15609
49.46	FW	1	13901	15349
49.45	FW	1	13901	15349
49.38	FW	1	13817	15609
49.31	FW	1	13817	15609
49.29	FW	1	14693	16393
49.28	FW	1	14693	16393
49.19	FW	1	14839.3	16588.4
48.04	FW	1	16259	17693.5
46.59	FW	1	12394.1	14173.5

45.48	FW	1	10484.9	12085.4
44.02	FW	1	11805	13551
42.54	FW	1	10083	14281
41.67	FW	1	11164	14130
41.63	FW	1	11164	14130
41.62	FW	1	11321	14621
41.61	FW	1	11321	14621
41.56	FW	1	10640	14637
40.91	FW	1	10572	12069
39.81	FW	1	11200	12953
39.02	FW	1	10108	10730
37.98	FW	1	10982	13472
37.25	FW	1	10533	13666
37.19	FW	1	10533	13666
37.17	FW	1	10550	13865
37.16	FW	1	10550	13865
37.07	FW	1	10406	13994
35.58	FW	1	10782	16371
35.57	FW	1	10782	16371
33.85	FW	1	10981	15203
33.09	FW	1	11012	13334
32.18	FW	1	11413	13528
30.42	FW	1	10675	17380
28.94	FW	1	10136	14876
27.82	FW	1	10997	13555
27.79	FW	1	10997	13555
27.77	FW	1	10897	13384
27.76	FW	1	10897	13384
27.68	FW	1	10373	12821
26.52	FW	1	9800	12900
25.19	FW	1	11176	11726
24.54	FW	1	10906	11301
24.52	FW	1	10906	11301
24.51	FW	1	11125	11595
24.5	FW	1	11125	11595
24.49	FW	1	10906	11301
24.48	FW	1	11678	12222
24.47	FW	1	11678	12222
24.44	FW	1	10942	11309
24.15	FW	1	10471	11010
23.82	FW	1	10508	10999
23.14	FW	1	10720	11461
22.24	FW	1	10634	11158
21.59	FW	1	12184	12725
20.44	FW	1	10537	11905
19.62	FW	1	10940	12164
18.49	FW	1	10716	12303
17.78	FW	1	11513	13128
17.28	FW	1	10213	11698
16.53	FW	1	11939	13607
15.75	FW	1	13828	15755
15.72	FW	1	13974.5	15901.5
15.7	FW	1	13800.25	15570.25
15.66	FW	1	14195	15938

15.08	FW	1	10868	12511
14.08	FW	1	11417	13300
13.03	FW	1	12170	14002
11.3	FW	1	11380	12995
10.06	FW	1	10391	11608
8.43	FW	1	12043	14142
7.64	FW	1	11909	13603
6.46	FW	1	13592	15193
4.73	FW	1	10932	12384
3.6	FW	1	10109	11719
2.88	FW	1	10951	12711
2.5	FW	1	11586	13299
2.46	FW	1	10705	12409
2.42	FW	110471.6612121.66		
2.39	FW	1	11054	12568
1.61	FW	1	10219	11589

FLOW DATA

Flow Title: Floodway
Flow File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\PRE-DEVELOPMENT\Suwanee.f02

Flow Data (cfs)

River	Reach	RS	100 Year FW
Santa Fe	Main	79.85	374 374
Santa Fe	Main	73.36	2965 2965
Santa Fe	Main	67.11	4665 4665
Santa Fe	Main	57.21	8767 8767
Santa Fe	Main	49.61	25162 25162
Santa Fe	Main	44.02	23767 23767
Santa Fe	Main	39.81	32800 32800
Santa Fe	Main	37.25	32569 32569
Santa Fe	Main	33.85	24427 24427
Santa Fe	Main	28.94	23206 23206
Santa Fe	Main	27.79	20910 20910
Santa Fe	Main	25.19	19587 19587

Santa Fe	Main	19.62	16717	16717
Santa Fe	Main	15.66	16359	16359
Suwannee	WtoSF	127.51	76500	76500
Suwannee	WtoSF	124.93	71400	71400
Suwannee	WtoSF	112.92	69500	69500
Suwannee	WtoSF	106.69	67800	67800
Suwannee	WtoSF	101.82	66300	66300
Suwannee	WtoSF	98.23	64900	64900
Suwannee	WtoSF	91.48	63900	63900
Suwannee	WtoSF	86.73	63250	63250
Suwannee	WtoSF	82.16	62950	62950
Suwannee	WtoSF	76.12	62100	62100
Suwannee	WtoSF	70.98	62100	62100
Suwannee	BelowSF	65.66	67300	67300

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Suwannee	BelowSF	100 Year		Known WS = 1.87
Suwannee	BelowSF	FW		Known WS = 1.87

Observed Water Surface Marks

River	Reach	RS	100 Year	FW
RIVER-1	Reach-1	97	58	
RIVER-1	Reach-1	96	58	
RIVER-1	Reach-1	95	57	
RIVER-1	Reach-1	94	56.9	
RIVER-1	Reach-1	93	56.9	
RIVER-1	Reach-1	92	56.9	
RIVER-1	Reach-1	91	56.8	
RIVER-1	Reach-1	90	56.8	
RIVER-1	Reach-1	89	56.8	

RIVER-1	Reach-1	88	56.8
RIVER-1	Reach-1	87	56.7
RIVER-1	Reach-1	86	56.6
RIVER-1	Reach-1	85	56.5
RIVER-1	Reach-1	84	56.3
RIVER-1	Reach-1	83	56
RIVER-1	Reach-1	82	55.8
RIVER-1	Reach-1	81	55.2
RIVER-1	Reach-1	80	55
RIVER-1	Reach-1	79	54.7
RIVER-1	Reach-1	78	54.2
RIVER-1	Reach-1	77	54
RIVER-1	Reach-1	76	53.8
RIVER-1	Reach-1	75	53.3
RIVER-1	Reach-1	74	53
RIVER-1	Reach-1	73	52.9
RIVER-1	Reach-1	72	52.5
RIVER-1	Reach-1	71	52.1
RIVER-1	Reach-1	70	52
RIVER-1	Reach-1	69	51.5
RIVER-1	Reach-1	68	51.2
RIVER-1	Reach-1	67	51
RIVER-1	Reach-1	66	51
RIVER-1	Reach-1	65	50.8
RIVER-1	Reach-1	64	50.2
RIVER-1	Reach-1	63	49.9
RIVER-1	Reach-1	62	49.8
RIVER-1	Reach-1	61	49.6
RIVER-1	Reach-1	60	49.6
RIVER-1	Reach-1	59	49.5
RIVER-1	Reach-1	58	48.8
RIVER-1	Reach-1	57	47.8
RIVER-1	Reach-1	56	47.2
RIVER-1	Reach-1	55	47.1
RIVER-1	Reach-1	54	47.1
RIVER-1	Reach-1	53	46.2
RIVER-1	Reach-1	52	45.8
RIVER-1	Reach-1	51	45.3
RIVER-1	Reach-1	50	45
RIVER-1	Reach-1	49	44.2
RIVER-1	Reach-1	48	43.8
RIVER-1	Reach-1	47	43
RIVER-1	Reach-1	46	42.2
RIVER-1	Reach-1	45	42
RIVER-1	Reach-1	44	41.5
RIVER-1	Reach-1	43	41.2
RIVER-1	Reach-1	42	40.8
RIVER-1	Reach-1	41	40.1
RIVER-1	Reach-1	40	39.5
RIVER-1	Reach-1	39	38.9
RIVER-1	Reach-1	38	38.5
RIVER-1	Reach-1	37	38.2
RIVER-1	Reach-1	36	37.8
RIVER-1	Reach-1	35	37.3

RIVER-1	Reach-1	34	37
RIVER-1	Reach-1	33	36.8
RIVER-1	Reach-1	32	36.5
RIVER-1	Reach-1	31	36.2
RIVER-1	Reach-1	30	36
RIVER-1	Reach-1	29	36
RIVER-1	Reach-1	28	35.9
RIVER-1	Reach-1	27	35.7
RIVER-1	Reach-1	26	35.6
RIVER-1	Reach-1	25	35.2
RIVER-1	Reach-1	24	35.1
RIVER-1	Reach-1	23	35.1
RIVER-1	Reach-1	22	35
RIVER-1	Reach-1	21	35
RIVER-1	Reach-1	20	35
RIVER-1	Reach-1	19	34.9
RIVER-1	Reach-1	18	34.8
RIVER-1	Reach-1	17	34.6
RIVER-1	Reach-1	16	34.2
RIVER-1	Reach-1	15	34
RIVER-1	Reach-1	14	33.9
RIVER-1	Reach-1	13	33.4

GEOMETRY DATA

Geometry Title: Updated 2005
Geometry File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\PRE-DEVELOPMENT\Suwanee.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Santa Fe	Main		Santa Fe
Suwannee	WtoSF		Santa Fe
Suwannee	BelowSF	Santa Fe	

JUNCTION INFORMATION

Name: Santa Fe
Description: Sante Fe confluence with Suwannee
Energy computation Method

Length across Junction		Tributary		
River	Reach	River	Reach	Length Angle
Suwannee	WtoSF	to Suwannee	BelowSF	4260

Santa Fe Main to Suwannee BelowSF
10090.8

CROSS SECTION

RIVER: Santa Fe
REACH: Main RS: 27.77

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9575	54.34	10000	50.14	10169	49.04	10372	47.74	10654	47.54
10897	47.44	11139	47.84	11246	47.84	11247	47.84	11310	27.94
11313	27.94	11371	29.54	11394	25.54	11397	25.54	11446	25.84
11481	32.54	11484	47.84	11716	47.84	11995	46.74	12205	46.94
12352	46.64	12500	46.44	12687	46.74	12880	47.14	13086	47.34
13248	47.84	13387	47.74	13539	47.74	13711	47.74	13975	48.34
14072	49.34	15050	54.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9575	.2	11247	.035	11484	.2

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11247	11484	27	27	27	.3 .5

BRIDGE

RIVER: Santa Fe
REACH: Main RS: 27.765

INPUT
Description: Bridge #5
Distance from Upstream XS = 1
Deck/Roadway Width = 25
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
11247	47.84	47.84	11310	47.84	44.94	11313	47.84	44.94
11394	47.84	44.94	11397	47.84	44.94	11484	47.84	47.84

Upstream Bridge Cross Section Data
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9575	54.34	10000	50.14	10169	49.04	10372	47.74	10654	47.54
10897	47.44	11139	47.84	11246	47.84	11247	47.84	11310	27.94
11313	27.94	11371	29.54	11394	25.54	11397	25.54	11446	25.84
11481	32.54	11484	47.84	11716	47.84	11995	46.74	12205	46.94
12352	46.64	12500	46.44	12687	46.74	12880	47.14	13086	47.34
13248	47.84	13387	47.74	13539	47.74	13711	47.74	13975	48.34
14072	49.34	15050	54.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9575	.2	11247	.035	11484	.2

Bank Sta: Left	Right	Coeff Contr.	Expan.
11247	11484	.3	.5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
11247	47.84	47.84	11310	47.84	44.94	11313	47.84	44.94
11394	47.84	44.94	11397	47.84	44.94	11484	47.84	47.84

Downstream Bridge Cross Section Data
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9600	54.34	10000	50.14	10169	49.04	10372	47.74	10654	47.54
10897	47.44	11139	47.84	11246	47.84	11247	47.84	11310	27.94
11313	27.94	11371	29.54	11394	25.54	11397	25.54	11446	25.84
11481	32.54	11484	47.84	11716	47.84	11995	46.74	12205	46.94
12352	46.64	12500	46.44	12687	46.74	12880	47.14	13086	47.34
13248	47.84	13387	47.74	13539	47.74	13711	47.74	13975	48.34
14072	49.34	15050	54.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9600	.2	11247	.035	11484	.2

Bank Sta: Left	Right	Coeff Contr.	Expan.

```
         11247   11484             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  2

Pier Data
Pier Station     Upstream= 11311.5    Downstream= 11311.5
Upstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94
Downstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94

Pier Data
Pier Station     Upstream= 11395.5    Downstream= 11395.5
Upstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94
Downstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Energy

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION


RIVER: Santa Fe
REACH: Main              RS: 27.76
```

```
INPUT
Description:          HWY 441 BRIDGE
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9600   54.34   10000   50.14   10169   49.04   10372   47.74   10654
47.54
   10897   47.44   11139   47.84   11246   47.84   11247   47.84   11310
27.94
   11313   27.94   11371   29.54   11394   25.54   11397   25.54   11446
25.84
   11481   32.54   11484   47.84   11716   47.84   11995   46.74   12205
46.94
   12352   46.64   12500   46.44   12687   46.74   12880   47.14   13086
47.34
   13248   47.84   13387   47.74   13539   47.74   13711   47.74   13975
48.34
   14072   49.34   15050   54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9600      .2   11247    .035   11484      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         11247   11484             162     162     162             .3
.5

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 27.720*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9675   53.84 9968.62   50.3210067.02    49.410092.68   49.1310114.07
48.9
10175.22   47.8810212.86   47.47 10241.7   46.73 10259.9   46.3310284.99
45.67
10361.82   44.13 10448.7   42.15 10476.3   41.53 10559.4   40.2110627.08
39.96
10720.92   39.7510804.72   40.0710830.69   40.1410883.27   40.53   10884
40.54
10899.97   36.0710920.73   30.7210929.86   28.5610932.04   28.5210954.27
28.51
10974.26   28.73   10991   26.5911020.92   26.84   11040   26.5911062.87
27.01
11089.28   27.6511093.69   28.1611106.62   30.1911124.48   32.57 11127.5
40.34
```

```
11172.21   41.0911202.35   43.49 11232.5   45.1911276.17   45.3411348.95
45.49
11350.98   45.4911410.29   45.3211462.27   45.3111475.78   45.3311487.22
45.71
11503.85   45.6811543.36   44.5511591.18    43.911619.73    43.611668.12
43.21
11759.61   42.8611822.01   42.5711878.13   42.2311959.22   41.8911963.61
41.88
12030.96   41.6412106.18   40.8412235.77   39.65 12257.6   39.3712286.31
39.39
12287.75   39.3912325.18   39.9812381.32   40.1912472.22   40.6112480.08
40.64
12594.45    40.812670.65   41.25 12826.7   42.3512842.92   42.4312960.59
43.27
   12976   43.3913107.01   45.9913131.94   46.49 13267.1   46.5913272.69
46.55
13418.89   45.6613526.99   45.2813598.75   45.3213620.43   45.4413767.17
45.83
14006.29   46.46 14150.8    49.714166.39   49.7414193.42   50.7114218.38
50.93
 14562.5   54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9675      .2   10884    .035 11127.5      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         10884 11127.5             162     162     162             .3
.5
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   13980 14017.7      48

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 27.68

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9750   53.34   10000   49.54   10030   48.94   10069   47.44   10093
46.94
   10123   44.94   10139   43.64   10188   40.64   10261   35.54   10314
32.94
   10417   31.84   10487   32.44   10521   33.24   10531   31.24   10544
29.54
   10565   28.24   10588   27.64   10646   28.14   10683   27.64   10706
28.34
```

```
   10737   29.64   10750   31.24   10771   32.84   10814   34.34   10843
39.14
   10872   42.54   10914   42.84   10984   43.14   11043   43.04   11093
43.24
   11106   43.34   11117   44.14   11133   44.14   11171   42.04   11217
40.94
   11291   39.64   11379   38.84   11493   37.64   11571   37.14   11640
36.74
   11837   32.64   11858   32.04   11887   32.04   11923   33.14   11977
33.44
   12072   34.14   12182   34.34   12421   37.04   12549   39.04   12699
45.24
   12829   45.44   12975   43.24   13148   41.54   13310   41.54   13540
41.54
   13679   47.24   13694   47.24   13720   49.04   13744   49.34   14075
54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9750      .2   10521    .035   10771      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         10521   10771             4000    6125    5500             .1
.3

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 26.52

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    8800   51.34   10000   44.34   10050   43.84   10114   43.14   10172
42.04
   10249   41.74   10324   43.44   10370   44.64   10412   42.74   10478
42.14
   10552   42.44   10604   43.34   10701   43.34   10756   43.74   10812
43.74
   10836   42.64   10841   39.64   10847   39.64   10854   42.84   10931
43.14
   11029   42.84   11083   42.14   11155   40.94   11251   39.54   11338
36.14
   11416   33.84   11456   32.64   11519   32.34   11595   32.04   11710
33.04
   11813   34.44   11889   34.64   12055   32.54   12153   32.04   12221
29.14
   12312   33.84   12416   34.84   12539   35.04   12637   34.14   12655
34.14
```

```
   12662   35.04   12676   35.04   12690   35.14   12713   29.44   12716
27.64
   12729   23.84   12767   22.74   12787   22.54   12797   22.94   12816
24.64
   12823   27.24   12827   29.44   12831   34.44   12841   35.54   12858
36.64
   12866   42.64   12883   46.34   12903   47.74   12940   50.04   12985
51.54
   13041   53.34   13097   53.34   13150   53.04   13213   53.34   13292
53.74
   13375   53.94   13458   53.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    8800      .2   12690    .035   12831      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         12690   12831             5800    7022    2730             .1
.3

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 25.19

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
   10000   51.44   10111   51.94   10227   52.44   10329   51.74   10408
50.74
   10472   48.84   10510   48.54   10554   48.54   10621   48.24   10695
46.84
   10829   45.04   10988   41.74   11095   40.84   11175   40.14   11269
41.64
   11326   41.94   11367   40.84   11409   38.54   11440   34.34   11454
32.64
   11476   31.94   11492   31.34   11512   29.84   11527   27.84   11600
24.77
   11677   27.84   11688   30.14   11704   30.74   11726   31.64   11751
31.54
   11775   34.24   11797   34.04   11841   33.54   11873   32.04   11893
30.24
   11919   30.04   11945   30.44   11984   30.54   12012   33.84   12050
33.84
   12102   34.54   12207   36.44   12302   37.04   12430   38.44   12538
42.14
   12686   43.54   12755   46.34   12874   47.74   12911   47.54   12948
47.54
   13003   48.54   13059   48.64   13141   49.44   13212   51.54   13292
52.24
```

```
Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
   10000      .2   11476    .035   11726      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         11476   11726             1700    3432    3500             .1
.3
```

POST-DEVELOPMENT

HEC-RAS HEC-RAS 5.0.5 June 2018
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: FL19074 POST
Project File : FL19074POST.prj
Run Date and Time: 10/19/2019 6:48:38 PM

Project in English units

Project Description:
Upper Suwannee River Floodplain Model 10, 50, 100, 500
Taylor
Engineering
Adapted from HEC-2 Provided by SRWMD

Model was truncated to
only include: Dixie, Gilchrist and LaFayette Counties. Converted to HEC-RAS
3.1.3, with some updates to structures and adjacent cross sections August 2005
by Dewberry and Davis LLC - Atlanta Office

The flodoway did not require any
adjustments to width following updated survey data. Floodway stations were
moved to account for new stationing on some sections.

PLAN DATA

Plan Title: Floodway Run
Plan File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\POST-DEVELOPMENT\FL19074POST.p02

Geometry Title: Updated 2005
Geometry File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\POST-DEVELOPMENT\FL19074POST.g01

Flow Title : Floodway
Flow File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\POST-DEVELOPMENT\FL19074POST.f02

Plan Summary Information:

Number of:	Cross Sections	= 298	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 27	Lateral Structures	=	0

Computational Information

Water surface calculation tolerance	= 0.003
Critical depth calculation tolerance	= 0.003
Maximum number of iterations	= 20
Maximum difference tolerance	= 0.1
Flow tolerance factor	= 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: Between every coordinate point (HEC2 Style)
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = Santa Fe Reach = Main

RS	Profile	Method	Value1	Value2
79.85	FW	1	11748	13914
79.1	FW	1	11751	14501
78.16	FW	1	11175	14425
76.67	FW	1	11077	12902
75.55	FW	1	13117	13450
75.15	FW	1	13519	13841
75	FW	1	13519	13691
74.98	FW	1	13730	13798
74.97	FW	1	13730	13798
74.92	FW	1	12760	13058
74.35	FW	1	13535	13911
74.3	FW	1	13778	14066
74.28	FW	1	12900	13101
74.27	FW	1	12900	13101
74.23	FW	1	13778	14066
74.04	FW	1	13578	14216
73.94	FW	1	13528	14446
73.36	FW	1	11527	13077
73.32	FW	1	11906.2	13864.7

73.31	FW	1	11092.3	11363
73.3	FW	1	10888.7	12618.1
73.27	FW	1	10888.7	12618.1
72.59	FW	1	10388	11224
71.46	FW	1	11917	12761
70.18	FW	1	10513.9	11110.1
69.45	FW	1	10622.3	10950.5
69.38	FW	1	11550	11652
69.37	FW	1	11550	11652
69.22	FW	1	10831	11293
68.72	FW	1	10736	11214
67.83	FW	1	11957.3	12768.6
67.11	FW	1	10562	11152
65.99	FW	1	10799	11834.2
65.97	FW	1	10996.4	11617
65.96	FW	1	11085.6	11617
65.89	FW	1	10903.2	11798.1
65.86	FW	1	10910.1	11796.1
64.57	FW	1	10976.2	11472.7
63.6	FW	1	10143	11830
62.24	FW	1	10171	12971
61.02	FW	1	10591	13058
59.68	FW	1	11827.6	12959.4
59.66	FW	1	10865	11065
59.65	FW	1	10865	11065
59.57	FW	1	11834.8	12950.8
59.26	FW	1	11560	12380
58.81	FW	1	11510	12035
58.79	FW	1	10315	10479
58.78	FW	1	10315	10476
58.7	FW	1	11510	12335
58.15	FW	1	11398	12448
57.21	FW	1	10927	11727
56.22	FW	1	11067	11967
55.99	FW	1	11067	11967
55.96	FW	1	12460	13610
55.95	FW	1	12460	13610
55.83	FW	1	10813	12613
54.27	FW	1	11100	12385
53.44	FW	1	10333	11733
51.87	FW	1	11150	13550
49.61	FW	1	12785	14322
49.48	FW	1	13817	15609
49.46	FW	1	13901	15349
49.45	FW	1	13901	15349
49.38	FW	1	13817	15609
49.31	FW	1	13817	15609
49.29	FW	1	14693	16393
49.28	FW	1	14693	16393
49.19	FW	1	14839.3	16588.4
48.04	FW	1	16259	17693.5
46.59	FW	1	12394.1	14173.5
45.48	FW	1	10484.9	12085.4
44.02	FW	1	11805	13551

42.54	FW	1	10083	14281
41.67	FW	1	11164	14130
41.63	FW	1	11164	14130
41.62	FW	1	11321	14621
41.61	FW	1	11321	14621
41.56	FW	1	10640	14637
40.91	FW	1	10572	12069
39.81	FW	1	11200	12953
39.02	FW	1	10108	10730
37.98	FW	1	10982	13472
37.25	FW	1	10533	13666
37.19	FW	1	10533	13666
37.17	FW	1	10550	13865
37.16	FW	1	10550	13865
37.07	FW	1	10406	13994
35.58	FW	1	10782	16371
35.57	FW	1	10782	16371
33.85	FW	1	10981	15203
33.09	FW	1	11012	13334
32.18	FW	1	11413	13528
30.42	FW	1	10675	17380
28.94	FW	1	10136	14876
27.82	FW	1	10997	13555
27.79	FW	1	10997	13555
27.77	FW	1	10897	13384
27.76	FW	1	10897	13384
27.68	FW	1	10373	12821
26.52	FW	1	9800	12900
25.19	FW	1	11176	11726
24.54	FW	1	10906	11301
24.52	FW	1	10906	11301
24.51	FW	1	11125	11595
24.5	FW	1	11125	11595
24.49	FW	1	10906	11301
24.48	FW	1	11678	12222
24.47	FW	1	11678	12222
24.44	FW	1	10942	11309
24.15	FW	1	10471	11010
23.82	FW	1	10508	10999
23.14	FW	1	10720	11461
22.24	FW	1	10634	11158
21.59	FW	1	12184	12725
20.44	FW	1	10537	11905
19.62	FW	1	10940	12164
18.49	FW	1	10716	12303
17.78	FW	1	11513	13128
17.28	FW	1	10213	11698
16.53	FW	1	11939	13607
15.75	FW	1	13828	15755
15.72	FW	1	13974.5	15901.5
15.7	FW	1	13800.25	15570.25
15.66	FW	1	14195	15938
15.08	FW	1	10868	12511
14.08	FW	1	11417	13300

13.03	FW	1	12170	14002
11.3	FW	1	11380	12995
10.06	FW	1	10391	11608
8.43	FW	1	12043	14142
7.64	FW	1	11909	13603
6.46	FW	1	13592	15193
4.73	FW	1	10932	12384
3.6	FW	1	10109	11719
2.88	FW	1	10951	12711
2.5	FW	1	11586	13299
2.46	FW	1	10705	12409
2.42	FW	1	10471.66	12121.66
2.39	FW	1	11054	12568
1.61	FW	1	10219	11589
15.4	FW	1	24298	31389
13.11	FW	1	26701	41400
9.81	FW	1	31912	47714
7.49	FW	1	39512	53434
5.83	FW	1	53257	71534
3.15	FW	1	49704	72725

FLOW DATA

Flow Title: Floodway
Flow File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\POST-DEVELOPMENT\FL19074POST.f02

Flow Data (cfs)

River	Reach	RS	100 Year
FW			
Santa Fe	Main	79.85	374
374			
Santa Fe	Main	73.36	2965
2965			
Santa Fe	Main	67.11	4665
4665			
Santa Fe	Main	57.21	8767
8767			
Santa Fe	Main	49.61	25162
25162			
Santa Fe	Main	44.02	23767
23767			
Santa Fe	Main	39.81	32800
32800			
Santa Fe	Main	37.25	32569
32569			
Santa Fe	Main	33.85	24427
24427			

Santa Fe	Main	28.94	23206	23206
Santa Fe	Main	27.79	20910	20910
Santa Fe	Main	25.19	19587	19587
Santa Fe	Main	19.62	16717	16717
Santa Fe	Main	15.66	16359	16359
Suwannee	WtoSF	127.51	76500	76500
Suwannee	WtoSF	124.93	71400	71400
Suwannee	WtoSF	112.92	69500	69500
Suwannee	WtoSF	106.69	67800	67800
Suwannee	WtoSF	101.82	66300	66300
Suwannee	WtoSF	98.23	64900	64900
Suwannee	WtoSF	91.48	63900	63900
Suwannee	WtoSF	86.73	63250	63250
Suwannee	WtoSF	82.16	62950	62950
Suwannee	WtoSF	76.12	62100	62100
Suwannee	WtoSF	70.98	62100	62100
Suwannee	BelowSF	65.66	67300	67300

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Suwannee	BelowSF	100 Year		Known WS = 1.87
Suwannee	BelowSF	FW		Known WS = 1.87

Observed Water Surface Marks

River	Reach	RS	100 Year	FW
RIVER-1	Reach-1	97	58	
RIVER-1	Reach-1	96	58	
RIVER-1	Reach-1	95	57	

RIVER-1	Reach-1	94	56.9
RIVER-1	Reach-1	93	56.9
RIVER-1	Reach-1	92	56.9
RIVER-1	Reach-1	91	56.8
RIVER-1	Reach-1	90	56.8
RIVER-1	Reach-1	89	56.8
RIVER-1	Reach-1	88	56.8
RIVER-1	Reach-1	87	56.7
RIVER-1	Reach-1	86	56.6
RIVER-1	Reach-1	85	56.5
RIVER-1	Reach-1	84	56.3
RIVER-1	Reach-1	83	56
RIVER-1	Reach-1	82	55.8
RIVER-1	Reach-1	81	55.2
RIVER-1	Reach-1	80	55
RIVER-1	Reach-1	79	54.7
RIVER-1	Reach-1	78	54.2
RIVER-1	Reach-1	77	54
RIVER-1	Reach-1	76	53.8
RIVER-1	Reach-1	75	53.3
RIVER-1	Reach-1	74	53
RIVER-1	Reach-1	73	52.9
RIVER-1	Reach-1	72	52.5
RIVER-1	Reach-1	71	52.1
RIVER-1	Reach-1	70	52
RIVER-1	Reach-1	69	51.5
RIVER-1	Reach-1	68	51.2
RIVER-1	Reach-1	67	51
RIVER-1	Reach-1	66	51
RIVER-1	Reach-1	65	50.8
RIVER-1	Reach-1	64	50.2
RIVER-1	Reach-1	63	49.9
RIVER-1	Reach-1	62	49.8
RIVER-1	Reach-1	61	49.6
RIVER-1	Reach-1	60	49.6
RIVER-1	Reach-1	59	49.5
RIVER-1	Reach-1	58	48.8
RIVER-1	Reach-1	57	47.8
RIVER-1	Reach-1	56	47.2
RIVER-1	Reach-1	55	47.1
RIVER-1	Reach-1	54	47.1
RIVER-1	Reach-1	53	46.2
RIVER-1	Reach-1	52	45.8
RIVER-1	Reach-1	51	45.3
RIVER-1	Reach-1	50	45
RIVER-1	Reach-1	49	44.2
RIVER-1	Reach-1	48	43.8
RIVER-1	Reach-1	47	43
RIVER-1	Reach-1	46	42.2
RIVER-1	Reach-1	45	42
RIVER-1	Reach-1	44	41.5
RIVER-1	Reach-1	43	41.2
RIVER-1	Reach-1	42	40.8
RIVER-1	Reach-1	41	40.1

RIVER-1	Reach-1	40	39.5
RIVER-1	Reach-1	39	38.9
RIVER-1	Reach-1	38	38.5
RIVER-1	Reach-1	37	38.2
RIVER-1	Reach-1	36	37.8
RIVER-1	Reach-1	35	37.3
RIVER-1	Reach-1	34	37
RIVER-1	Reach-1	33	36.8
RIVER-1	Reach-1	32	36.5
RIVER-1	Reach-1	31	36.2
RIVER-1	Reach-1	30	36
RIVER-1	Reach-1	29	36
RIVER-1	Reach-1	28	35.9
RIVER-1	Reach-1	27	35.7
RIVER-1	Reach-1	26	35.6
RIVER-1	Reach-1	25	35.2
RIVER-1	Reach-1	24	35.1
RIVER-1	Reach-1	23	35.1
RIVER-1	Reach-1	22	35
RIVER-1	Reach-1	21	35
RIVER-1	Reach-1	20	35
RIVER-1	Reach-1	19	34.9
RIVER-1	Reach-1	18	34.8
RIVER-1	Reach-1	17	34.6
RIVER-1	Reach-1	16	34.2
RIVER-1	Reach-1	15	34
RIVER-1	Reach-1	14	33.9
RIVER-1	Reach-1	13	33.4

GEOMETRY DATA

Geometry Title: Updated 2005
Geometry File : C:\CONSULTING\JOB FILES\ZERO RISE\FL19074-SOTO\DWGS\HEC-RAS\POST-DEVELOPMENT\FL19074POST.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Santa Fe	Main		Santa Fe
Suwannee	WtoSF		Santa Fe
Suwannee	BelowSF	Santa Fe	

JUNCTION INFORMATION

Name: Santa Fe
Description: Sante Fe confluence with Suwannee
Energy computation Method

Length across Junction Tributary

```
     River           Reach               River           Reach
Length   Angle
Suwannee             WtoSF       to Suwannee            BelowSF
4260
Santa Fe              Main       to Suwannee            BelowSF
10090.8

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 27.77

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9575   54.34   10000   50.14   10169   49.04   10372   47.74   10654
47.54
   10897   47.44   11139   47.84   11246   47.84   11247   47.84   11310
27.94
   11313   27.94   11371   29.54   11394   25.54   11397   25.54   11446
25.84
   11481   32.54   11484   47.84   11716   47.84   11995   46.74   12205
46.94
   12352   46.64   12500   46.44   12687   46.74   12880   47.14   13086
47.34
   13248   47.84   13387   47.74   13539   47.74   13711   47.74   13975
48.34
   14072   49.34   15050   54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9575      .2   11247    .035   11484      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         11247   11484               27      27      27             .3
.5

BRIDGE


RIVER: Santa Fe
REACH: Main               RS: 27.765

INPUT
Description: Bridge #5
Distance from Upstream XS =       1
Deck/Roadway Width        =      25
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       6
```

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   11247   47.84   47.84   11310   47.84   44.94   11313   47.84   44.94
   11394   47.84   44.94   11397   47.84   44.94   11484   47.84   47.84

Upstream Bridge Cross Section Data
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9575   54.34   10000   50.14   10169   49.04   10372   47.74   10654
47.54
   10897   47.44   11139   47.84   11246   47.84   11247   47.84   11310
27.94
   11313   27.94   11371   29.54   11394   25.54   11397   25.54   11446
25.84
   11481   32.54   11484   47.84   11716   47.84   11995   46.74   12205
46.94
   12352   46.64   12500   46.44   12687   46.74   12880   47.14   13086
47.34
   13248   47.84   13387   47.74   13539   47.74   13711   47.74   13975
48.34
   14072   49.34   15050   54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9575      .2   11247    .035   11484      .2

Bank Sta: Left   Right    Coeff Contr.   Expan.
         11247   11484             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   11247   47.84   47.84   11310   47.84   44.94   11313   47.84   44.94
   11394   47.84   44.94   11397   47.84   44.94   11484   47.84   47.84

Downstream Bridge Cross Section Data
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9600   54.34   10000   50.14   10169   49.04   10372   47.74   10654
47.54
   10897   47.44   11139   47.84   11246   47.84   11247   47.84   11310
27.94
   11313   27.94   11371   29.54   11394   25.54   11397   25.54   11446
25.84
   11481   32.54   11484   47.84   11716   47.84   11995   46.74   12205
46.94
   12352   46.64   12500   46.44   12687   46.74   12880   47.14   13086
47.34
   13248   47.84   13387   47.74   13539   47.74   13711   47.74   13975
48.34
   14072   49.34   15050   54.34

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
    9600      .2   11247    .035   11484      .2

Bank Sta: Left   Right    Coeff Contr.   Expan.
         11247   11484             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  2

Pier Data
Pier Station     Upstream= 11311.5    Downstream= 11311.5
Upstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94
Downstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94

Pier Data
Pier Station     Upstream= 11395.5    Downstream= 11395.5
Upstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94
Downstream     num=       2
    Width   Elev    Width   Elev
       3    -.66       3   44.94

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Energy

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION
```

RIVER: Santa Fe
REACH: Main RS: 27.76

INPUT
Description: HWY 441 BRIDGE
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9600	54.34	10000	50.14	10169	49.04	10372	47.74	10654	47.54
10897	47.44	11139	47.84	11246	47.84	11247	47.84	11310	27.94
11313	27.94	11371	29.54	11394	25.54	11397	25.54	11446	25.84
11481	32.54	11484	47.84	11716	47.84	11995	46.74	12205	46.94
12352	46.64	12500	46.44	12687	46.74	12880	47.14	13086	47.34
13248	47.84	13387	47.74	13539	47.74	13711	47.74	13975	48.34
14072	49.34	15050	54.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9600	.2	11247	.035	11484	.2

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11247	11484	162	162	.3	.5

CROSS SECTION

RIVER: Santa Fe
REACH: Main RS: 27.720*

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9675	53.84	9968.62	50.32	10067.02	49.41	10092.68	49.13	10114.07	48.9
10175.22	47.88	10212.86	47.47	10241.7	46.73	10259.9	46.33	10284.99	45.67
10361.82	44.13	10448.7	42.15	10476.3	41.53	10559.4	40.21	10627.08	39.96
10720.92	39.75	10804.72	40.07	10830.69	40.14	10883.27	40.53	10884	40.54
10899.97	36.07	10920.73	30.72	10929.86	28.56	10932.04	28.52	10954.27	28.51

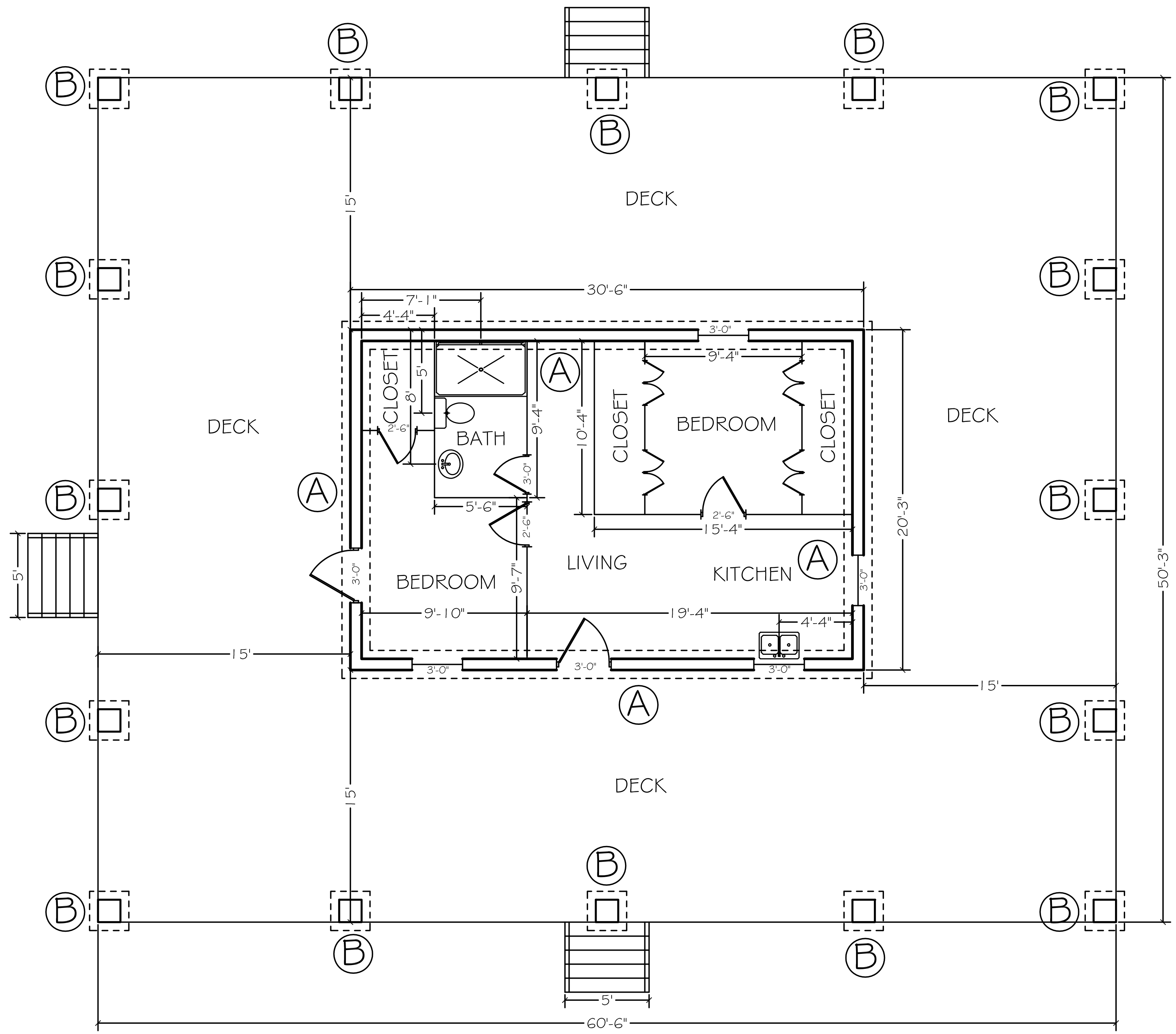
```
10974.26   28.73   10991   26.5911020.92   26.84   11040   26.5911062.87
27.01
11089.28   27.6511093.69   28.1611106.62   30.1911124.48   32.57 11127.5
40.34
11172.21   41.0911202.35   43.49 11232.5   45.1911276.17   45.3411348.95
45.49
11350.98   45.4911410.29   45.3211462.27   45.3111475.78   45.3311487.22
45.71
11503.85   45.6811543.36   44.5511591.18    43.911619.73    43.611668.12
43.21
11759.61   42.8611822.01   42.5711878.13   42.2311959.22   41.8911963.61
41.88
12030.96   41.6412106.18   40.8412235.77   39.65 12257.6   39.3712286.31
39.39
12287.75   39.3912325.18   39.9812381.32   40.1912472.22   40.6112480.08
40.64
12594.45    40.812670.65   41.25 12826.7   42.3512842.92   42.4312960.59
43.27
   12976   43.3913107.01   45.9913131.94   46.49 13267.1   46.5913272.69
46.55
13418.89   45.6613526.99   45.2813598.75   45.3213620.43   45.4413767.17
45.83
14006.29   46.46 14150.8    49.714166.39   49.7414193.42   50.7114218.38
50.93
 14562.5   54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9675      .2   10884    .035 11127.5      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         10884 11127.5             162     162     162             .3
.5
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      13965 14033   58.28

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 27.68

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9750   53.34   10000   49.54   10030   48.94   10069   47.44   10093
46.94
   10123   44.94   10139   43.64   10188   40.64   10261   35.54   10314
32.94
```

```
   10417   31.84   10487   32.44   10521   33.24   10531   31.24   10544
29.54
   10565   28.24   10588   27.64   10646   28.14   10683   27.64   10706
28.34
   10737   29.64   10750   31.24   10771   32.84   10814   34.34   10843
39.14
   10872   42.54   10914   42.84   10984   43.14   11043   43.04   11093
43.24
   11106   43.34   11117   44.14   11133   44.14   11171   42.04   11217
40.94
   11291   39.64   11379   38.84   11493   37.64   11571   37.14   11640
36.74
   11837   32.64   11858   32.04   11887   32.04   11923   33.14   11977
33.44
   12072   34.14   12182   34.34   12421   37.04   12549   39.04   12699
45.24
   12829   45.44   12975   43.24   13148   41.54   13310   41.54   13540
41.54
   13679   47.24   13694   47.24   13720   49.04   13744   49.34   14075
54.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9750      .2   10521    .035   10771      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         10521   10771             4000    6125    5500             .1
.3

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 26.52

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    8800   51.34   10000   44.34   10050   43.84   10114   43.14   10172
42.04
   10249   41.74   10324   43.44   10370   44.64   10412   42.74   10478
42.14
   10552   42.44   10604   43.34   10701   43.34   10756   43.74   10812
43.74
   10836   42.64   10841   39.64   10847   39.64   10854   42.84   10931
43.14
   11029   42.84   11083   42.14   11155   40.94   11251   39.54   11338
36.14
   11416   33.84   11456   32.64   11519   32.34   11595   32.04   11710
33.04
```

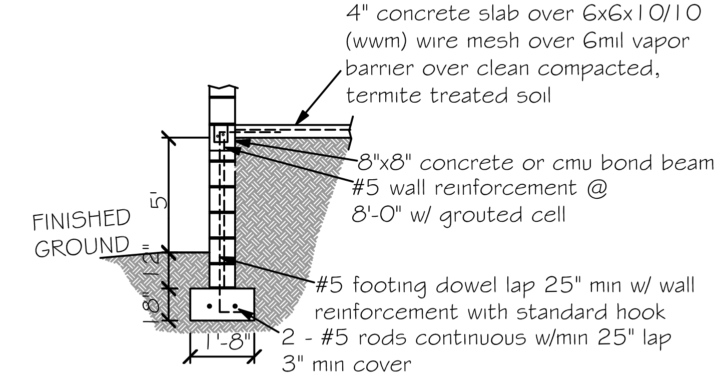
```
   11813   34.44   11889   34.64   12055   32.54   12153   32.04   12221
29.14
   12312   33.84   12416   34.84   12539   35.04   12637   34.14   12655
34.14
   12662   35.04   12676   35.04   12690   35.14   12713   29.44   12716
27.64
   12729   23.84   12767   22.74   12787   22.54   12797   22.94   12816
24.64
   12823   27.24   12827   29.44   12831   34.44   12841   35.54   12858
36.64
   12866   42.64   12883   46.34   12903   47.74   12940   50.04   12985
51.54
   13041   53.34   13097   53.34   13150   53.04   13213   53.34   13292
53.74
   13375   53.94   13458   53.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    8800      .2   12690    .035   12831      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         12690   12831             5800    7022    2730             .1
.3

CROSS SECTION


RIVER: Santa Fe
REACH: Main               RS: 25.19

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
   10000   51.44   10111   51.94   10227   52.44   10329   51.74   10408
50.74
   10472   48.84   10510   48.54   10554   48.54   10621   48.24   10695
46.84
   10829   45.04   10988   41.74   11095   40.84   11175   40.14   11269
41.64
   11326   41.94   11367   40.84   11409   38.54   11440   34.34   11454
32.64
   11476   31.94   11492   31.34   11512   29.84   11527   27.84   11600
24.77
   11677   27.84   11688   30.14   11704   30.74   11726   31.64   11751
31.54
   11775   34.24   11797   34.04   11841   33.54   11873   32.04   11893
30.24
   11919   30.04   11945   30.44   11984   30.54   12012   33.84   12050
33.84
   12102   34.54   12207   36.44   12302   37.04   12430   38.44   12538
42.14
```

```
   12686   43.54   12755   46.34   12874   47.74   12911   47.54   12948
47.54
   13003   48.54   13059   48.64   13141   49.44   13212   51.54   13292
52.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
   10000      .2   11476    .035   11726      .2

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
         11476   11726             1700    3432    3500             .1
.3
```

BUILDING PLANS

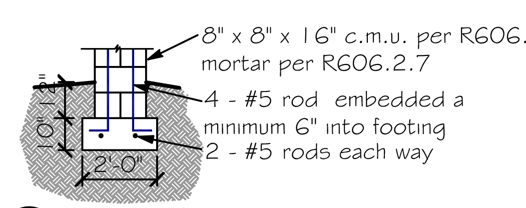


NOTE:
STAIRS RISER SHALL BE 7.5"
AND TREADS SHALL BE 10", PER
FBC, 2017.



A Stem wall foundation (typ)

NOTE:
HEATED AREA: 618 S.F.



B DECK SUPPORT COLUMN FOOTING

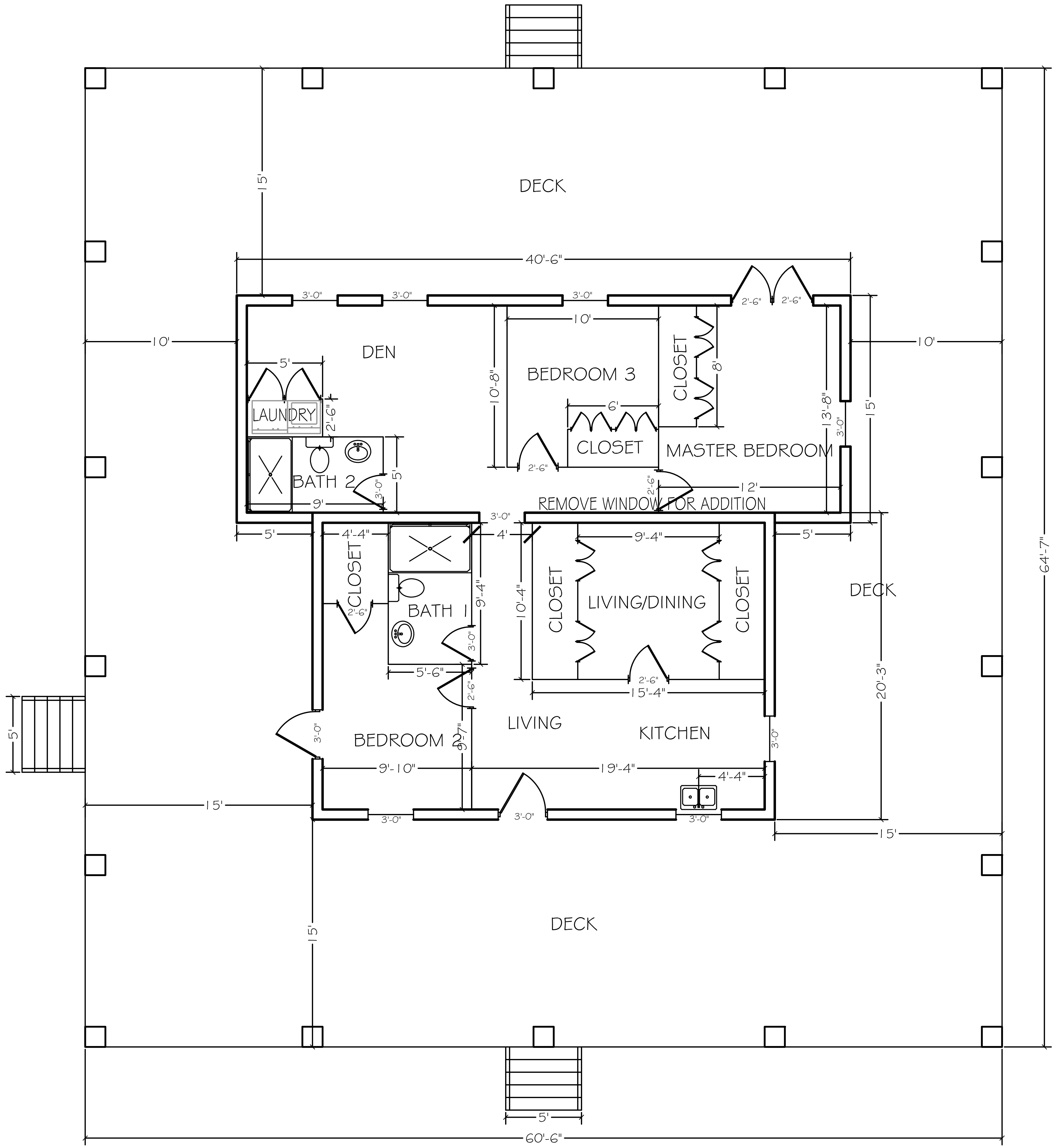
CAROL CHADWICK P.E.

PREPARED FOR
Betsy Soto
Seth Soto
23676 S. Hwy. 441
High Springs, FL
seth.soto95@gmail.com
786.942.9190

REVISION DESCRIPTION | DATE

SOTO RESIDENCE
FLOOR & FOUNDATION PLAN
HIGH SPRINGS, FL

PROJECT NO. FL19074
DATE NOV. 1, 2019
REVISION DATE
SHEET S-1



NOTE:
EXISTING HEATED AREA: 618 S.F.
FUTURE HEATED AREA: 618 S.F.
MAXIMUM HEATED AREA: 1236 S.F.

NOTE:
ZERO RISE REPORT WAS COMPLETED FOR A MAXIMUM CONSTRUCTED WIDTH OF 66 FEET PERPENDICULAR TO THE RIVER FLOW DIRECTION. THE FUTURE ADDITION WILL NOT REQUIRE A NEW ZERO RISE CERTIFICATION.

Digitally signed by Carol Chadwick
DN: c=US, o=Unaffiliated, ou=A01410C0000016CDF503D0F00000CBA, cn=Carol Chadwick
Date: 2019.11.02 17:45:07 -04'00'

CAROL CHADWICK P.E.

CAROL J. CHADWICK LICENSE No. 82560 STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISION DESCRIPTION | DATE

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FUTURE FLOOR PLAN
HIGH SPRINGS, FL

PROJECT NO. FL19074
DATE NOV. 1, 2019
REVISION DATE
SHEET S-2

C:\CONSULTING\JOB FILES\PLAN REVIEW\FL19074-SOTO\DWGS\DETAILS\FL19074 S-1.dwg, 11/1/2019 7:52:51 PM