ALTERNATIVE STORMWATER MANAGEMENT FACILITY REPORT

I-75 (SR 93) PD&E Study

From North of SR 52 to South of CR 476B
(Pasco, Hernando, and Sumter Counties)
FAP No.: 0751-120I
WPI No.: 411014 1 22 01

June 2007

Florida Department of Transportation
District Seven

ALTERNATIVE STORMWATER MANAGEMENT FACILITY REPORT

I-75 (SR 93)

FROM NORTH OF SR 52 TO SOUTH OF CR 476B
PASCO, HERNANDO AND SUMTER COUNTIES, FLORIDA

W.P.I. Segment Number: 411014 1

The proposed action consists of upgrading I-75 from a four-lane to an eight-lane, divided, rural interstate highway for approximately 20.8 miles.

Florida Department of Transportation
District Seven
Tampa, Florida

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Clearwater, FL

June 2007

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) has conducted a Project Development and Environment (PD&E) Study to document the preliminary engineering concept of the I-75 project corridor from north of SR 52 in Pasco County to south of CR 476B in Sumter County, a distance of approximately 20.8 miles. The purposes of the PD&E Study are to develop engineering and environmental data and document information which will aid the FDOT and the Federal Highway Administration in determining the type, design, and location of the proposed improvements, and the impacts, if any, associated with the recommended alignment.

The Alternative Stormwater Management Facility (SMF) Report identifies SMF alternatives and floodplain compensation (FPC) sites and includes an alternative analysis for selection of a preferred alternative for the PD&E Study. This study analyzes SMF alternatives that are hydraulically feasible and environmentally permittable based on the best available information. These alternatives were then compared based on Section 4(f) involvement; cultural resources; environmental impacts including wetlands, upland habitat and protected species involvement; petroleum and hazardous materials contamination; and economic factors including right-of-way costs.

The preferred SMF and FPC sites are listed in the table below.

Preferred SMF / FPC Sites	Station - Location	Area (ac)
SMF 2A	1255+00, RT	2.7
SMF 3C	1281+00, RT	2.2
FPC 3A	1284+00, LT	0.7
SMF 4B	1298+00, RT	4.1
SMF 5C	1339+00, RT	4.3
FPC (Adjacent to SMF) 5C	1339+00, RT	0.2
SMF 6C	1380+00, LT	3.1
SMF 7C	1404+00, LT	1.5
SMF 8A	1420+00, LT	2.2
SMF 9A	1426+00, LT	2.2
FPC 9C	1428+00, LT	0.7
SMF 10B	1454+00, LT	4.1
SMF 11B	1483+00, RT	1.7
SMF 12A	1499+00, LT	1.7
SMF 13C	1548+00, LT	5.1
SMF 14C	1580+00, RT	2.1

Preferred SMF / FPC Sites	Station - Location	Area (ac)
SMF 15A	1595+00, RT	7.8
SMF 16A	1612+00, LT & RT	7.9
SMF 17B	1691+00, LT	8.7
SMF 18B	1707+00, RT	7.5
FPC 18A	1698+00, RT	3.0
SMF 19B	1763+00, LT	7.8
SMF 20B	1794+00, LT	4.7
SMF 21B	1825+00, RT	6.7
SMF 22A	1862+00, LT	7.1
SMF 23A	1896+00, RT	4.8
SMF 24B	1933+00, LT	7.1
SMF 25C	1987+00, LT	5.1
SMF 26C	2006+00, RT	5.2
SMF 27C	2028+00, RT	3.7
SMF 29C	2068+00, RT	7.6
SMF 30B	2162+00, RT	15.0
SMF 31D, 4b(e)C & 4b(w)C	2200+00, RT; 2233+00, RT & 2233+00, LT	13.9 (20.4 Easement)(1)
5aC & 5bC	2252+00, LT & 2265+00, LT	12.0 (53.1 Easement) (1)
6a/bC & 6cC	2300+00, RT & 2339+00, RT	9.4 (37.3 Easement) (1)
7C	2345+00, LT	7.4 (10.8 Easement) (1)

(1) Department intends to acquire Perpetual Transportation/Drainage/Maintenance Easements within the Withlacoochee State Forest. These easements will include areas of stomwater conveyance.

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) has conducted a Project Development and Environment (PD&E) Study to document the preliminary engineering concept of the I-75 project corridor from north of SR 52 in Pasco County to south of CR 476B in Sumter County. The purposes of the PD&E Study are to develop engineering and environmental data and document information which will aid the FDOT and the Federal Highway Administration (FHWA) in determining the type, design, and location of the proposed improvements, and the impacts, if any, associated with the recommended alignment.

The Alternative Stormwater Management Facility (SMF) Report identifies SMF alternatives and includes an alternative analysis for selection of a preferred alternative for the PD&E Study. This study analyzes SMF alternatives that are hydraulically feasible and environmentally permittable based on the best available information. These alternatives were then compared based on Section 4(f) involvement; cultural resources; environmental impacts including wetlands, upland habitat and protected species involvement; petroleum and hazardous materials contamination; and economic factors including right-of-way costs. An alternatives evaluation matrix that summarizes the comparative analysis was developed and is shown in Tables 5 through 36 of Section 8.0. The process of defining and developing the information base included the following:

- FEMA Flood Insurance Rate Maps (FIRM) for Pasco County, November 18, 1981 and September 30, 1982, FIRMs for Hernando County, April 17, 1984, and FIRMs for Sumter County, March 15, 1982.
- United States Department of Agriculture, Soil Conservation Service (now Natural Resource Conservation Service), Soil Survey of Pasco County, Florida, June 1982; Soil Survey of Hernando County, Florida, July 1977, and Soil Survey of Sumter County, Florida, 1988.
- United States Geological Survey (USGS) Quadrangle Maps, Scale 1:24,000: San Antonio, FLA, 1954 (Photo revised 1988); Spring Lake, FLA, 1954 (Photo revised 1988); Saint Catherine, FLA, 1958 and Lacoochee, FLA, 1960 (Photo revised 1988).
- Southwest Florida Water Management District (SWFWMD), Aerial Photography With Contours, Scale 1"=200', 1-foot contour interval, January 1973, October/December 1985, February 1987, December 1987, April 1984, and November 1991.
- Straight Line Diagram (SLD) for I-75, FDOT District Seven, Planning and Statistics Office, December 1, 2004 for Pasco County, January 31, 2005 for Hernando County, and May 8, 2004 for Sumter County.
- FDOT Drainage Manual, October 2004.

2.0 PROJECT DESCRIPTION

The study area for this project extends from just north of SR 52 in Pasco County, through Hernando County, to just south of County Road (CR) 476B in Sumter County, Florida; a distance of approximately 20.8 miles. The study area for this project consists of the mainline of I-75 and the area bordering it for the assessment of social, economic, and cultural effects.

Presently, within the project limits, I-75 is a four-lane, median divided, limited access, rural highway that generally occupies a 300-foot wide band right-of-way. No major improvements have been made to this segment of I-75 since its original construction in the 1960s. The study area, in addition to the mainline of I-75, includes two interchanges and two rest areas (one in each direction). More specifically, a partial cloverleaf interchange is currently provided at Blanton Road (CR 41) approximately 6.3 miles north of SR 52 in Pasco County and a diamond interchange is present at Cortez Road (SR 50/US 98), approximately 9.3 miles north of CR 41 in Hernando County. The rest areas are located approximately 4.9 miles north of SR 50 in Sumter County.

From north of SR 50 to the northern terminus of the project, Withlacoochee State Forest abuts the entire western border of I-75 and most of its eastern border. At the Hernando/Sumter County line, approximately 1.5 miles from the northern project terminus, I-75 crosses the Withlacoochee River. The project location is shown in Figure 1.

3.0 EXISTING CONDITIONS

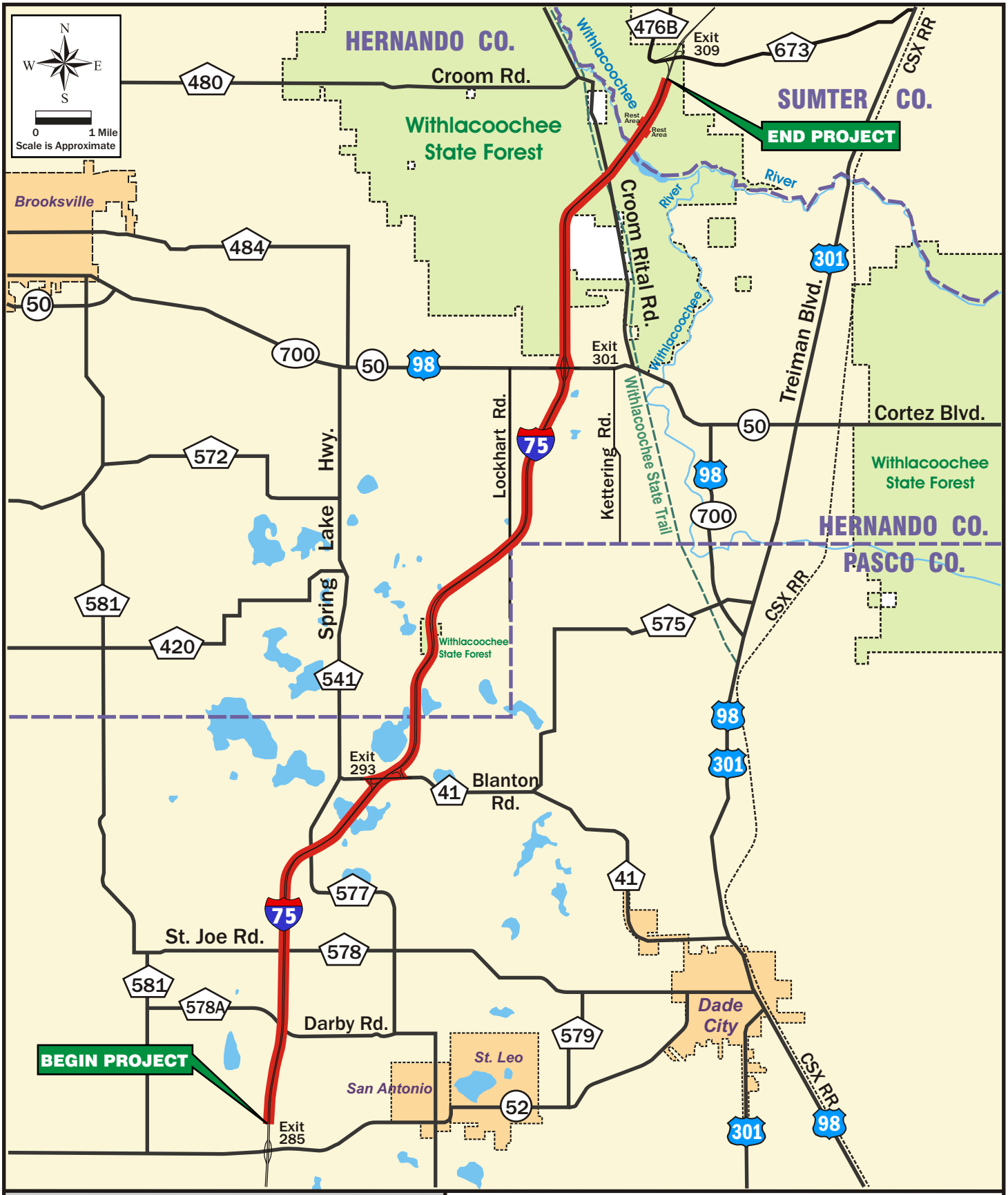
3.1 Existing Roadway Conditions

The existing roadway is typically a four-lane rural facility with two 12-foot lanes in each direction, a 64-foot depressed median with an 8-foot inside shoulder (4 feet paved) and 12-foot outside shoulders (10 feet paved). The roadway cross section varies throughout the length of the project. The posted speed limit is 70 mph. These features are provided within a right-of-way that is predominantly 300 feet wide except at certain locations where northbound and southbound I-75 follow independent alignments. The existing roadway typical section for I-75 is shown in Figure 2.

3.2 Existing Drainage Conditions

3.2.1 Topography and Hydrologic Features

In Pasco County, the Withlacoochee, Hillsborough, Pithlachascotee and Anclote Rivers are the major waterways (USDA 1982:5). In addition, over 190 lakes are located throughout Pasco County, including Lake Iola, Moody Lake, and Mud Lake near the I-75 corridor. Stanley Branch, Bee Tree Branch, and Cypress Creek also cross the project corridor. Hernando County is situated within the Middle Gulf Hydrologic System (Cherry et al. 1970). The major and permanent streams are the Withlacoochee, Little Withlacoochee, and Weeki Wachee Rivers (USDA 1977). Numerous small streams and creeks are located in the coastal areas. Springs also are common along the coast. Of the approximate 130 lakes scattered throughout Hernando County, those located proximate to the I-75 corridor include McClendon, Robinson, and Oriole Lakes. During the Late Pleistocene/Early Holocene, many of these water features were non-existent. The Withlacoochee and Little Withlacoochee Rivers also flow through part of Sumter County. The former forms the line dividing Hernando and Sumter Counties. Several waterways, including the Dead River, Outlet River, and Jumper Creek discharge into the Withlacoochee River (USDA 1988:2). Wild Cow Prairie, another wetland feature near the project area, is situated at the northern end of the project area. Elevations throughout the project corridor range from about 59 feet



I-75 PD&E Study

From N. of SR 52 to S. of CR 476B

Pasco, Hernando & Sumter Counties

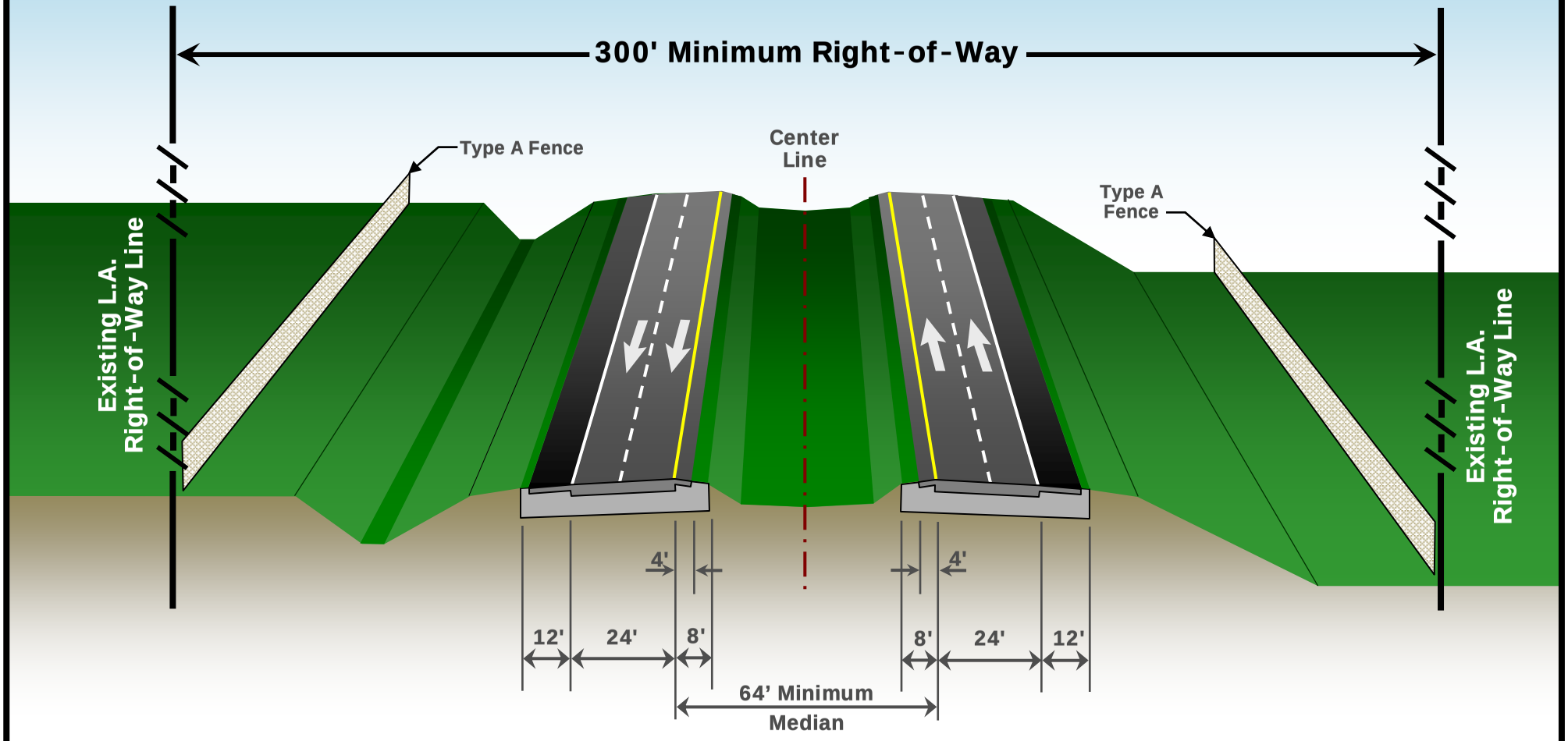
WPI Seg. No.: 411014 1

FAP No: 0751-120I

Project Location Map

Figure 1

Roadway Typical Section



I-75 PD&E Study

From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
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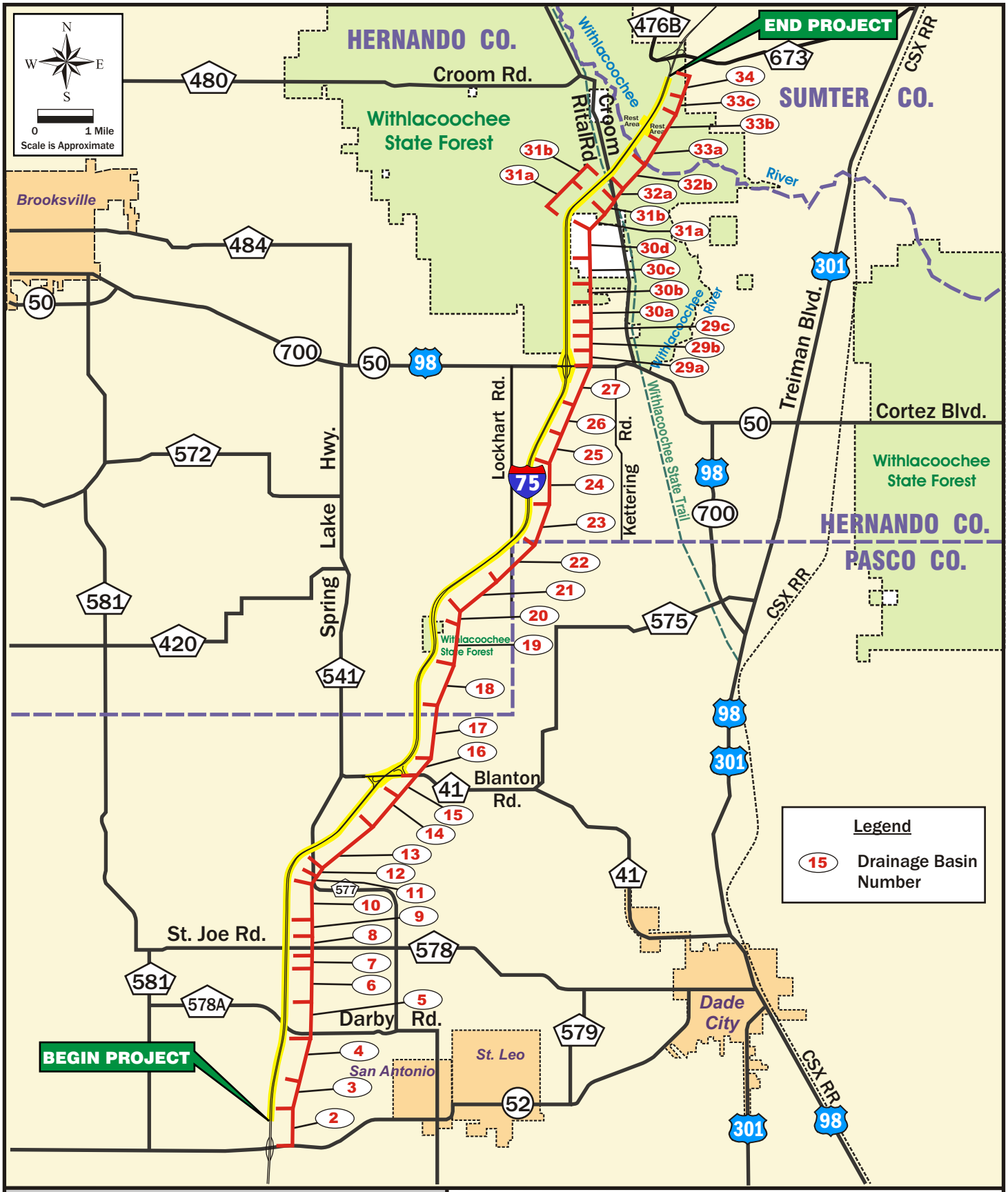
I-75 Mainline
Existing Typical Section

Figure 2


N
W
E
S
0
1 Mile
Scale is Approximate
HERNANDO CO.
SUMTER CO.
PASCO CO.
END PROJECT
BEGIN PROJECT
476B
673
480
Croom Rd.
Withlacoochee State Forest
Withlacoochee River
Rest Area
Rest Area
CSX RR
Brooksville
484
50
700
98
301
Treiman Blvd.
Cortez Blvd.
Lockhart Rd.
Hwy.
Lake
Spring
Kettering Rd.
Withlacoochee State Trail
572
581
420
541
75
575
Withlacoochee State Forest
Blanton Rd.
41
St. Joe Rd.
578
578A
581
577
Darby Rd.
579
Dade City
St. Leo
San Antonio
52
Legend
15 Drainage Basin Number
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Existing
Drainage Patterns Map
Figure 3

National Geodetic Vertical Datum (NGVD) of 1929 at the northern end of the project to about 193 feet in the middle of the project. Table 1 describes the regional drainage boundaries as well as the basin boundary limits for the sub-basins for this project. A review of the best available information listed in Section 1.0 of this report in addition to field reconnaissance was conducted to assess the sub-basin limits. The table also includes the existing cross drains.

Table 1
Regional Drainage Boundaries

Regional Drainage Basin	Regional Sub-Basins	Basin Boundaries	Draining to Cross Drain No.
Hillsborough River Basin	1	North of SR 52 to Oscie Murphy Rd.	N/A
	2	Oscie Murphy Rd. to Sta. 1265+45	1
	3	Sta. 1265+45 to Sta.1292+50	2
	4	Sta. 1292+50 to Sta. 1330+75	3
	5	Sta. 1330+75 to Sta. 1363+10	N/A
	6	Sta. 1363+10 to Sta. 1393+35	4
	7	Sta. 1393+35 to Sta. 1405+75	5
	8	Sta. 1405+75 to Sta. 1424+10	N/A
	9	Sta. 1424+10 to Sta. 1444+55	6, 7
	10	Sta. 1444+55 to Sta. 1483+50	8
	11	Sta. 1483+50 to Sta. 1496+85	9
	12	Sta. 1496+85 to Sta. 1510+00	10
	13	Sta. 1510+00 to Sta. 1564+10	11, 12
	14	Sta. 1564+10 to Sta. 1588+55	N/A
	15	Sta. 1588+55 to Sta. 1607+35	13, 14
	16	Sta. 1607+35 to Sta. 1644+05	15, 16
	17	Sta. 1644+05 to Sta. 1694+75	17
	18	Sta. 1694+75 to Sta. 1735+90	18,19,20
	19	Sta. 1735+90 to Sta. 1779+35	21, 22
	20	Sta. 1779+35 to Sta. 1801+50	23, 24, 25
	21	Sta. 1801+50 to Sta. 1845+00	26, 27
	22	Sta. 1845+00 to Sta. 1883+45	28, 29
Withlacoochee River Basin	23	Sta. 1883+45 to Sta. 1915+00	30
	24	Sta. 1915+00 to Sta. 1961+25	31, 32, 33, 34
	25	Sta. 1961+25 to Sta. 1987+60	35

Regional Drainage Basin	Regional Sub-Basins	Basin Boundaries	Draining to Cross Drain No.
Withlacoochee River Basin	26	Sta. 1987+60 to Sta. 2016+75	36, 37, 38
	27	Sta. 2016+75 to Cortez Blvd.	39
	28	Not Used	N/A
	29a, 29b & 29c	Cortez Blvd. to Sta. 2091+00	40, 41, 42
	30a, 30b, 30c & 30d	Sta. 2091+00 to Sta. 2189+00	43, 44, 45, 46
	31a & 31b	Sta. 2189+00 to Sta. 2239+15	47, 48, 49, 50
	32a & 32b	Sta. 2239+15 to Sta. 2272+50	51, 52, 53
	33a, 33b & 33c	Sta. 2275+25 to Sta. 2332+15	Bridge, 55, 56, 57
	34	Sta. 2332+15 to Sta. 2356+67	58, 59, 60

3.2.2 Existing Drainage Patterns

The I-75 project is within the jurisdiction of the Southwest Florida Water Management District (SWFWMD).

The proposed project is not expected to have an impact on the water quality of the Hillsborough and Withlachochee Rivers. Currently there is little to no treatment of stormwater runoff from I-75. Some treatment is provided by grass swales and wet ditches created during the original construction of the roadway for conveyance of stormwater. Runoff from the bridges enters the waterways directly via scuppers.

There are no existing stormwater retention or detention facilities within the project limits.

3.2.3 Existing Cross Drains

A review of the FDOT construction plans and SLDs indicates that there are sixty existing cross drains within the limits of the I-75 PD&E project. The locations of these drainage structures were verified by field inspection.

Hydraulic equivalency for replacement or modification of the existing cross drains will be determined in subsequent design phases of this project.

The existing cross drains are listed in Table 2. The locations of the existing cross drains are shown on the Concept Plans in Appendix A.

Table 2
Existing Cross Drains

Cross Drain No.	Station	Pipe Size and Material
1	1260+50	8’ x 3’ CBC
2	1292+75	Bridge CBC
3	1331+00	10’ x 5’ CBC
4	1378+00	Triple-36” RCP
5	1405+00	36” RCP
6	1424+15	Bridge CBC
7	1425+25	12’ x 5’ CBC
8	1444+70	6’ x 4’ CBC
9	1483+70	36” RCP
10	1497+00	36” RCP
11	1518+00	36” RCP
12	1552+85	12’ x 12’ CBC
13	1604+70	3’ x 3’ CBC
14	1606+60	36” RCP
15	1628+90	3’ x 3’ CBC
16	1644+90	36” RCP
17	1680+80	36” RCP
18	1703+20	36” RCP
19	1714+00	24” RCP
20	1730+40	30” RCP
21	1746+00	42” RCP
22	1758+75	48” RCP LT., / 42” RCP RT.
23	1783+75	18” RCP LT. / 3’ x 3’ CBC RT.
24	1788+50	3’ x 3’ CBC

Cross Drain No.	Station	Pipe Size and Material
25	1794+60	3’ x 3’ CBC
26	1803+15	3’ x 3’ CBC LT. / 10’ x 4’ CBC RT.
27	1816+85	10’ x 4’ CBC
28	1853+40	10’ X 8’ CBC
29	1854+30	18” RCP
30	1899+60	4’ x 3’ CBC
31	1928+60	15’ x 12’ CBC
32	1928+80	18” RCP
33	1933+90	24” RCP
34	1939+00	Double 42” RCP
35	1984+00	Double 42” RCP
36	2000+00	30” RCP LT./ 36” RCP RT.
37	2008+05	30” RCP
38	2015+15	24” RCP
39	2031+00	30” RCP
40	2058+75	18” RCP
41	2064+00	36” RCP
42	2075+00	24” RCP LT. / 30” RCP RT.
43	2108+00	30” RCP LT. / 24” RCP RT.
44	2130+00	24” RCP
45	2167+45	30” RCP LT. / 24” RCP RT.
46	2179+00	36” RCP
47	2201+90	24” RCP
48	2226+90	18” RCP
49	2231+90	3’ x 3’ CBC
50	2235+40	18” RCP

Cross Drain No.	Station	Pipe Size and Material
51	2251+00	18” RCP
52	2254+40	36” RCP
53	2260+90	36” RCP
54	2277+00	Bridge
55	2281+90	18” RCP
56	2284+90	18” RCP
57	2305+90	30” RCP
58	2327+35	18” RCP LT. / 15” RCP RT.
59	2340+90	18” RCP LT. / 15” RCP RT.
60	2348+90	30” RCP

Notes:

- CBC - Concrete Box Culvert
- RCP - Reinforced Concrete Pipe

4.0 PROPOSED IMPROVEMENTS

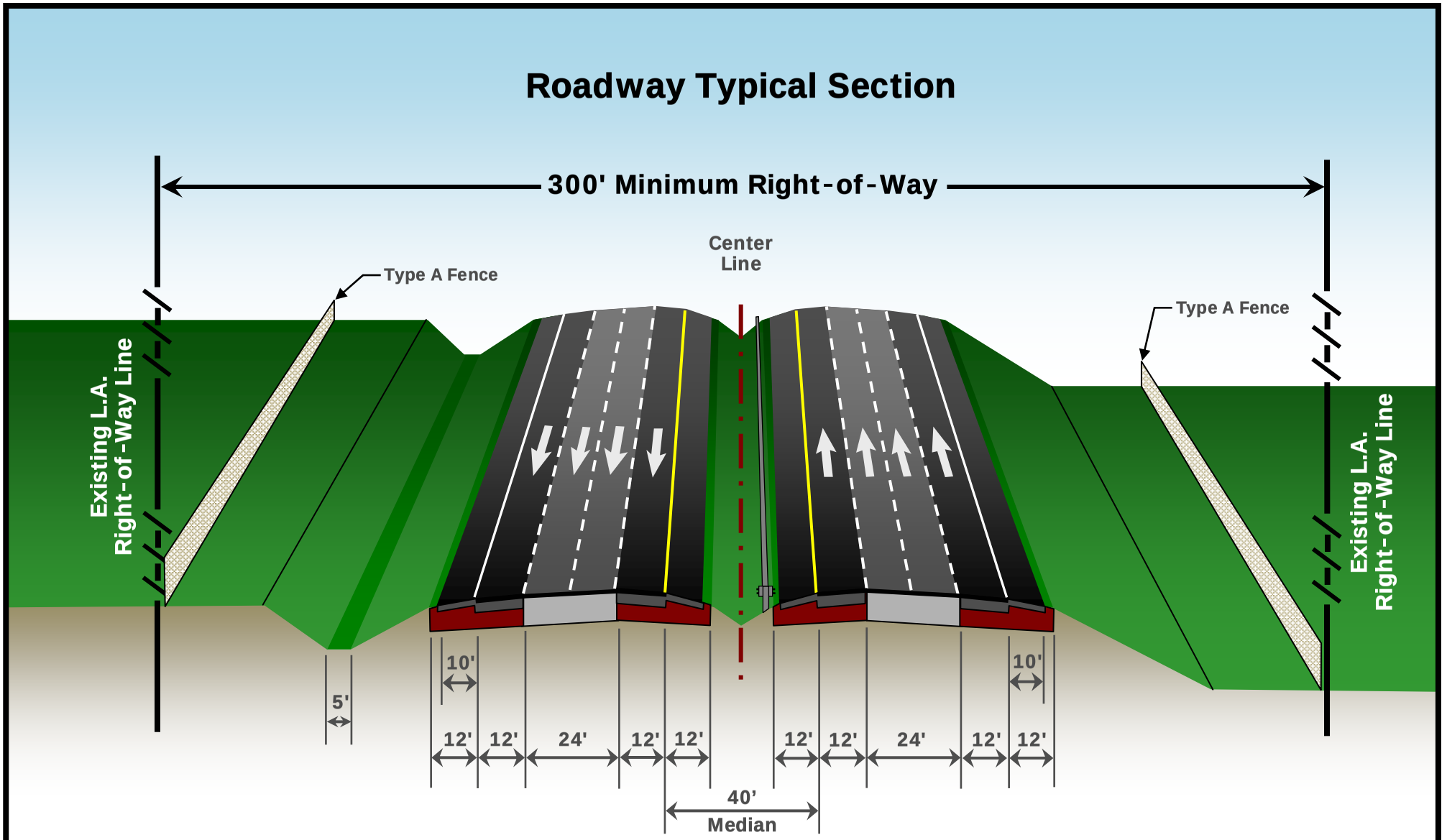
4.1 Proposed Typical Sections

The improvement proposed for I-75 is an eight-lane, divided, rural interstate highway. The widening from four to eight lanes proposes one additional lane in the median and one additional lane to the outside in each direction. Since the remaining median will be 40 feet wide, 24 less than the standard minimum median width for this type of facility, guardrail will be placed along the median and a design variation will be required. The outside border width will also be reduced from 94 feet to 82 feet which will also require a design variation. This typical is shown in Figure 4.

4.2 Recommended Improvement Alternative

The recommended improvement alternative for the I-75 project corridor was developed to avoid or minimize impacts to the surrounding land uses and environmental features. The proposed 8-lane typical section will widen add two additional travel lanes in each direction. These new travel lanes will be added as a widening from the existing pavement.

In general, the existing horizontal and vertical curvature will be retained. Reconstruction of the existing mainline pavement will be necessary at the SR 50 Interchange to construct a new bridge utilizing current vertical curvature design criteria.



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I-75 Mainline Proposed Typical Section
"Inside & Outside" Widening Alternative

Figure 4

Capacity improvements will also be necessary at the CR 41 and SR 50 interchanges. Various ramp alignment shifts will be constructed to accommodate the future increased traffic volumes.

Several bridges carrying minor cross roadways over the interstate must be replaced to accommodate the widened interstate typical section. Varying amounts of approach roadway must be reconstructed to accommodate the new bridge structures.

The recommended improvement alternative is shown on the Concept Plans in Appendix A.

4.3 Proposed Drainage

The roadway will primarily be drained by an open drainage system with ditches and swales draining to a SMF. Treatment and attenuation will be provided within wet or dry detention ponds. There will be one preferred SMF site for each basin.

The post-development peak discharge for the 25-year/24-hour rainfall event will not exceed the pre-development peak discharge, in order to comply with SWFWMD regulations. The SMFs will also comply with FDOT Regulation 14.86 to meet critical duration requirements. A pre-application meeting to discuss drainage and floodplain compensation methodology was held with SWFWMD on March 15 2005. The minutes from this meeting are included in Appendix B. See Section 8.1 for SMF sizing methodology and criteria.

5.0 ENVIRONMENTAL EVALUATION

5.1 Jurisdictional Wetland Involvement

Jurisdictional wetlands adjacent to the right-of-way and within the limited access fence were field verified and delineated on aerial mapping. In addition, water conveyance features such as swales and ditches were mapped as well. Only minor impacts to these resources will be impacted by the proposed mainline improvements. These impacts would include culvert extensions and minor modifications to the drainage systems. Depending on the final selection of the preferred stormwater management facilities and floodplain compensation sites, some wetland impacts may occur. However, avoidance and minimization measures will be taken to minimize impacts to these resources. All unavoidable impacts to wetlands will be mitigated for during the permitting process.

5.2 Cultural Features

5.2.1 Section 4(f) Involvement

There are three Section 4(f) properties along the I-75 corridor: the Withlacoochee State Forest Croom Tract, the Withloacoochee State Trail Park and the Withlacoochee Canoe Trail. In accordance with Section 4(f) of the DOT Act of 1966 (Title 49, U.S.C., Section 1653(f), amended and recodified in Title 49, U.S.C., Section 303, in 1983), the project was examined for possible involvement with Section 4(f) properties.

5.2.2 Archaeological and Historic

A Cultural Resource Assessment Survey Report, January 2006, was prepared for the I-75 PD&E Study. The report included the 98 SMF site alternatives.

The archaeological probability analysis conducted for the project area including the 98 SMF site alternatives concluded that no known sites considered potentially eligible for listing in the National Register of Historic Places (NRHP) are contained within the I-75 PD&E Study project area of potential effect (APE).

The study methodology entailed a review of the available data, including Florida Site File (FSF) records, NRHP listings, relevant cultural resource assessment reports (ACI 1989; Ballo 1988; Deming 1993; 1994a, 1994b; Wharton 1990), US Department of Agriculture (USDA) soil survey maps (Stankey 1982), USGS quadrangle maps, as well as a reconnaissance-level historic structures field survey. Background research indicated an absence of NRHP listed, eligible, or potentially eligible archaeological sites and historic structures within or adjacent to the SMF site alternatives.

The I-75 improvement project will have no involvement with any archaeological sites or historic structures, which are listed, determined eligible, or considered potentially eligible for listing in the NRHP.

5.3 Threatened and Endangered Species

In accordance with Section 7(c) of the Endangered Species act of 1973, as amended, the project corridor was surveyed for the presence of threatened or endangered species. The surveys revealed a pair of nesting Bald Eagles. Area 3a/3bC – is located within the primary zone of this nesting pair of bald eagles. However, Alternative 3a/3bC is a natural depression area and will not require any construction activity, therefore no impact is anticipated. The territory is designated HN-12B with the associated management zones encroaching into the mainline. Impacts within the primary zone will be limited both by the activities involved and time of season. During the construction phase, the *Bald Eagle Monitoring Guidelines* (September 2002 USFWS) will need to be employed to ensure compliance with the Act.

A pair of Florida Sandhill cranes was observed nesting in an herbaceous wetland. The wetland location interfaces with the SMF Alternative 10C. The nesting pair is afforded protection under the Migratory Bird Treaty Act. Coordination with the U.S. Fish and Wildlife Service will need to be initiated if this site is selected, however at this time, this alternative is not the preferred SMF.

5.4 Hazardous Materials and Petroleum Site Data

A Level I Contamination Screening of the I-75 project corridor was conducted to determine the potential for contamination for the SMF site alternatives and FPC sites.

A contamination screening evaluation was prepared pursuant to the FHWA Technical Advisory T 6640.8A, dated October 30, 1987, and in accordance with the FDOT PD&E Manual, Part 2, Chapter 22, dated December 10, 2003. The purpose of the evaluation was to present the preliminary findings of a literature and file review of the potential for finding

hazardous materials and petroleum contamination on parcels along the proposed alignment, which may affect the proposed improvements.

The SMF alternatives have been assigned a hazardous materials potential rating and are summarized in Tables 5 through 36 in Section 8.0. The FDOT hazardous materials rating system was used and include NO, LOW, MEDIUM, and HIGH. All of the alternative SMF sites had a No rating:

6.0 FLOODPLAINS/FLOODWAYS

6.1 Flooding History

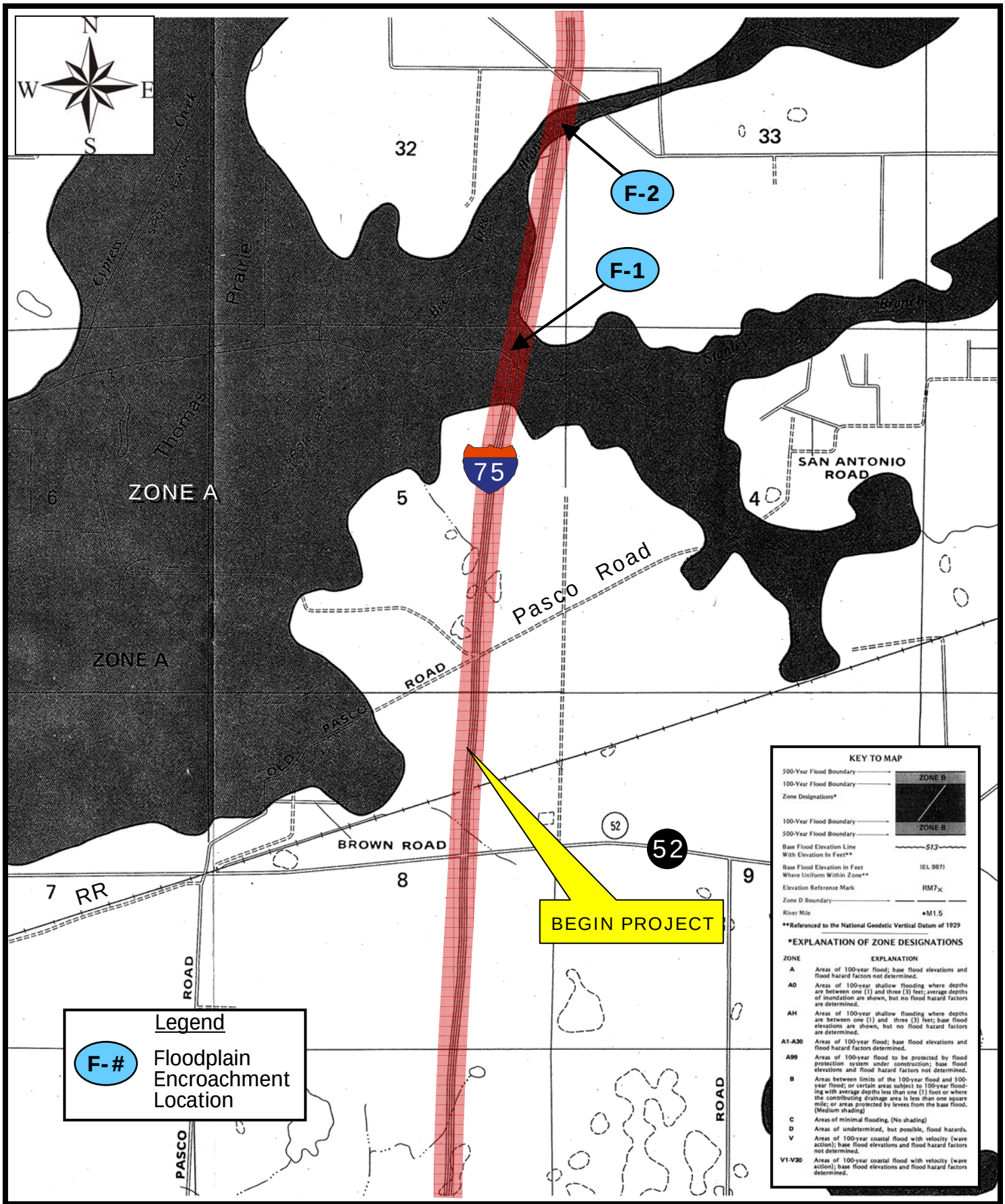
FDOT drainage maps, USGS Quadrangle maps, SWFWMD topographic maps, and FEMA FIRMs were used to identify flood-prone areas within the I-75 project corridor. Field inspections were conducted in July 2005 to identify obvious drainage problems. Additionally, people knowledgeable about local drainage conditions (FDOT maintenance personnel) were interviewed in September 2005 and February 2006. This information is provided in Appendix B and summarized as follows: No flooding problems associated with existing drainage conditions have been identified for the length of this project.

6.2 Flood Insurance Rate Maps

FEMA has prepared FIRMs along the I-75 project corridor in Pasco County dated November 18, 1981 and September 30, 1982. FIRMs along I-75 for Hernando County are dated April 17, 1984. FIRMs for the remainder of the project corridor in Sumter County are dated March 15, 1982. These FEMA Flood Maps are shown in Figures 5a through 5f.

6.3 Flood Zone Description

FEMA has designated 100-year base floodplain areas in eight locations along the I-75 project corridor as shown in the FEMA figures below. After further investigation, only three locations resulted in an encroachment to the 100-year floodplain as summarized in Table 3 and five locations did not result in an encroachment. Four of the five areas that did not result in any encroachment into the 100-year floodplain (F-4, F-5, F-6 and F-8) since the I-75 alignment is above the estimated 100-year floodplain elevation. The fifth potential area of encroachment (location F-7) at Sta. 1817+00 (LT) is very minimal, 0.04 acre which is less than 2 percent of the total 100-year floodplain area and therefore not considered. In this case, avoidance measures can be used to eliminate any impacts and/or floodplain compensation can be provided in the preferred SMF for this basin if necessary. Additionally, avoidance measures will be taken in the design phase to minimize any impacts to the 100-year floodplain by steepening the side slopes or possibly adding retaining walls in the area of Moody Lake, for example. The areas of encroachment to the 100-year floodplain are designated as Zone A. Zone A is defined as special flood hazard area inundated by 100-year flood with no base flood elevations determined. The remainder of the project is designated as Zone X. Zone X is described as areas determined to be outside the 500-year floodplain.

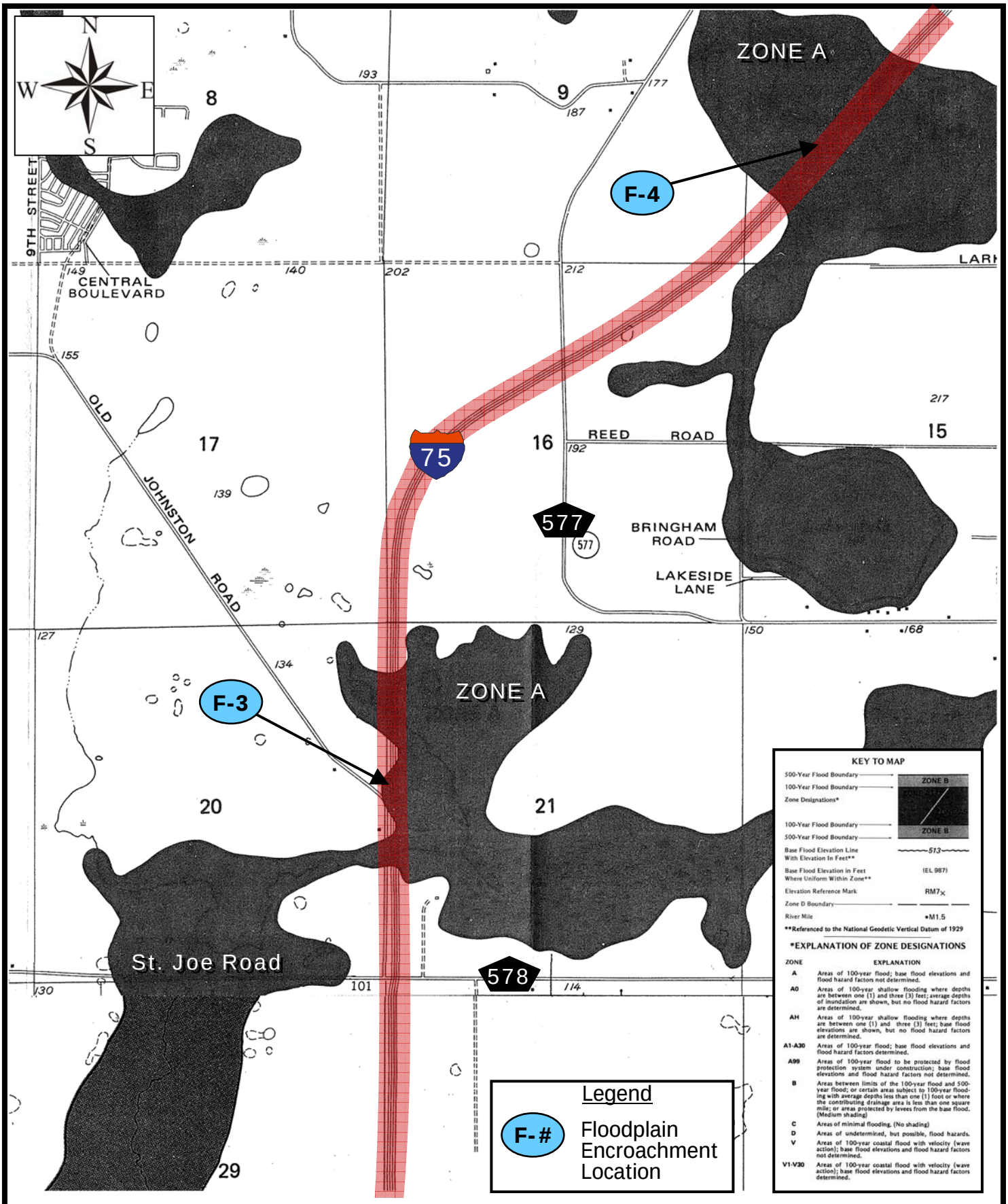


I-75 PD&E Study

From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
FAP No.: 0751- 120I

FEMA Flood Maps

Figure 5a



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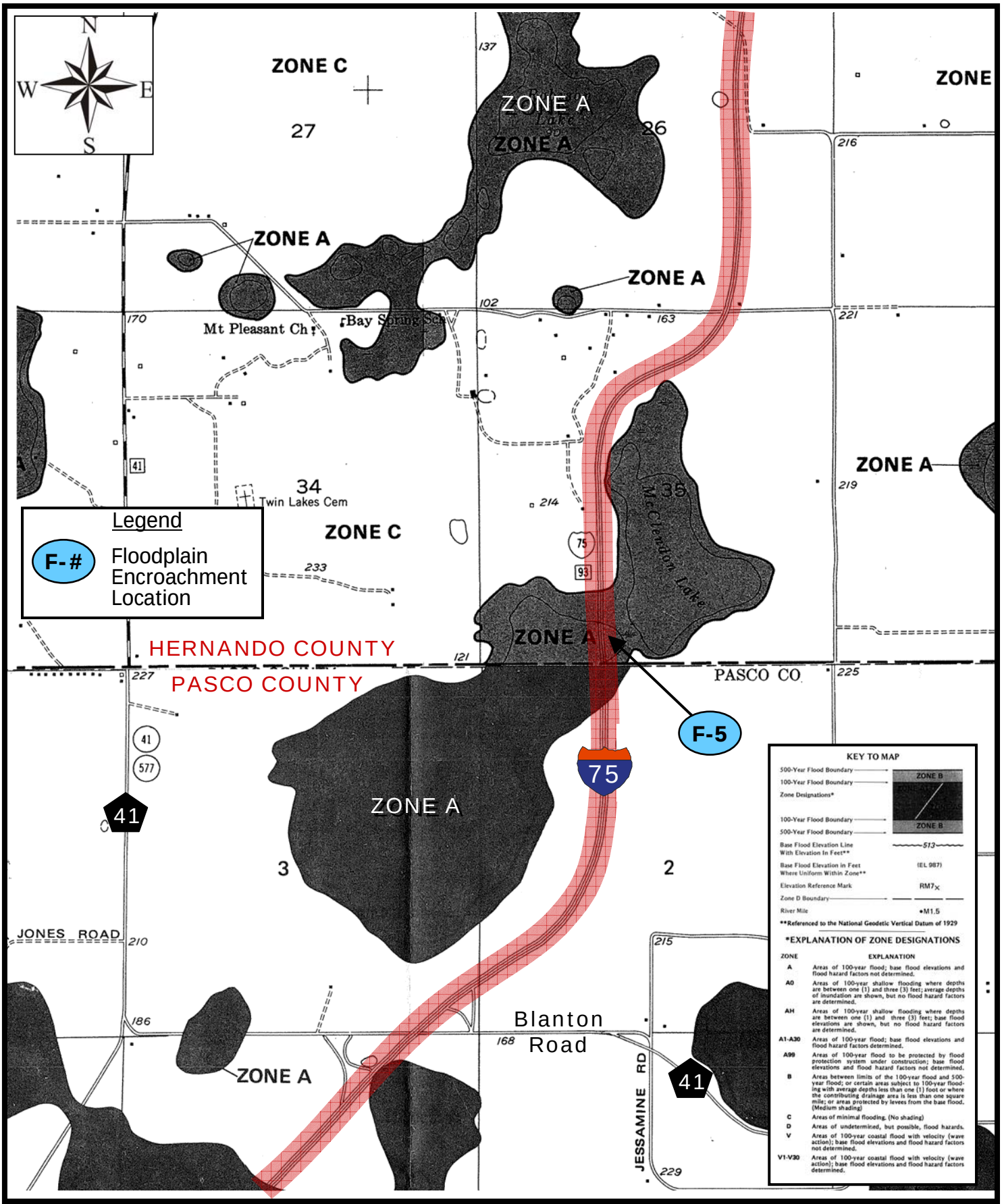
From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
FAP No.: 0751- 120I

FEMA Flood Maps

Figure 5b



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From N. of SR 52 to S. of CR 476B
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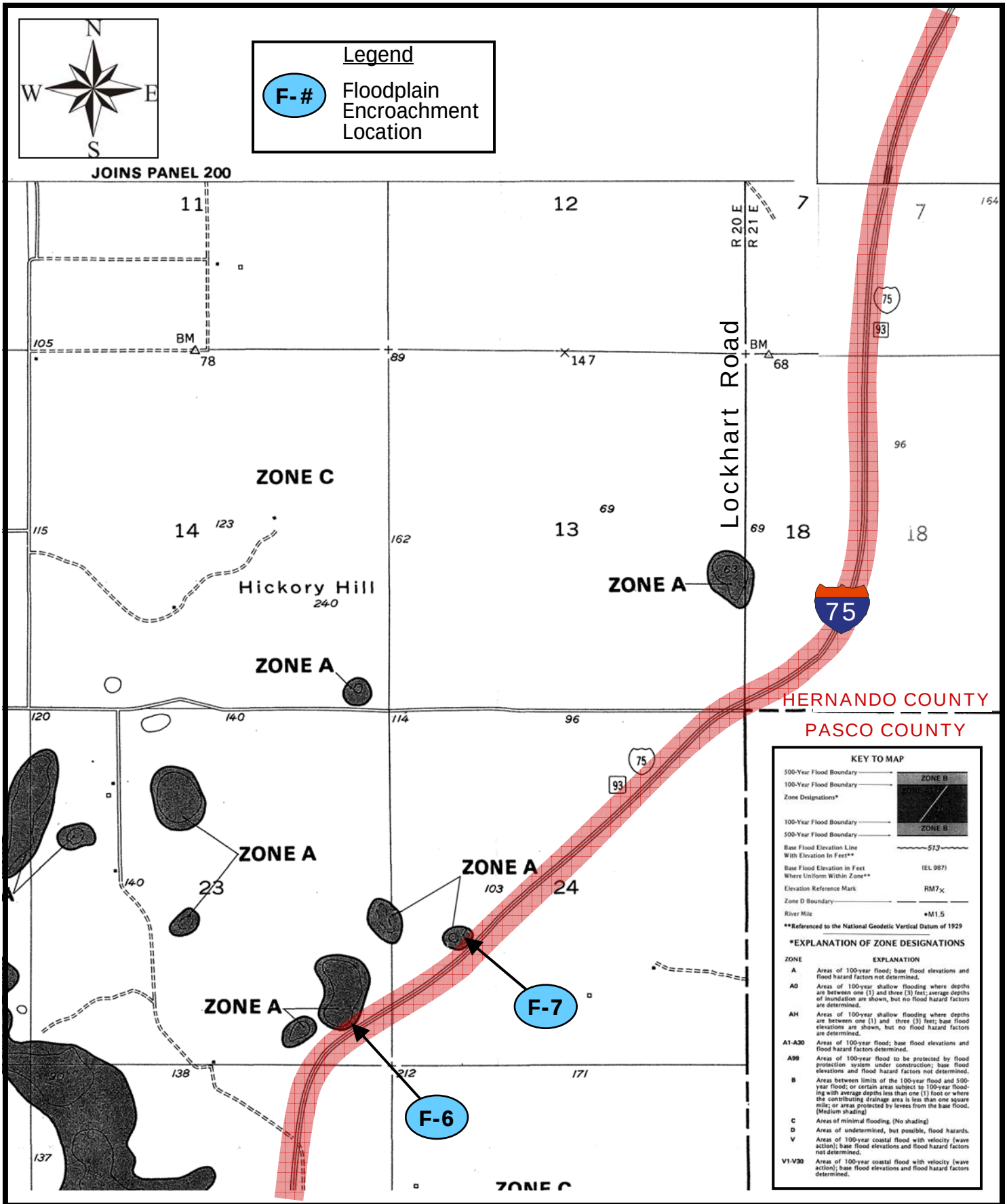
WPI Seg. No.: 411014 1
FAP No.: 0751- 120I

FEMA Flood Maps

Figure 5c



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From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
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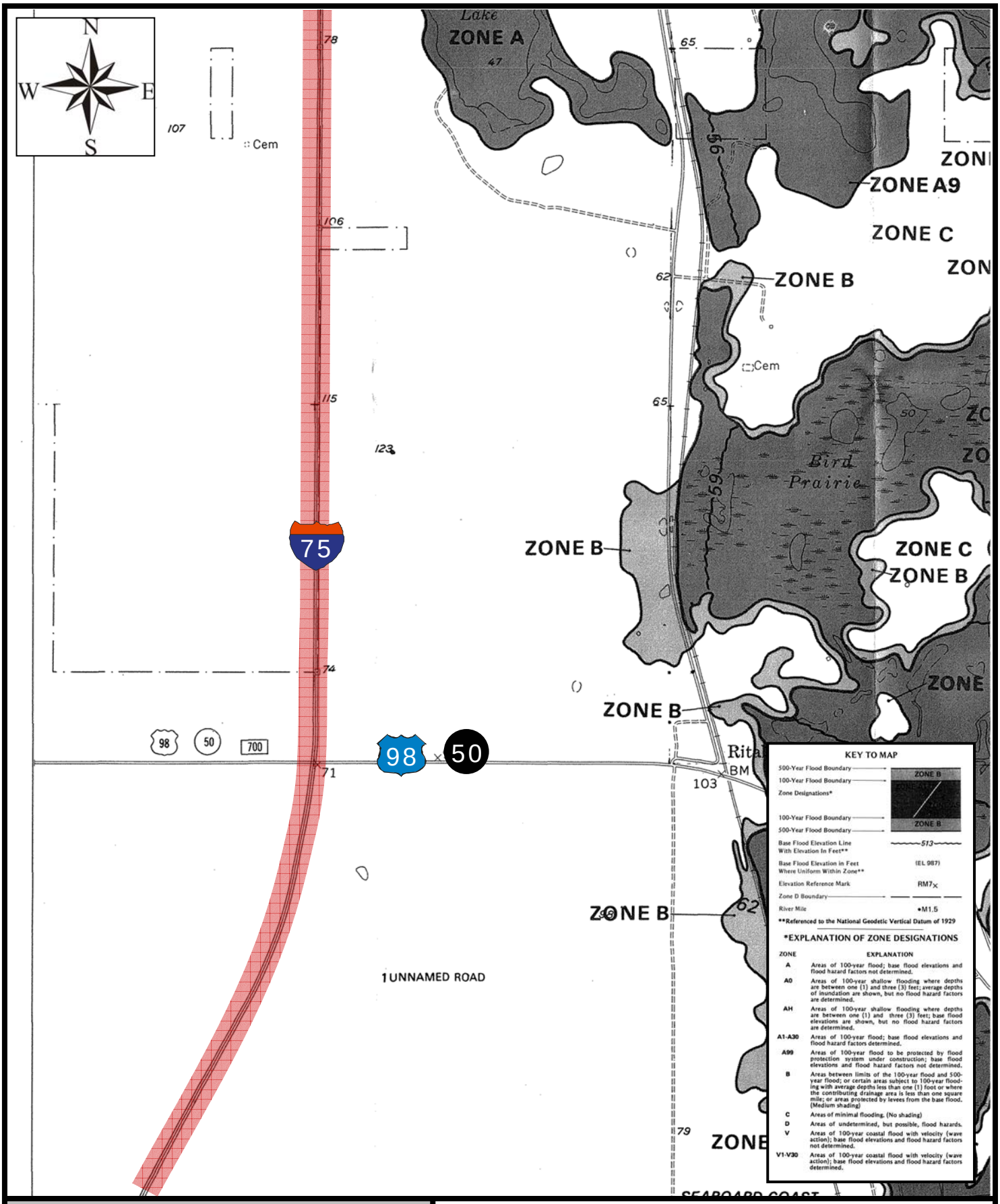
FEMA Flood Maps

Figure 5d



I-75 PD&E Study

From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
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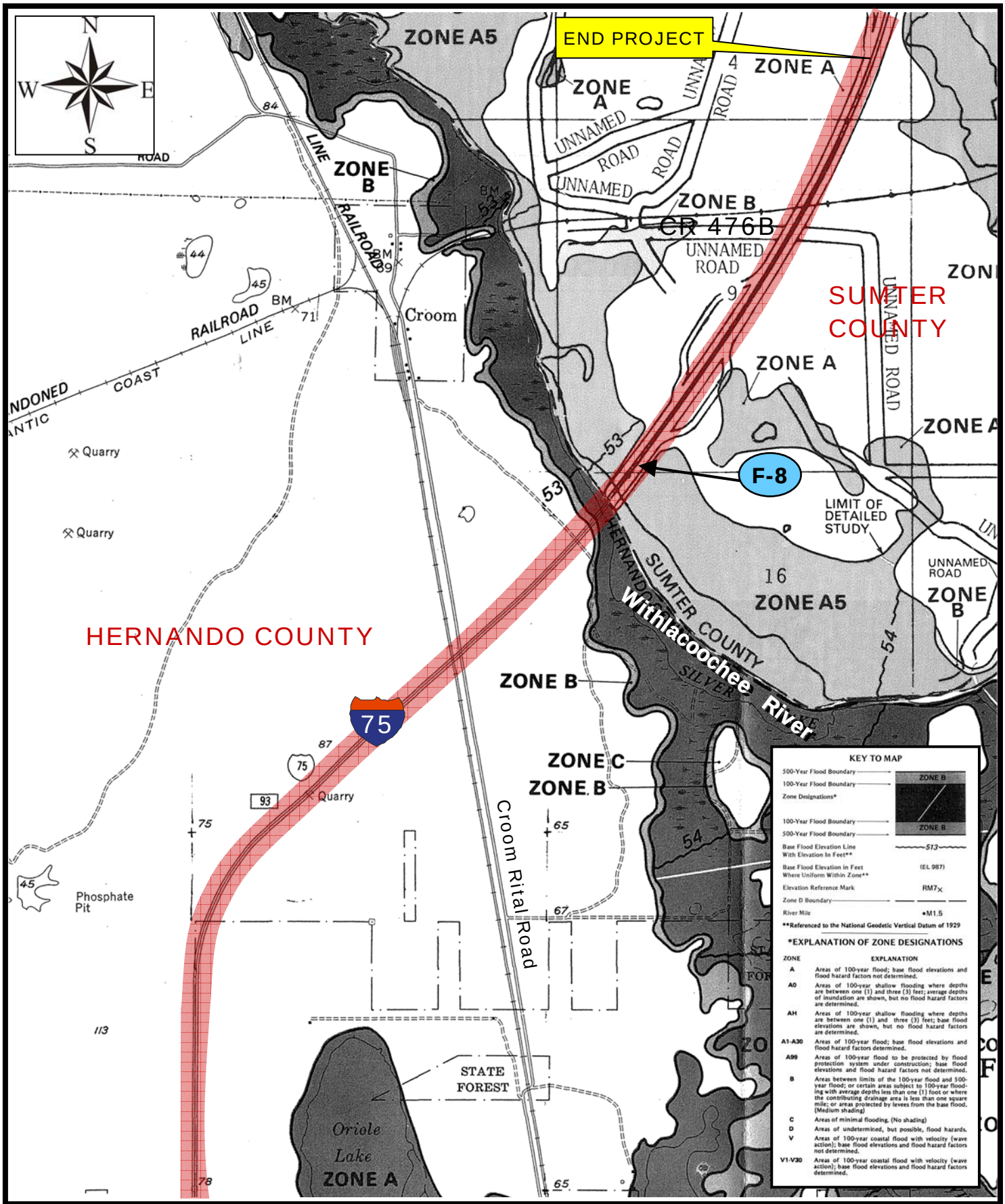
FEMA Flood Maps

Figure 5e



I-75 PD&E Study

From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
FAP No.: 0751- 120I

FEMA Flood Maps

Figure 5f

6.4 Floodplain Compensation

The estimated 100-year floodplain elevations were used to determine the estimated floodplain encroachment for floodplain compensation site sizing. The 100-year floodplain delineation and the recommended alignment were delineated on SWFWMD 1" = 200' aerial topographic maps to estimate encroachment volume for the proposed project. The 100-year floodplain elevations and respective estimated floodplain encroachment volumes are summarized in Table 3. The refined encroachment volumes will be determined during the subsequent design phase when more detailed survey and SMF sizing information are available.

Table 3
Floodplain Encroachment Summary

Location	Estimated 100-Year Floodplain Elevation (ft)	Estimated Floodplain Encroachment Volume (ac-ft)
F-1	90	0.66
F-2	95	0.18
F-3	106	1.51
Total		2.35

6.5 Regulatory Floodways

There are no regulatory floodways within the I-75 project corridor.

7.0 GEOTECHNICAL DATA

A geotechnical review was performed as part of this PD&E Study. The purpose of this review was to obtain preliminary information concerning the general subsurface soil and groundwater conditions along the project alignment and also to characterize the general subsurface stratigraphy, assess the suitability of the project site for the proposed improvements, identify constraints or limitations that the subsurface conditions may impose on the planned construction, and provide preliminary geotechnical recommendations to guide the design and construction of the project. This review included performing a field reconnaissance and a research of existing data and reference materials such as aerial photographs, USDA SCS Soil Survey maps, USGS topographic maps, existing plans, design engineering information for the past construction projects within the study area, and records of sinkhole activity. The findings of this review were presented in a separate document, the Preliminary Geotechnical Report, prepared in August 2005.

To generally assess the near-surface conditions within the limits of the project, the soil maps provided in the "Soil Survey of Pasco, Hernando and Sumter Counties, Florida" were reviewed. The SCS maps are presented on Figures 6a through 6d.

In general, the surficial soils consist of poorly graded fine sands, silty sands and silty to clayey fine sands underlain by clayey fine sands and clays. Some clayey fine sands and clays are encountered at shallow depths of less than 30 inches below the ground surface. Organic soils (muck) may also be encountered in some areas. Seasonal high water levels along I-75 may range from 2.0 feet above the natural ground surface to greater than 6.0 feet below the natural ground surface. Surface and/or subsurface boulders may also be encountered in a few areas near the northern end of the project alignment. The soil groups are summarized in Table 4.

Table 4
Summary of Soil Groups

Soil Name (Map Unit No.)	Depth (inches)	Classification		Permeability (in/hour)	Seasonal High Water Table Depth (ft)	Hydrologic Group
		AASHTO[1] Group	USCS[2] Group			
Pasco County						
Wachula Fine Sand (1)	0-8 8-19 19-26 26-34 34-80	A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-2-4, A-2-6, A-4, A-6	SP-SM SP-SM, SM SP-SM, SM SP-SM, SM SM, SM-SC, SC	6-20 6-20 0.6-6.0 6-20 0.6-6.0	0.0 – 1.0	B/D
Pomona (2)	0-6 6-22 22-36 36-52 52-60	A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-2-4, A-4, A-6	SP-SM SP, SP-SM, SM SP-SM, SM SP, SP-SM SC-SM-SC, SM	6-20 6-20 0.6-6.0 6-20 0.2-0.6	0 – 1.0	B/D
Tavares Sand (6)	0-86	A-3	SP, SP-SM	>20	3.5 – 6.0	A
Sparr Fine Sand 0 to 5% Slopes (7)	0-6 6-43 43-48 48-59 59-80	A-3, A-2-4 A-3, A-2-4 A-2 A-2, A-4, A-6 A-2, A-4, A-6	SP-SM SP-SM SM-SC, SC, SM SC, SM-SC SC, SM-SC, SM	6-20 6-20 0.6-2.0 0.6-2.0 0.6-2.0	1.5 – 3.5	C
Zephyr Muck (16)	13-0 0-18 18-48 48-67	A-8 A-3, A-2-4 A-2-4, A-2-6 A-2-4, A-4	PT SP-SM,SM SM, SM-SC, SC SM, SM-SC, SC	6-20 6-20 0.06-0.2 0.6-6.0	+2.0 – 1.0	D
Basinger (23)	0-10 10-30 3-80	A-3 A-3, A-2-4 A-3, A-2-4	SP SP, SP-SM SP, SP-SM	>20 >20 >20	+2.0 – 1.0	B/D
Pits (28)	--	--	--	--	--	--
Pompano Fine Sand (34)	0-80	A-3, A-2-4	SP, SP-SM	>20	0.0 – 1.0	B/D
Arredondo (44)	0-52 52-55 55-80	A-2-4, A-3 A-2-4 A-2-4, A-2-6 A-4, A-6	SP-SM, SM SM, SM-SC SC, SM-SC	6-20 2.0-6.0 0.6-6.0	0 – 1.0	B/D

Soil Name (Map Unit No.)	Depth (inches)	Classification		Permeability (in/hour)	Seasonal High Water Table Depth (ft)	Hydrologic Group
		AASHTO[1] Group	USCS[2] Group			
Lochloosa Fine Sand 0-5% Slopes (48)	0-36 36-42 42-63 63-72 72-80	A-2-4, A-3 A-2-4 A-2, A-6, A-4 A-6, A-7 A-2, A-4, A-6	SP-SM, SM SM, SM-SC SC, SC-SM SC SC, SM-SC	6-20 2.0-6.0 0.6-2.0 0.6-2.0 0.6-2.0	2.5 –- 5.0	C
Blichton Fine Sand 0 to 2% Slopes (49)	0-22 22-28 25-63 63-80	A-2-4, A-3 A-2-4 A-6 A-2-4	SP-SM, SM SM, SM-SC SC SM-SC, SM	6-20 2.0-6.0 0.2-0.6 2.0-6.0	0 – 1.0	D
Blichton Fine Sand, 2 to 5% Slopes (50)	0-38 38-44 44-50 50-62 62-80	A-2-4, A-3 A-2-4 A-6 A-2, A-6, A-7 A-2-4	SP-SM, SM SM, SM-SC SC SC SM-SC, SM	6-20 2.0-6.0 0.2-0.6 0.2-0.6 2.0-6.0	0 – 1.0	D
Sparr Fine Sand 5 to 8% Slopes (53)	0-6 6-57 57-61 61-69 69-80	A-3, A--2-4 A-3, A-2-4 A-2 A-2, A-4, A-6 A-2, A-4, A-6	SP-SM SP-SM SM-SC, SC, SM SC, SM-SC SC, SM-SC, SM	6-20 6-20 0.6-2.0 0.6-2.0 0.6-2.0	1.5 – 3.5	C
Flemington Variant Fine Sand, 2 to 5% Slopes (54)	0-5 5-80	A-3, A-2-4 A-7	SP-SM, SM SC, CL, CH	2.0-20 <0.06	0.0 – 2.5	D
Newnan Fine Sand, 0 to 5% Slopes (59)	0-22 22-33 33-44 44-80	A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-2-4, A-4, A-6	SP, SP-SM SP-SM, SM SP, SP-SM, SM SM, SM-SC, SC	6-20 2.0-20 6-20 0.06-0.6	1.5 – 2.5	C
Palmetto Sellers (60)	0-10 10-46 46-80	A-3, A-2-4 A-3, A-2-4 A-2-4, A-2-6	SP, SP-SM SP-SM SM, SM-SC, SC	6.0-20 6.0-20 0.2-0.6	+2.0– 0	B/D
Hernando County						
Arredondo Fine Sand, 0 to 5% Slopes (6)	0-62 62-69 69-99	A-2-4, A-3 A-2-4 A-2-6, A-6	SP-SM, SM SM, SM-SC SC	6-20 2.0-6.0 0.6-6.0	>6.0	A
Arredondo Fine Sand, 5 to 8% Slopes (7)	0-62 62-69 69-99	A-2-4, A-3 A-2-4 A-2-6, A-6	SP-SM, SM SM, SM-SC SC	6-20 2.0-6.0 0.6-6.0	>6.0	A
Basinger (10)	0-80	A-3, A-2-4	SP, SP-SM	>20	+2.0 – 1.0	A/D
Blichton Loamy Fine Sand, 2 to 5% Slopes (12)	0-28 28-34 34-63 63-75	A-2-4, A-3 A-2-4, A-6 A-6 A-6, A-7	SP-SM, SM SC SC SC, CL, CH	6-20 2.0-6.0 0.6-2.0 0.2-0.6	0.0 – 1.0	D
Candler Fine Sand, 0 to 5% Slopes (14)	0-48 48-80	A-3 A-3, A-2-4	SP, SP-SM SP-SM	>20 6-20	>6.0	A

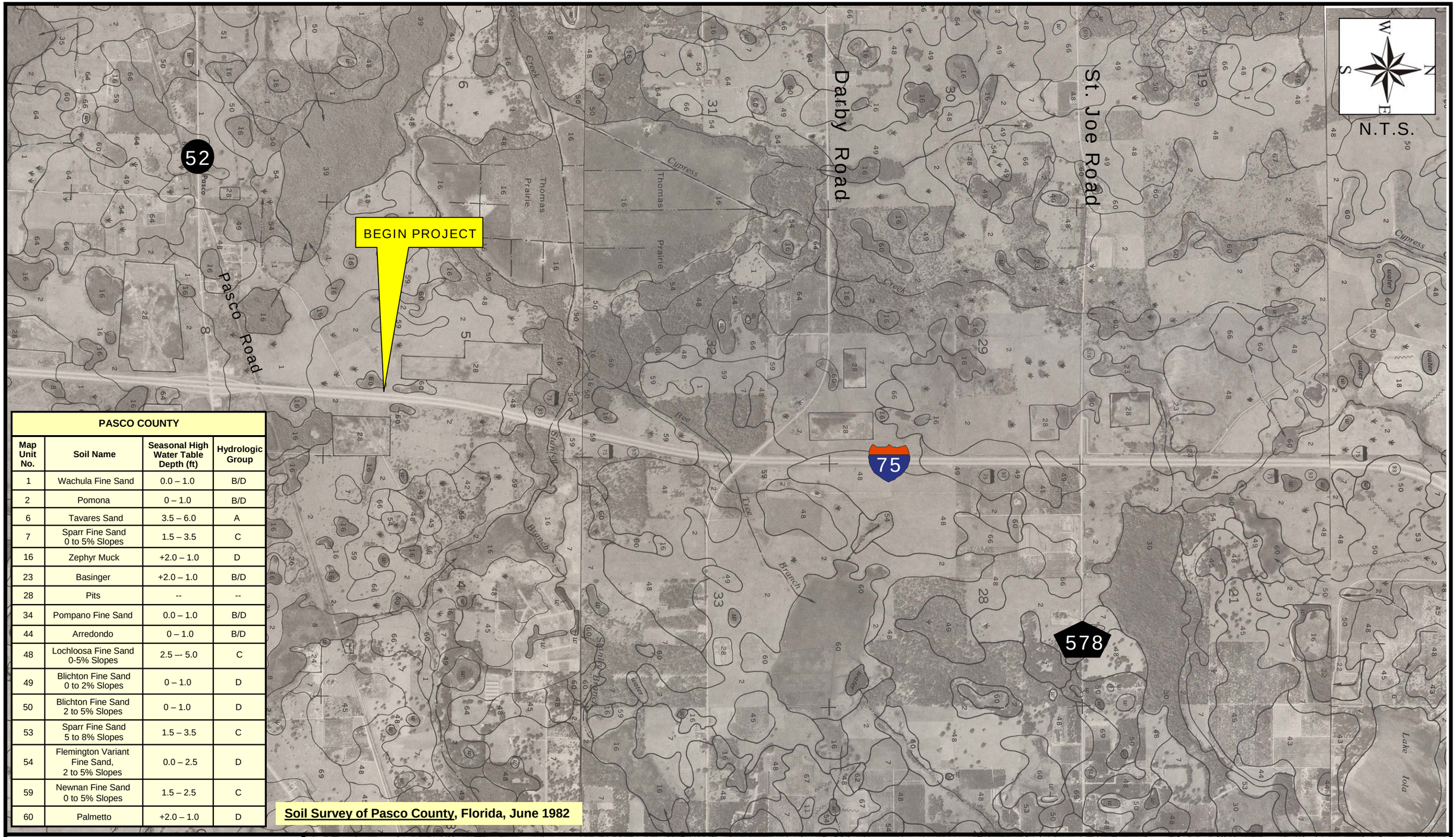
Soil Name (Map Unit No.)	Depth (inches)	Classification		Permeability (in/hour)	Seasonal High Water Table Depth (ft)	Hydrologic Group
		AASHTO[1] Group	USCS[2] Group			
Candler Fine Sand, 5 to 8% Slopes (15)	0-48 48-80	A-3 A-3, A-2-4	SP, SP-SM SP-SM	>20 6-20	>6.0	A
Flemington Fine Sandy Loam, 0 to 2% Slopes (20)	0-5 5-36 36-66 66-81	A-2-4 A-7 A-7 A-7	SM SC, CH, CL CH, MH, CL CH, MH	2.0-20 <0.06 <0.06 <0.06	0.0 – 2.5	D
Floridana-Basinger Association, Occasionally Flooded (24)	Floridana 0-16 16-27 27-80 Bassinger 0-80	Floridana A-3,A-2-4 A-3 A-2-4, A-2-6 Bassinger A-3, A-2-4	Floridana SP-SM, SM SP, SP-SM SM-SC, SC Bassinger SP, SP-SM	Floridana 6-20 6-20 0.6-2.0 Bassinger >20	0.0 – 1.0	A/D
Kanapaha (28)	0-50 50-56 56-65	A-3, A-2-4 A-2-4 A-2-4, A-2-6, A-4, A-6	SP-SM SM-SC, SC SC, SM-SC	6.0-20 0.6-2.0 0.2-0.6	0.0 – 1.0	A/D
Kendrick Fine Sand 0 to 5% Slopes (29)	0-28 28-34 34-63 63-80	A-3, A-2-4 A-2-6, A-2-4 A-2-6, A-6 A-2-6, A-2-4	SP-SM SC, SM-SC SC SC, SM-SC	6-20 0.6-2.0 0.6-2.0 0.6-2.0	>6.0	A
Lake Fine Sand 0 to 5% Slopes (31)	0-82	A-3, A-2-4	SP-SM	6-20	>6.0	A
Nobleton fine Sand, 0 to 5% Slopes (36)	0-33 33-37 37-60 60-80 80-85	A-2-4 A-2-6,A-6 A-6, A-7 A-2-6,A-6 A-2-4,A-2-6 A-6	SP-SM, SM SC SC, CL, CH SC SM, SM-SC, SC	6-20 0.2-2.0 0.2-0.6 0.2-2.0 0.2-6.0	1.5 – 3.5	A
Pits (41)	--	--	--	--	--	--
Sparr Fine Sand 0 to 5% Slopes (47)	0-61 61-64 64-80	A-3, A-2-4 A-2-4 A-2-4, A-2-6 A-4, A-6	SP-SM SM-SC, SM SC, SM-SC	6-20 0.6-2.0 0.6-2.0	1.5 – 3.5	A
Sparr Fine Sand 5 to 8% Slopes (48)	0-61 61-64 64-80	A-3, A-2-4 A-2-4 A-2-4, A-2-6 A-4, A-6	SP-SM SM-SC, SM SC, SM-SC	6-20 0.6-2.0 0.6-2.0	1.5 – 3.5	A
Tavares (49)	0-80	A-3	SP, SP-SM	>20	3.5 – 6.0	A

Soil Name (Map Unit No.)	Depth (inches)	Classification		Permeability (in/hour)	Seasonal High Water Table Depth (ft)	Hydrologic Group
		AASHTO[1] Group	USCS[2] Group			
Wauchula (52)	0-8 8-24 24-31 31-38 38-80	A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-3, A-2-4 A-2-4,A-2-6, A-4, A-6	SP-SM SP-SM SP-SM, SM SP-SM, SM SM, SM-SC, SC	6-20 6-20 0.6-6.0 6-20 0.6-6.0	0.0 – 1.0	B/D
Sumter County						
Candler Fine Sand, 0 to 5% Slopes (4)	0-8 8-50 50-80	A-3 A-3 A-3, A-2-4	SP, SP-SM SP, SP-SM SP-SM	6-20 6-20 6-20	>6.0	A
Candler Fine Sand, 5 to 8% Slopes (5)	0-6 6-56 56-80	A-3 A-3 A-3, A-2-4	SP, SP-SM SP, SP-SM SP-SM	6-20	>6.0	A
Lake (8)	0-80	A-3, A-2-4	SP-SM	>6.0	>6.0	A
Adamsville (15)	0-5 5-80	A-3, A-2-4 A-3, A-2-4	SP-SM SP-SM, SM	6.0-20 6.0-20	2.0 – 3.5	C
EauGallie Fine Sand, Bouldery Subsurface (21)	0-8 8-25 25-36 36-57 57-80	A-3 A-3 A-3, A-2-4 A-3, A-2-4 A-2-4, A-2-6	SP SP SP-SM,SM SP, SP-SM SM, SM-SC, SC	6-20 6-20 0.6-6 6-20 0.2-0.6	0 – 1.0	B/D
Sumterville Fine Sand, Bouldery Subsurface, 0 to 5% Slopes (27)	0-9 9-29 29-80	A-3, A-2-4 A-3, A-2-4 A-7	SP-SM, SM SP-SM, SM CL, CH	6-20 6-20 0.06-0.2	1.5 – 3.0	C
Nitaw Muck, Frequently Flooded (29)	0-5 5-12 12-65 65-80	A-8 A-3, A-2-4 A-7 A-3, A-2-4	PT SP-SM, SM CH, CL SP, SP-SM,SM SM-SC	6-20 6-20 0.06-0.2 6-20	0 – 1.0	D
Pits (51)	--	--	--	--	--	--

Source: Soil Survey of Pasco County, June 1982, Soil Survey of Hernando County, July 1977 and Soil Survey of Sumter County, April, 1984.

Notes: [1]American Association of State Highway and Transportation Officials
[2]Unified Soil Classification System
[3]SP - Poorly graded sand (with gravel)
[4]SP-SM - Poorly graded sand (with sand and gravel)
[5] SM - Silty sand (with gravel)

A copy of the soil survey map for the I-75 project corridor is shown in Figures 6.



PASCO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
1	Wachula Fine Sand	0.0 – 1.0	B/D
2	Pomona	0 – 1.0	B/D
6	Tavares Sand	3.5 – 6.0	A
7	Sparr Fine Sand 0 to 5% Slopes	1.5 – 3.5	C
16	Zephyr Muck	+2.0 – 1.0	D
23	Basinger	+2.0 – 1.0	B/D
28	Pits	--	--
34	Pompano Fine Sand	0.0 – 1.0	B/D
44	Arredondo	0 – 1.0	B/D
48	Lochloosa Fine Sand 0-5% Slopes	2.5 –- 5.0	C
49	Blichton Fine Sand 0 to 2% Slopes	0 – 1.0	D
50	Blichton Fine Sand 2 to 5% Slopes	0 – 1.0	D
53	Sparr Fine Sand 5 to 8% Slopes	1.5 – 3.5	C
54	Flemington Variant Fine Sand, 2 to 5% Slopes	0.0 – 2.5	D
59	Newnan Fine Sand 0 to 5% Slopes	1.5 – 2.5	C
60	Palmetto	+2.0 – 1.0	D

Soil Survey of Pasco County, Florida, June 1982

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From N. of SR 52 to S. of CR 476B
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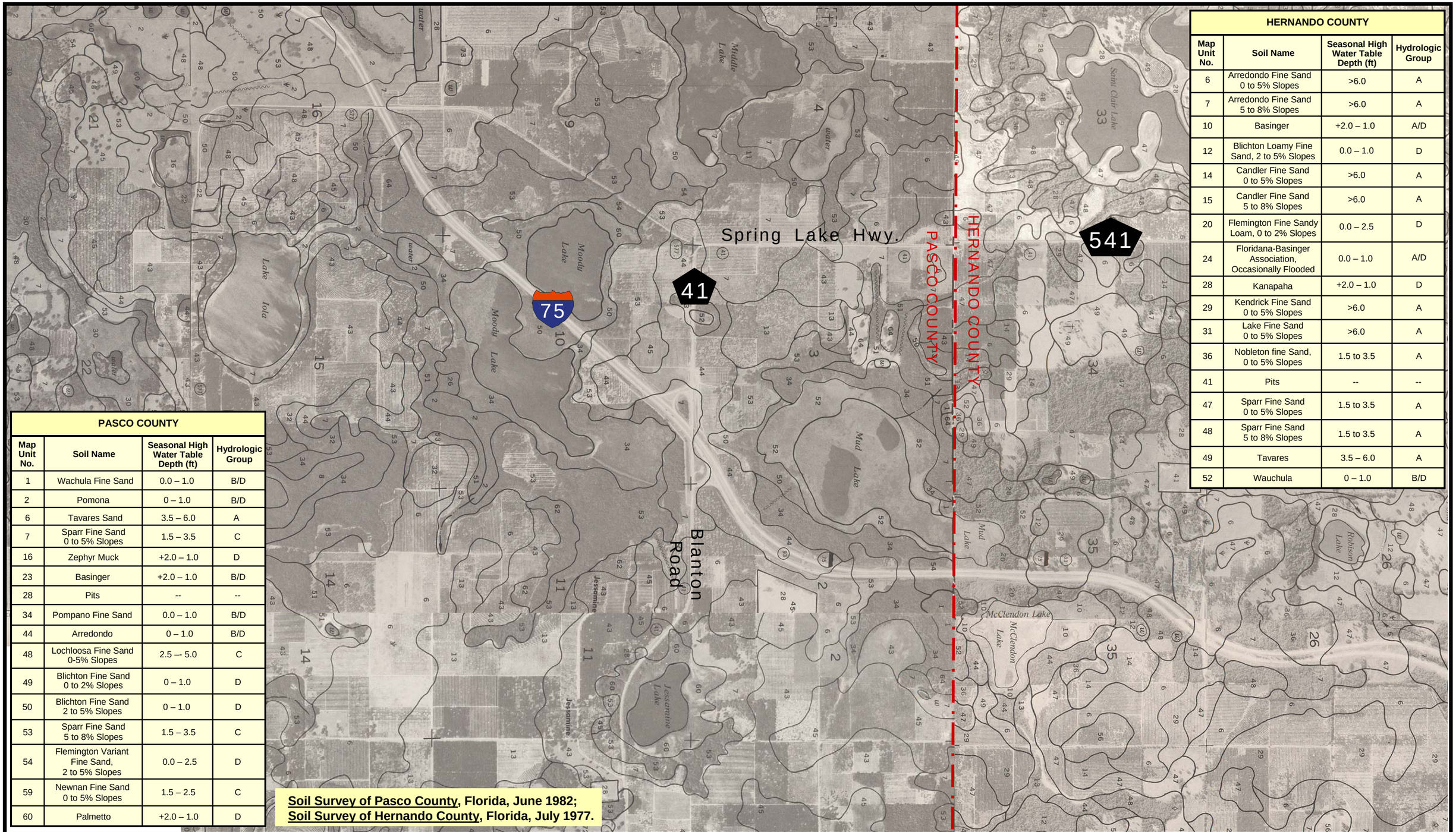
Soils Map

Figure 6a



PASCO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
1	Wachula Fine Sand	0.0 – 1.0	B/D
2	Pomona	0 – 1.0	B/D
6	Tavares Sand	3.5 – 6.0	A
7	Sparr Fine Sand 0 to 5% Slopes	1.5 – 3.5	C
16	Zephyr Muck	+2.0 – 1.0	D
23	Basinger	+2.0 – 1.0	B/D
28	Pits	--	--
34	Pompano Fine Sand	0.0 – 1.0	B/D
44	Arredondo	0 – 1.0	B/D
48	Lochloosa Fine Sand 0-5% Slopes	2.5 –- 5.0	C
49	Blichton Fine Sand 0 to 2% Slopes	0 – 1.0	D
50	Blichton Fine Sand 2 to 5% Slopes	0 – 1.0	D
53	Sparr Fine Sand 5 to 8% Slopes	1.5 – 3.5	C
54	Flemington Variant Fine Sand, 2 to 5% Slopes	0.0 – 2.5	D
59	Newnan Fine Sand 0 to 5% Slopes	1.5 – 2.5	C
60	Palmetto	+2.0 – 1.0	D

HERNANDO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
6	Arredondo Fine Sand 0 to 5% Slopes	>6.0	A
7	Arredondo Fine Sand 5 to 8% Slopes	>6.0	A
10	Basinger	+2.0 – 1.0	A/D
12	Blichton Loamy Fine Sand, 2 to 5% Slopes	0.0 – 1.0	D
14	Candler Fine Sand 0 to 5% Slopes	>6.0	A
15	Candler Fine Sand 5 to 8% Slopes	>6.0	A
20	Flemington Fine Sandy Loam, 0 to 2% Slopes	0.0 – 2.5	D
24	Floridana-Basinger Association, Occasionally Flooded	0.0 – 1.0	A/D
28	Kanapaha	+2.0 – 1.0	D
29	Kendrick Fine Sand 0 to 5% Slopes	>6.0	A
31	Lake Fine Sand 0 to 5% Slopes	>6.0	A
36	Nobleton fine Sand, 0 to 5% Slopes	1.5 to 3.5	A
41	Pits	--	--
47	Sparr Fine Sand 0 to 5% Slopes	1.5 to 3.5	A
48	Sparr Fine Sand 5 to 8% Slopes	1.5 to 3.5	A
49	Tavares	3.5 – 6.0	A
52	Wauchula	0 – 1.0	B/D

Soil Survey of Pasco County, Florida, June 1982;
Soil Survey of Hernando County, Florida, July 1977.

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From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
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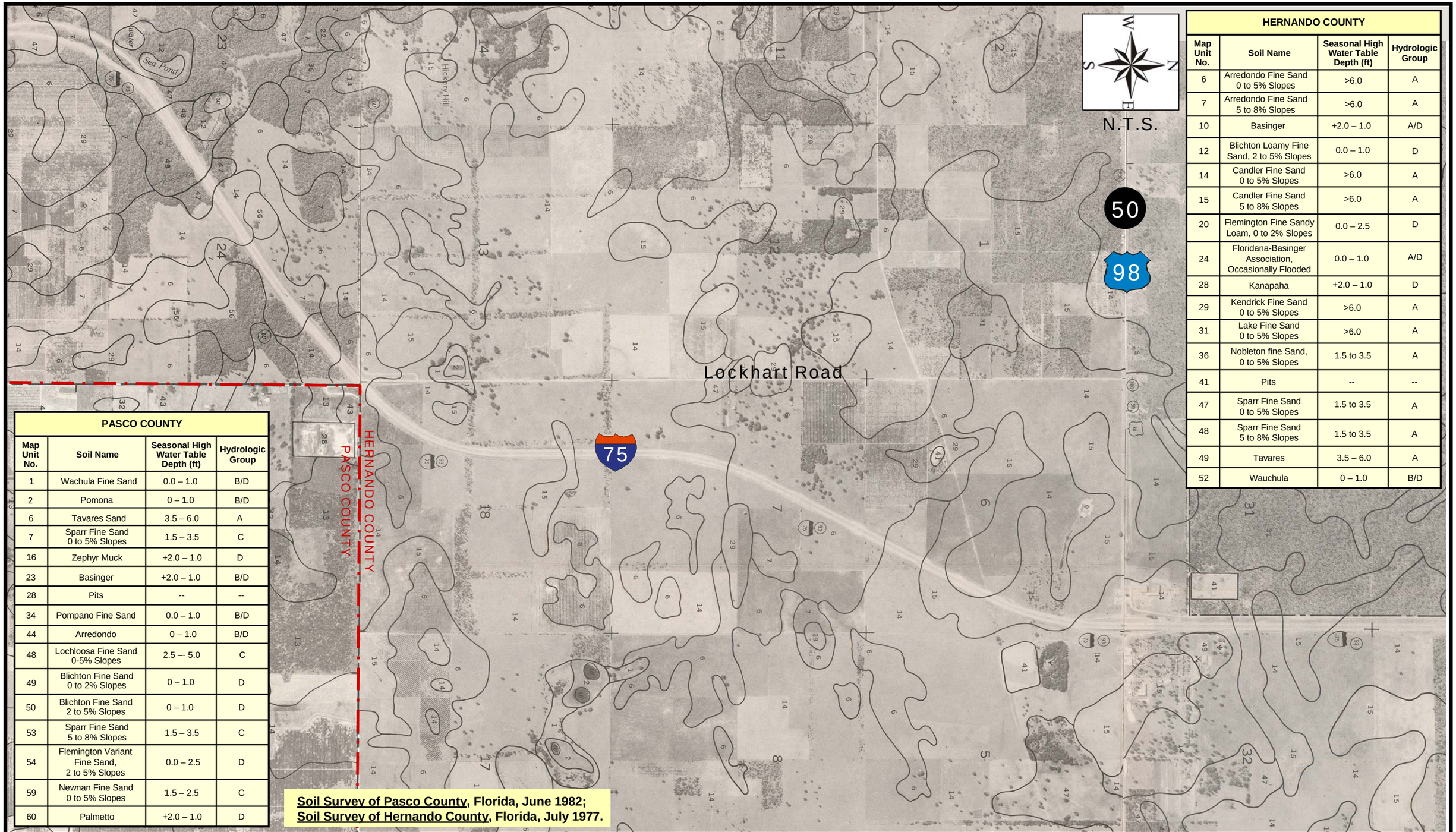
FAP No.: 0751- 120I

Soils Map

Figure 6b



PASCO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
1	Wachula Fine Sand	0.0 – 1.0	B/D
2	Pomona	0 – 1.0	B/D
6	Tavares Sand	3.5 – 6.0	A
7	Sparr Fine Sand 0 to 5% Slopes	1.5 – 3.5	C
16	Zephyr Muck	+2.0 – 1.0	D
23	Basinger	+2.0 – 1.0	B/D
28	Pits	--	--
34	Pompano Fine Sand	0.0 – 1.0	B/D
44	Arredondo	0 – 1.0	B/D
48	Lochloosa Fine Sand 0-5% Slopes	2.5 –- 5.0	C
49	Blichton Fine Sand 0 to 2% Slopes	0 – 1.0	D
50	Blichton Fine Sand 2 to 5% Slopes	0 – 1.0	D
53	Sparr Fine Sand 5 to 8% Slopes	1.5 – 3.5	C
54	Flemington Variant Fine Sand, 2 to 5% Slopes	0.0 – 2.5	D
59	Newnan Fine Sand 0 to 5% Slopes	1.5 – 2.5	C
60	Palmetto	+2.0 – 1.0	D

HERNANDO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
6	Arredondo Fine Sand 0 to 5% Slopes	>6.0	A
7	Arredondo Fine Sand 5 to 8% Slopes	>6.0	A
10	Basinger	+2.0 – 1.0	A/D
12	Blichton Loamy Fine Sand, 2 to 5% Slopes	0.0 – 1.0	D
14	Candler Fine Sand 0 to 5% Slopes	>6.0	A
15	Candler Fine Sand 5 to 8% Slopes	>6.0	A
20	Flemington Fine Sandy Loam, 0 to 2% Slopes	0.0 – 2.5	D
24	Floridana-Basinger Association, Occasionally Flooded	0.0 – 1.0	A/D
28	Kanapaha	+2.0 – 1.0	D
29	Kendrick Fine Sand 0 to 5% Slopes	>6.0	A
31	Lake Fine Sand 0 to 5% Slopes	>6.0	A
36	Nobleton fine Sand, 0 to 5% Slopes	1.5 to 3.5	A
41	Pits	--	--
47	Sparr Fine Sand 0 to 5% Slopes	1.5 to 3.5	A
48	Sparr Fine Sand 5 to 8% Slopes	1.5 to 3.5	A
49	Tavares	3.5 – 6.0	A
52	Wauchula	0 – 1.0	B/D

Soil Survey of Pasco County, Florida, June 1982;
Soil Survey of Hernando County, Florida, July 1977.

I-75 PD&E Study
From N. of SR 52 to S. of CR 476B
Pasco, Hernando & Sumter Counties
WPI Seg. No.: 411014 1
FAP No.: 0751- 120I

Soils Map

Figure 6c

HERNANDO COUNTY

SUMTER COUNTY

Croom Rital Road

Withlacoochee River

CR 476B

END PROJECT

N.T.S.

HERNANDO COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
6	Arredondo Fine Sand 0 to 5% Slopes	>6.0	A
7	Arredondo Fine Sand 5 to 8% Slopes	>6.0	A
10	Basinger	+2.0 – 1.0	A/D
12	Blichton Loamy Fine Sand, 2 to 5% Slopes	0.0 – 1.0	D
14	Candler Fine Sand 0 to 5% Slopes	>6.0	A
15	Candler Fine Sand 5 to 8% Slopes	>6.0	A
20	Flemington Fine Sandy Loam, 0 to 2% Slopes	0.0 – 2.5	D
24	Floridana-Basinger Association, Occasionally Flooded	0.0 – 1.0	A/D
28	Kanapaha	+2.0 – 1.0	D
29	Kendrick Fine Sand 0 to 5% Slopes	>6.0	A
31	Lake Fine Sand 0 to 5% Slopes	>6.0	A
36	Nobleton fine Sand, 0 to 5% Slopes	1.5 to 3.5	A
41	Pits	--	--
47	Sparr Fine Sand 0 to 5% Slopes	1.5 to 3.5	A
48	Sparr Fine Sand 5 to 8% Slopes	1.5 to 3.5	A
49	Tavares	3.5 – 6.0	A
52	Wauchula	0 – 1.0	B/D

SUMTER COUNTY			
Map Unit No.	Soil Name	Seasonal High Water Table Depth (ft)	Hydrologic Group
4	Candler Fine Sand, 0 to 5% Slopes	>6.0	A
5	Candler Fine Sand, 5 to 8% Slopes	>6.0	A
8	Lake	>6.0	A
15	Adamsville	2.0 - 3.5	C
21	EauGallie Fine Sand, Bouldery Subsurface	0 – 1.0	B/D
27	Sumterville Fine Sand, Bouldery Subsurface, 0 to 5% Slopes	1.5 – 3.0	C
29	Nitaw Muck, Frequently Flooded	0 – 1.0	D
51	Pits	--	--

Soil Survey of Hernando County, Florida, July 1977, and Soil Survey of Sumter County, Florida, 1988.

I-75 PD&E Study

From N. of SR 52 to S. of CR 476B

Pasco, Hernando & Sumter Counties

WPI Seg. No.: 411014 1

FAP No.: 0751- 120I

Soils Map

Figure 6d

8.0 ALTERNATIVE SMF SITE INFORMATION

8.1 Stormwater Management Methodology and Criteria

A review of the best available information listed in Section 1.0 of this report in addition to field reconnaissance was conducted to assess the potential SMF locations. The following parameters of each site were analyzed in the selection process:

- The "Available Area" for each alternative was obtained from the Pasco, Hernando and Sumter Counties Property Appraiser's Tax Maps.
- The "Existing Average Ground Elevation" was obtained from the SWFWMD Aerials (1"=200'), as shown in Appendix D.
- The "Soil Type" information was obtained for each of the alternatives from the SCS Soil Survey for Pasco, Hernando and Sumter Counties, Florida. The seasonal high water table (SHWT) elevation was estimated by subtracting the average depth to the SHWT from the average existing ground elevation.
- The maximum stage in the SMF for a 100-year storm event (DHW_{100}) was estimated using the following procedure. Pre and post CN numbers were calculated along with an estimated time of concentration (Tc) which was then used to determine the 25-year and 100-year peak outflow using TR55 (see "Q" – Post Development Conditions (8-Lanes) table in Appendix C). The estimated DHW was used in the "Estimated Stormwater Management Facility (SMF) Area Requirements (8-Lanes)" table in Appendix C to estimate the SMF sizes.
- The "Impact on Wetlands, Cultural Resources, Threatened or Endangered Species" and "Contamination Impact" is based on the information included in Section 5.0 of this report.
- The "Right-of-Way Cost Estimate" information was approved by the FDOT Right-of-Way Department.

8.2 SMF Alternative Analysis

The project has been divided into 32 roadway drainage basins, as shown in the Drainage Basin Map in Figure 3. Basin 1 was not included due to a change in the project limits.

Based on the methodology and criteria stated in Section 8.1, the following alternative SMF sites were evaluated for each basin. SMF site alternatives are labeled SMF Site 2A, for example.

1) Basin 2: SMF Sites 2A, 2B and 2C

2) Basin 3: SMF Sites 3A, 3B and 3C

3) Basin 4: SMF Sites 4A, 4B and 4C

4) Basin 5: SMF Sites 5A, 5B and 5C

5) Basin 6: SMF Sites 6A, 6B and 6C

6) Basin 7: SMF Sites 7A, 7B and 7C

7) Basin 8: SMF Sites 8A, 8B and 8C

8) Basin 9: SMF Sites 9A, 9B and 9C

9) Basin 10: SMF Sites 10A, 10B and 10C

10) Basin 11: SMF Sites 11A and 11B

11) Basin 12: SMF Sites 12A and 12B

12) Basin 13: SMF Sites 13A, 13B and 13C

13) Basin 14: SMF Sites 14A, 14B and 14C

14) Basin 15: SMF Sites 15A, 15B and 15C

15) Basin 16: SMF Sites 16A and 16B

16) Basin 17: SMF Sites 17A and 17B

17) Basin 18: SMF Sites 18A and 18B

18) Basin 19: SMF Sites 19A, 19B and 19C

19) Basin 20: SMF Sites 20A, 20B and 20C

20) Basin 21: SMF Sites 21A, 21B and 21C

21) Basin 22: SMF Sites 22A, 22B and 22C

22) Basin 23: SMF Sites 23A, 23B and 23C

23) Basin 24: SMF Sites 24A, 24B and 24C

24) Basin 25: SMF Sites 25A, 25B and 25C

25) Basin 26: SMF Sites 26A, 26B and 26C

26) Basin 27: SMF Sites 27A, 27B and 27C

27) Basin 29: SMF Sites 29A, 29B and 29C

28) Basin 30: SMF 30A; SMF 30B; SMF 30C & 3a/3Bc; and SMF 30D & 3a/3bC

29) Basin 31: SMF 31A; SMF 31B; 4a(e)C, 4a(w)C, 4b(e)C & 4b(w)C; and SMF 31D, 4b(e)C & 4b(w)C

30) Basin 32: SMF 32A, SMF 32B and 5aC & 5bC

31) Basin 33: SMF 33A, SMF 33B and 6a/bC & 6cC

32) Basin 34: SMF 34A, 34B and 7C

Each alternative is summarized in the SMF Alternative Matrix Analyses in Tables 5 through 36. The locations of the alternative SMF sites are shown on the Concept Plans in Appendix A. The SMFs are sized to accommodate the required treatment and attenuation per basin. The treatment volume was calculated for 1 inch over the directly connected impervious area (DCIA). Attenuation volumes were calculated using the SCS 100-year/24-hour post minus pre volumes per basin. Weighted curve numbers (CNs) were calculated using the proposed minimum right-of-way width of 150 feet. The calculations used to estimate the size of the SMFs are included in Appendix C.

The resulting information in Tables 5 through 36 was used to analyze each SMF site for selection of a preferred alternative for each basin. The preferred alternatives per basin are highlighted in the tables and the recommendations are summarized in Section 9.0.

The information in Tables 37 through 40 determine a preferred location for floodplain compensation based on the estimated impact to the 100-year floodplain for the right-of-way as well as any impacts to the preferred SMF. The potential locations identified were either a portion of an SMF site that was not the preferred or adjacent in the preferred SMF site. Other factors, in addition to the environmental criteria, that were used to select the preferred FPC Site include location to the estimated elevation of the 100-year floodplain elevation and the soil type. A proportion of the total right-of-way cost was used to estimate the right-of-way cost for the area of floodplain compensation required. For example, if the estimated right-of-way cost for a SMF Alternative was $500,000 and the estimated area needed for floodplain compensation was 50% of that site, then the estimated right-of-way cost would be $250,000.

Table 5
SMF Alternative Matrix Analyses
Basin 2

	SMF Site Alternatives		
Alternative	**2A**	**2B**	**2C**
Location (Station) / Side (LT, RT)	**1255+00/RT**	1259+00/LT	1259+00/RT
SMF Area (acres)	**2.7**	2.7	2.8
Soils Names & Hydrologic Groups	**Pomona (B/D) & Palmetto Sellers (B/D)**	Pomona (B/D) & Pits	Pomona (B/D) & Pits
Proximity to Outfall (feet)	**0**	0	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$12,455**	$0	$8,695
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0	$0
Recorded Archaeological Sites	**None**	None	N/A
Impact to Section 4(f) Property	**No**	No	No
Wetlands (acres)	**0.34**	0.25	0.07
Wetland Mitigation Cost ($95,000/acre)	**$32,3000**	$23,750	$6,650
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$459,600**	$529,800	$593,500
Total Estimated Cost	**$504,355**	$553,550	$608,845

Notes:

- **No floodplain compensation is required for Basin 2.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 6
SMF Alternative Matrix Analyses
Basin 3

	SMF Site Alternatives		
Alternative	**3A**	**3B**	**3C**
Location (Station) / Side (LT, RT)	1284+00/LT	1287+00/RT	**1281+00/RT**
SMF Area (acres)	2.2	2.2	**2.2**
Soils Names & Hydrologic Groups	Lochloosa Fine Sand (C)	Pomona (B/D)	**Pomona (B/D)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	2.18	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$395,100	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands (acres)	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
SMF Right-of-Way Cost Estimate	$449,500	$395,100	**$392,700**
Total Estimated Cost	$449,500	$790,200	**$392,700**

Notes:

- **Basin 3 requires floodplain compensation. See Table 37 for floodplain compensation.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 7
SMF Alternative Matrix Analyses
Basin 4

	SMF Site Alternatives		
Alternative	**4A**	**4B**	**4C**
Location (Station) / Side (LT, RT)	1303+00/RT	**1298+00/RT**	1301+00/LT
SMF Area (acres)	4.0	**4.1**	4.0
Soils Names & Hydrologic Groups	Newnan Fine Sand (C)	**Newnan Fine Sand (C)**	Newnan Fine Sand (C)
Proximity to Outfall (feet)	0	**0**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$0**	$0
SMF Impacts to the 100-YR Floodplain (ac)	0	**1.97**	3.42
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$309,430**	$470,950
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	No	**No**	No
Wetlands	0	**0**	0.58
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$55,100
Threatened and Endangered Species (Plant and Animals)	None	**None**	None
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$1,575,000	**$648,700**	$552,200
Total Estimated Cost	$1,575,000	**$958,130**	$1,078,250

Notes:

- **Basin 4 requires floodplain compensation. See Table 37 for floodplain compensation.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 8
SMF Alternative Matrix Analyses
Basin 5

	SMF Site Alternatives		
Alternative	**5A**	**5B**	**5C**
Location (Station) / Side (LT,RT)	1342+00/LT	1336+00/RT	**1339+00/RT**
SMF Area (acres)	5.0	4.6	**4.3**
Soils Names & Hydrologic Groups	Newnan Fine Sand (C)	Newnan Fine Sand (C)	**Newnan Fine Sand (C)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0.14	**0.20**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$21,640	**$31,630**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0.12	0.18	**0.18**
Wetland Mitigation Cost ($95,000/acre)	$11,400	$17,100	**$17,100**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$1,106,300	$686,300	**$643,600**
Total Estimated Cost	$1,117,700	$725,040	**$692,330**

Notes:

- **No floodplain compensation is required for Basin 5.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 9
SMF Alternative Matrix Analyses
Basin 6

	SMF Site Alternatives		
Alternative	**6A**	**6B**	**6C**
Location (Station) / Side (LT, RT)	1375+00/LT	1383+00/LT	**1380+00/LT**
SMF Area (acres)	3.1	3.1	**3.1**
Soils Names & Hydrologic Groups	Pomona (B/D) & Blichton Fine Sand (D)	Pomona (B/D) & Blichton Fine Sand (D)	**Pomona (B/D) & Blichton Fine Sand (D)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0.12	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$11,400	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$1,059,000	$570,500	**$570,500**
Total Estimated Cost	$1,070,400	$570,500	**$570,500**

Notes:

- **No floodplain compensation is required for Basin 6.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 10
SMF Alternative Matrix Analyses
Basin 7

	SMF Site Alternatives		
Alternative	**7A**	**7B**	**7C**
Location (Station) / Side (LT, RT)	1402+00/LT	1403+00/LT	**1404+00/LT**
SMF Area (acres)	1.5	1.7	**1.5**
Soils Names & Hydrologic Groups	Pomona (B/D)	Pomona (B/D)	**Pomona (B/D)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$330,500	$430,400	**$326,400**
Total Estimated Cost	$330,500	$430,400	**$326,400**

Notes:

- **No floodplain compensation is required for Basin 7.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 11
SMF Alternative Matrix Analyses
Basin 8

	SMF Site Alternatives		
Alternative	**8A**	**8B**	**8C**
Location (Station) / Side (LT, RT)	**1420+00/LT**	1419+00/RT	1422+00/RT
SMF Area (acres)	**2.2**	2.2	2.2
Soils Names & Hydrologic Groups	**Pomona (B/D) & Basinger (B/D)**	Pomona (B/D)	Pomona (B/D) & Basinger (B/D)
Proximity to Outfall (feet)	**0**	0	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$0**	$0	$0
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0	2.01
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0	$396,700
Recorded Archaeological Sites	**None**	None	None
Impact to Section 4(f) Property	**No**	No	No
Wetlands	**0**	0	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$539,700**	$665,600	$434,200
Total Estimated Cost	**$539,700**	$665,600	$830,900

Notes:

- **Basin 8 requires floodplain compensation. See Table 39 for floodplain compensation alternatives.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 12
SMF Alternative Matrix Analyses
Basin 9

	SMF Site Alternatives		
Alternative	**9A**	**9B**	**9C**
Location (Station) / Side (LT, RT)	**1426+00/LT**	1428+00/RT	1428+00/LT
SMF Area (acres)	**2.2**	2.5	2.4
Soils Names & Hydrologic Groups	**Basinger (B/D) & Lochloosa Fine Sand (C)**	Pomona (B/D) & Basinger (B/D)	Lochloosa Fine Sand (C)
Proximity to Outfall (feet)	**600**	0	795
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$28,200**	$0	$37,370
SMF Impacts to the 100-YR Floodplain (ac)	**0.26**	2.42	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$64,300**	$473,700	$0
Recorded Archaeological Sites	**None**	None	None
Impact to Section 4(f) Property	**No**	No	No
Wetlands	**0**	0.41	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$38,950	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$442,800**	$473,700	$595,500
Total Estimated Cost	**$535,300**	$986,350	$632,870

Notes:

- **Basin 9 requires floodplain compensation. See Table 39 for floodplain compensation alternatives.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 13
SMF Alternative Matrix Analyses
Basin 10

	SMF Site Alternatives		
Alternative	**10A**	**10B**	**10C**
Location (Station) / Side (LT, RT)	1446+00/RT	**1454+00/LT**	1447+00/RT
SMF Area (acres)	4.1	**4.1**	4.1
Soils Names & Hydrologic Groups	Pomona (B/D)	**Pomona (B/D)**	Pomona (B/D)
Proximity to Outfall (feet)	0	**50**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$2350**	$0
SMF Impacts to the 100-YR Floodplain (ac)	4.09	**0**	4.09
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$747,600	**$0**	$747,600
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	No	**No**	No
Wetlands	0	**0**	0.52
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$49,400
Threatened and Endangered Species (Plant and Animals)	None	**None**	Potential (Sandhill Crane Nest)
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$747,600	**$907,400**	$747,600
Total Estimated Cost	$1,495,200	**$909,750**	$1,544,600

Notes:

- **The impacts to the 100-year floodplain for Basin 10 will be compensated for in the preferred FPC site shown in Table 39.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 14
SMF Alternative Matrix Analyses
Basin 11

	SMF Site Alternatives	
Alternative	**11A**	**11B**
Location (Station) / Side (LT, RT)	1486+00/LT	**1483+00/RT**
SMF Area (acres)	1.8	**1.7**
Soils Names & Hydrologic Groups	Pomona (B/D), Sparr Fine Sand (C) & Blichton Fine Sand (D)	**Sparr Fine Sand (C)**
Proximity to Outfall (feet)	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$0**
Recorded Archaeological Sites	None	**None**
Impact to Section 4(f) Property	No	**No**
Wetlands	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	**None**
Contamination Risk Rating	No	**No**
Right-of-Way Cost Estimate	$384,800	**$347,300**
Total Estimated Cost	$384,800	**$347,300**

Notes:

- **No floodplain compensation is required for Basin 11.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 15
SMF Alternative Matrix Analyses
Basin 12

	SMF Site Alternatives	
Alternative	**12A**	**12B**
Location (Station) / Side (LT, RT)	**1499+00/LT**	1499+00/RT
SMF Area (acres)	**1.7**	1.7
Soils Names & Hydrologic Groups	**Pomona (B/D)**	Pomona (B/D)
Proximity to Outfall (feet)	**0**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$0**	$0
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0
Recorded Archaeological Sites	**None**	None
Impact to Section 4(f) Property	**No**	No
Wetlands	**0**	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None
Contamination Risk Rating	**No**	No
Right-of-Way Cost Estimate	**$315,600**	$356,000
Total Estimated Cost	**$315,600**	$356,000

Notes:

- **No floodplain compensation is required for Basin 12.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 16
SMF Alternative Matrix Analyses
Basin 13

	SMF Site Alternatives		
Alternative	**13A**	**13B**	**13C**
Location (Station) / Side (LT, RT)	1547+00/RT	1543+00/LT	**1548+00/LT**
SMF Area (acres)	5.1	5.1	**5.1**
Soils Names & Hydrologic Groups	Sparr Fine Sand (C)	Sparr Fine Sand (C)	**Sparr Fine Sand (C) & Blichton (D)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0.22	**0.29**
Wetland Mitigation Cost ($95,000/acre)	$0	$20,900	**$27,550**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$6,076,100	$1,717,100	**$1,697,800**
Total Estimated Cost	$6,076,100	$1,738,000	**$1,725,350**

Notes:

- **No floodplain compensation is required for Basin 13.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 17
SMF Alternative Matrix Analyses
Basin 14

	SMF Site Alternatives		
Alternative	**14A**	**14B**	**14C**
Location (Station) / Side (LT, RT)	1579+00/LT	1579+00/LT	**1580+00/RT**
SMF Area (acres)	2.2	2.6	**2.1**
Soils Names & Hydrologic Groups	Pompano Fine Sand (B/D), Blichton Fine Sand (D) & Sparr Fine Sand (C)	Blichton Fine Sand (D) & Sparr Fine Sand (C)	Pompano Fine Sand (B/D) & Sparr Fine Sand (C)
Proximity to Outfall (feet)	50	360	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$2,350	$16,920	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0	**0.35**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$33,250**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$4,474,500	$4,493,300	**$1,751,300**
Total Estimated Cost	$4,476,850	$4,510,220	**$1,784,550**

Notes:

- **No floodplain compensation is required for Basin 14.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 18
SMF Alternative Matrix Analyses
Basin 15

	SMF Site Alternatives		
Alternative	**15A**	**15B**	**15C**
Location (Station) / Side (LT, RT)	**1595+00/RT**	1601+00/RT	1608+00/RT
SMF Area (acres)	**7.8**	8.8	6.8
Soils Names & Hydrologic Groups	**Sparr Fine Sand (C) & Arredondo (B/D)**	Sparr Fine Sand (C) & Pompano Fine Sand (B/D)	Sparr Fine Sand (C) & Pompano Fine Sand (B/D),
Proximity to Outfall (feet)	**85**	0	85
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$3,995**	$0	$3,995
SMF Impacts to the 100-YR Floodplain (ac)	**0**	4.10	0.31
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$761,620	$481,100
Recorded Archaeological Sites	**None**	None	None
Impact to Section 4(f) Property	**No**	No	No
Wetlands	**0.37**	2.63	0.45
Wetland Mitigation Cost ($95,000/acre)	**$35,150**	$249,850	$42,750
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$1,457,700**	$1,463,800	$11,996,100
Total Estimated Cost	**$1,496,845**	$2,475,270	$12,519,950

Notes:

- **No floodplain compensation is required for Basin 15.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 19
SMF Alternative Matrix Analyses
Basin 16

	SMF Site Alternatives	
Alternative	**16A**	**16B**
Location (Station) / Side (LT, RT)	**1612+00/LT & RT**	1615+00/LT
SMF Area (acres)	**7.9**	7.7
Soils Names & Hydrologic Groups	**Sparr Fine Sand (C), Arredondo (B/D), Blitchton Fine Sand (D)**	Arredondo (B/D) & Blitchton Fine Sand (D)
Proximity to Outfall (feet)	**0**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$0**	$0
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0
Recorded Archaeological Sites	**None**	None
Impact to Section 4(f) Property	**No**	No
Wetlands	**0**	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None
Contamination Risk Rating	**No**	No
Right-of-Way Cost Estimate	**$1,044,300**	$1,315,800
Total Estimated Cost	**$1,044,300**	$1,315,800

Notes:

- **No floodplain compensation is required for Basin 16.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size**

Table 20
SMF Alternative Matrix Analyses
Basin 17

	SMF Site Alternatives	
Alternative	**17A**	**17B**
Location (Station) / Side (LT, RT)	1688+00/LT	**1691+00/LT**
SMF Area (acres)	8.5	**8.7**
Soils Names & Hydrologic Groups	Flemington (D), Kendrick Fine Sand (A) & Wachula (B/D)	**Flemington (D), Kendrick Fine Sand (A) & Wachula (B/D)**
Proximity to Outfall (feet)	115	**185**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$5400	**$8700**
SMF Impacts to the 100-YR Floodplain (ac)	0	**0.13**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$16,950**
Recorded Archaeological Sites	None	**None**
Impact to Section 4(f) Property	No	**No**
Wetlands	0.46	**0**
Wetland Mitigation Cost ($95,000/acre)	$43,700	**$0**
Threatened and Endangered Species (Plant and Animals)	None	**None**
Contamination Risk Rating	No	**No**
Right-of-Way Cost Estimate	$3,133,800	**$1,070,600**
Total Estimated Cost	$3,182,900	**$1,096,250**

Notes:

- **No floodplain compensation is required for Basin 17.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 21
SMF Alternative Matrix Analyses
Basin 18

	SMF Site Alternatives	
Alternative	**18A**	**18B**
Location (Station) / Side (LT, RT)	1698+00/RT	**1707+00/RT**
SMF Area (acres)	7.6	**7.6**
Soils Names & Hydrologic Groups	Basinger (A/D) & Sparr Fine Sand (A)	**Basinger (A/D) & Blichton (D)**
Proximity to Outfall (feet)	85	**100**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$4000	**$4700**
SMF Impacts to the 100-YR Floodplain (ac)	5.03	**7.51**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$1,891,300	**$1,177,800**
Recorded Archaeological Sites	None	**None**
Impact to Section 4(f) Property	No	**No**
Wetlands	4.19	**5.89**
Wetland Mitigation Cost ($95,000/acre)	$398,050	**$559,550**
Threatened and Endangered Species (Plant and Animals)	None	**None**
Contamination Risk Rating	No	**No**
Right-of-Way Cost Estimate	$2,842,600	**$1,177,800**
Total Estimated Cost	$5,135,950	**$2,919,850**

Notes:

- **No floodplain compensation is required for Basin 18.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 22
SMF Alternative Matrix Analyses
Basin 19

	SMF Site Alternatives		
Alternative	**19A**	**19B**	**19C**
Location (Station) / Side (LT, RT)	1765+00/LT	**1763+00/LT**	1763+00/LT
SMF Area (acres)	8.1	**7.8**	175 (Natural Discharge)
Soils Names & Hydrologic Groups	Arredondo Fine Sand (A), Nobleton Fine Sand (A) & Sparr Fine Sand (A)	**Nobleton Fine Sand (A) & Sparr Fine Sand (A)**	Arrendondo Fine Sand (A), Blichton (D), Kenapaha (A/D) & Sparr Fine Sand (A)
Proximity to Outfall (feet)	535	**0**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$25,150	**$0**	$0
SMF Impacts to the 100-YR Floodplain (ac)	3.89	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$704,230	**$0**	$0
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	Yes	**Yes**	Yes
Wetlands	0	**0**	0
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	None	**None**	None
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$1,397,600	**$179,500**	$26,540,200
Total Estimated Cost	$2,126,980	**$179,500**	$26,540,200

Notes:

- **No floodplain compensation is required for Basin 19.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 23
SMF Alternative Matrix Analyses
Basin 20

	SMF Site Alternatives		
Alternative	**20A**	**20B**	**20C**
Location (Station) / Side (LT, RT)	1790+00/LT	**1794+00/LT**	1788+00/LT
SMF Area (acres)	4.2	**4.7**	5.2
Soils Names & Hydrologic Groups	Blichton Fine Sand (D)	**Blichton Fine Sand (D)**	Blichton Fine Sand (D) & Sparr Fine Sand (A)
Proximity to Outfall (feet)	0	**510**	145
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$23,970**	$6,820
SMF Impacts to the 100-YR Floodplain (ac)	0	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$0**	$0
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	No	**No**	No
Wetlands	1.76	**0**	0
Wetland Mitigation Cost ($95,000/acre)	$167,200	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	None	**None**	None
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$779,400	**$861,500**	$941,000
Total Estimated Cost	$946,600	**$885,470**	$947,820

Notes:

- **No floodplain compensation is required for Basin 20.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 24
SMF Alternative Matrix Analyses
Basin 21

	SMF Site Alternatives		
Alternative	**21A**	**21B**	**21C**
Location (Station) / Side (LT, RT)	1823+00/LT	**1825+00/RT**	1823+00/LT
SMF Area (acres)	6.8	**6.7**	6.8
Soils Names & Hydrologic Groups	Candler Fine Sand (A) & Sparr Fine Sand (A)	**Candler Fine Sand (A) & Sparr Fine Sand (A)**	Arredondo Fine Sand (A), Candler Fine Sand (A) & Sparr Fine Sand (A)
Proximity to Outfall (feet)	0	**0**	70
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$0**	$3,290
SMF Impacts to the 100-YR Floodplain (ac)	0	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$0**	$0
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	No	**No**	No
Wetlands	0	**0**	0
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	None	**None**	None
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$1,172,200	**$995,000**	$1,183,900
Total Estimated Cost	$1,172,200	**$995,000**	$1,187,190

Notes:

- **No floodplain compensation is required for Basin 21.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 25
SMF Alternative Matrix Analyses
Basin 22

	SMF Site Alternatives		
Alternative	**22A**	**22B**	**22C**
Location (Station) / Side (LT, RT)	**1862+00/LT**	1858+00/LT	1864+00/LT
SMF Area (acres)	**7.1**	7.2	7.3
Soils Names & Hydrologic Groups	**Arredondo Fine Sand (A) & Candler Fine Sand (A)**	Arredondo Fine Sand (A), Blichton Fine Sand (D) & Candler Fine Sand (A)	Arredondo Fine Sand (A) & Candler Fine Sand (A)
Proximity to Outfall (feet)	**0**	0	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$0**	$0	$0
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0	$0
Recorded Archaeological Sites	**None**	None	None
Impact to Section 4(f) Property	**No**	No	No
Wetlands	**0**	0	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$1,164,800**	$2,312,100	$1,251,300
Total Estimated Cost	**$1,164,800**	$2,312,100	$1,251,300

Notes:

- **No floodplain compensation is required for Basin 22.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 26
SMF Alternative Matrix Analyses
Basin 23

	SMF Site Alternatives		
Alternative	**23A**	**23B**	**23C**
Location (Station) / Side (LT, RT)	**1896+00/RT**	1900+00/LT	1895+00/LT
SMF Area (acres)	**4.8**	5.1	4.9
Soils Names & Hydrologic Groups	**Candler Fine Sand (A)**	Candler Fine Sand (A)	Candler Fine Sand (A)
Proximity to Outfall (feet)	**0**	0	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	**$0**	$0	$0
SMF Impacts to the 100-YR Floodplain (ac)	**0**	0	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	**$0**	$0	$0
Recorded Archaeological Sites	**None**	None	None
Impact to Section 4(f) Property	**No**	No	No
Wetlands	**0**	0	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None	None
Contamination Risk Rating	**No**	No	No
Right-of-Way Cost Estimate	**$741,600**	$768,700	$752,100
Total Estimated Cost	**$741,600**	$768,700	$752,100

Notes:

- **No floodplain compensation is required for Basin 23.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 27
SMF Alternative Matrix Analyses
Basin 24

	SMF Site Alternatives		
Alternative	**24A**	**24B**	**24C**
Location (Station) / Side (LT, RT)	1941+00/LT	**1933+00/LT**	1935+00/RT
SMF Area (acres)	7.4	**7.1**	7.3
Soils Names & Hydrologic Groups	Arredondo Fine Sand (A) & Candler Fine Sand (A)	**Candler Fine Sand (A)**	Candler Fine Sand (A)
Proximity to Outfall (feet)	0	**0**	0
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$0**	$0
SMF Impacts to the 100-YR Floodplain (ac)	0	**0**	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$0**	$0
Recorded Archaeological Sites	None	**None**	None
Impact to Section 4(f) Property	No	**No**	No
Wetlands	0	**0**	0
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	None	**None**	None
Contamination Risk Rating	No	**No**	No
Right-of-Way Cost Estimate	$1,077,400	**$1,051,400**	$1,053,200
Total Estimated Cost	$1,077,400	**$1,051,400**	$1,053,200

Notes:

- **No floodplain compensation is required for Basin 24.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 28
SMF Alternative Matrix Analyses
Basin 25

	SMF Site Alternatives		
Alternative	**25A**	**25B**	**25C**
Location (Station) / Side (LT, RT)	1982+00/LT	1987+00/RT	**1987+00/LT**
SMF Area (acres)	5.0	4.5	**5.1**
Soils Names & Hydrologic Groups	Arredondo Fine Sand (A)	Arredondo Fine Sand (A) & Candler Fine Sand (A)	**Arredondo Fine Sand (A) & Candler Fine Sand (A)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$1,259,300	$1,685,300	**$766,200**
Total Estimated Cost	$1,259,300	$1,685,300	**$766,200**

Notes:

- **No floodplain compensation is required for Basin 25.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 29
SMF Alternative Matrix Analyses
Basin 26

	SMF Site Alternatives		
Alternative	**26A**	**26B**	**26C**
Location (Station) / Side (LT, RT)	2003+00/LT	2002+00/LT	**2006+00/RT**
SMF Area (acres)	6.0	6.0	**5.2**
Soils Names & Hydrologic Groups	Candler Fine Sand (A)	Candler Fine Sand (A)	**Candler Fine Sand (A)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$886,000	$884,000	**$789,400**
Total Estimated Cost	$886,000	$884,000	**$789,400**

Notes:

- **No floodplain compensation is required for Basin 26.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 30
SMF Alternative Matrix Analyses
Basin 27

	SMF Site Alternatives		
Alternative	**27A**	**27B**	**27C**
Location (Station) / Side (LT, RT)	2037+00/RT	2028+00/LT	**2028+00/RT**
SMF Area (acres)	3.9	3.8	**3.7**
Soils Names & Hydrologic Groups	Candler Fine Sand (A)	Candler Fine Sand (A)	**Candler Fine Sand (A)**
Proximity to Outfall (feet)	0	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	No	**No**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$1,346,400	$3,143,800	**$588,900**
Total Estimated Cost	$1,346,400	$3,143,800	**$588,900**

Notes:

- **No floodplain compensation is required for Basin 27.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 31
SMF Alternative Matrix Analyses
Basin 29

	SMF Site Alternatives		
Alternative	**29A**	**29B**	**29C**
Location (Station) / Side (LT, RT)	2066+00/RT	2065+00/LT	**2068+00/RT**
SMF Area (acres)	7.3	7.2	**7.6**
Soils Names & Hydrologic Groups	Candler Fine Sand (A) & Tavares (A)	Candler Fine Sand (A)	**Candler Fine Sand (A) & Tavares (A)**
Proximity to Outfall (feet)	370	100	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$17,390	$4,700	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	No	Yes	**No**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$4,183,000	$536,500	**$3,287,700**
Total Estimated Cost	$4,200,390	$541,200	**$3,287,700**

Notes:

- **[1]The cost of the least expensive alternative, 29B, is located on forestry lands and therefore not selected as the preferred. SMF 29C is the preferred since it is an avoidance alternative to a 4(f) property. The right-of-way costs was not considered a critical factor in the selection of the preferred SMF alternative.**
- **No floodplain compensation is required for Basin 29.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 32
SMF Alternative Matrix Analyses
Basin 30

	SMF Site Alternatives			
Alternative	**30A**	**30B**	**30C & 3a/3bC**	**30D & 3a/3bC**
Location (Station) / Side (LT, RT)	2170+00/RT	**2162+00/RT**	2169+00/RT & 2116+00/RT	2163+00/RT & 2116+00/RT
SMF Area (acres)	14.4	**15.0**	25.1 (SMF/Natural Discharge)	25.7 (SMF/Natural Discharge)
Soils Names & Hydrologic Groups	Lake Fine Sand (A) & Pits (N/A)	**Lake Fine Sand (A) & Sparr Fine Sand (A)**	Candler Fine Sane (A) & Lake Fine Sand (A)	Lake Fine Sand (A) & Sparr Fine Sand (A)
Proximity to Outfall (feet)	0	**540**	0	700
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	**$25,380**	$0	$32,900
SMF Impacts to the 100-YR Floodplain (ac)	0	**0**	0	0
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	**$0**	$0	$0
Recorded Archaeological Sites	None	**None**	None	None
Impact to Section 4(f) Property	No	**No**	Yes	Yes
Wetlands	0	**0**	0	0
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**	$0	$0
Threatened and Endangered Species (Plant and Animals)	None	**None**	None	None
Contamination Risk Rating	No	**No**	No	No
Right-of-Way Cost Estimate	$8,188,300	**$7,643,900**	$7,799,100	$7,613,100
Total Estimated Cost	$8,188,300	**$7,669,280**	$7,799,100	$7,646,000

Notes:

- **No floodplain compensation is required for Basin 30.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 33
SMF Alternative Matrix Analyses
Basin 31

	SMF Site Alternatives			
Alternative	**31A**	**31B**	**4a(e)C, 4a(w)C, 4b(e)C &4b(w)C**	**31D, 4b(e)C &4b(w)C**
Location (Station) / Side (LT, RT)	2228+00/RT	2227+00/RT	2205+00/RT, 2212+00/LT, 2233+00/RT & 2233+00/LT	**2200+00/RT, 2233+00/RT & 2233+00/LT**
SMF Area (acres)	8.3	8.0	17.6 (Natural Discharge)	**13.9 (SMF/Natural Discharge)**
Soils Names & Hydrologic Groups	Pits (N/A)	Candler Fine Sand (A) & Sparr Fine Sand (A)	Arredondo Fine Sand (A), Candler Fine Sand (A), Lake Fine Sand (A) & Sparr Fine Sand (A)	**Candler Fine Sand (A), Lake Fine Sand (A) & Sparr Fine Sand (A)**
Proximity to Outfall (feet)	465	0	0	**850**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$21,860	$0	$0	**$39,960**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	$0	**$0**
Recorded Archaeological Sites	None	None	None	**None**
Impact to Section 4(f) Property	Yes	Yes	Yes	**Yes**
Wetlands	0	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	None	**None**
Contamination Risk Rating	No	No	No	**No**
Right-of-Way Cost Estimate	$378,600	$365,800	$856,800	**$1,209,500**
Total Estimated Cost	$400,460	$365,800	$856,800	**$1,249,460[1]**

Notes:

- **[1]Actual cost of acquisitions and/or easements within forestry lands may be subject to a negotiated mitigation package. Since the right-of-way costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative. (See Section 9.0 for further discussion.)**
- **No floodplain compensation is required for Basin 31.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 34
SMF Alternative Matrix Analyses
Basin 32

	SMF Site Alternatives		
Alternative	**32A**	**32B**	**5aC & 5bC**
Location (Station) / Side (LT, RT)	2250+00/RT	2260+00/LT	**2252+00/LT & 2265+00/LT**
SMF Area (acres)	7.0	6.4	**12.0 (Natural Discharge)**
Soils Names & Hydrologic Groups	Pits (N/A)	Candler Fine Sand (A) & Sparr Fine Sand (A)	**Basinger (A/D), Candler Fine Sand (A) & Sparr Fine Sand (A)**
Proximity to Outfall (feet)	270	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$12,690	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	Yes	Yes	**Yes**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$321,100	$298,900	**$289,700**
Total Estimated Cost	$333,790	$298,900	**$289,700[1]**

Notes:

- **[1]Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since the right-of-way costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.**
- **No floodplain compensation is required for Basin 32.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 35
SMF Alternative Matrix Analyses
Basin 33

	SMF Site Alternatives		
Alternative	**33A**	**33B**	**6a/bC & 6cC**
Location (Station) / Side (LT, RT)	2303+00/LT	2300+00/LT	**2300+00/RT & 2339+00/RT**
SMF Area (acres)	13.9	13.6	**9.4 (Natural Discharge)**
Soils Names & Hydrologic Groups	Lake (A) & Pits (N/A)	Lake (A) & Sumterville (C)	**Lake (A) & Sumterville (C)**
Proximity to Outfall (feet)	410	0	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$19,270	$0	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	Yes	Yes	**Yes**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$615,700	$604,000	**$237,000**
Total Estimated Cost	$634,970	$604,000	**$237,000[1]**

Notes:

- **[1]Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since the right-of-way costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.**
- **No floodplain compensation is required for Basin 33.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 36
SMF Alternative Matrix Analyses
Basin 34

	SMF Site Alternatives		
Alternative	**34A**	**34B**	**7C**
Location (Station) / Side (LT, RT)	2353+00/RT	2342+00/LT	**2345+00/LT**
SMF Area (acres)	8.3	10.2	**7.4 (Natural Discharge)**
Soils Names & Hydrologic Groups	Candler Fine Sand (A), Adamsville (C) & Sumterville Fine Sand (C)	Pits (N/A)	**Candler Fine Sand (A) & Sumterville Fine Sand (C)**
Proximity to Outfall (feet)	0	600	**0**
Pipe Costs (Assume 36" Class II Conc. Pipe @ $47/LF)	$0	$28,200	**$0**
SMF Impacts to the 100-YR Floodplain (ac)	0	0	**0**
Right-of-Way Cost Estimate for 100-YR Floodplain Impact to SMF	$0	$0	**$0**
Recorded Archaeological Sites	None	None	**None**
Impact to Section 4(f) Property	Yes	Yes	**Yes**
Wetlands	0	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	None	**None**
Contamination Risk Rating	No	No	**No**
Right-of-Way Cost Estimate	$377,900	$481,000	**$172,500**
Total Estimated Cost	$377,900	$509,200	**$172,500[1]**

Notes:

- **[1]Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since the right-of-way costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.**
- **No floodplain compensation is required for Basin 34.**
- **Variances in the SMF site alternative size are due to one or all of the following: differences in the estimated seasonal high water table elevation, estimated average ground elevations and/or parcel size.**

Table 37
FPC Alternative Matrix Analyses
Basins 3 & 4

	FPC Site Alternatives	
Alternative	**Portion of SMF 3A**	**Adjacent to SMF 4A**
Location (Station) / Side (LT, RT)	**1284+00/LT**	1303+00/RT
Soils Names & Hydrologic Groups	**Lochloosa Fine Sand (C)**	Newnan Fine Sand (C)
Estimated Depth to SHWT (ft)	**3.75**	2.0
Preferred SMF Impacts to the 100-YR Floodplain (ac-ft)	**1.97**	1.97
Right-of-way Impacts to the 100-YR Floodplain (ac-ft)	**0.66**	0.66
Total Impacts to the 100-YR Floodplain (ac-ft)	**2.63**	2.63
FPC Area (acres)	**0.70**	1.32
Total Right-of-Way Cost Estimate for 100-YR Floodplain Impacts	**$144,350**	$518,450
Recorded Archaeological Sites	**None**	None
Wetlands	**0**	0
Wetland Mitigation Cost ($95,000/acre)	**$0**	$0
Threatened and Endangered Species (Plant and Animals)	**None**	None
Contamination Risk Rating	**No**	No
Total Estimated Cost	**$144,350**	$518,450

Table 38
FPC Alternative Matrix Analyses
Basin 5

Alternative	Adjacent to SMF 5C
Location (Station) / Side (LT, RT)	**1339+00/RT**
Soils Names & Hydrologic Groups	**Newnan Fine Sand (C)**
Estimated Depth to SHWT (ft)	**2.0**
Preferred SMF Impacts to the 100-YR Floodplain (ac-ft)	**0.20**
Right-of-way Impacts to the 100-YR Floodplain (ac-ft)	**0.18**
Total Impacts to the 100-YR Floodplain (ac-ft)	**0.38**
FPC Area (acres)	**0.2**
Total Right-of-Way Cost Estimate for 100-YR Floodplain Impacts	**$30,050**
Recorded Archaeological Sites	**None**
Wetlands	**0**
Wetland Mitigation Cost ($95,000/acre)	**$0**
Threatened and Endangered Species (Plant and Animals)	**None**
Contamination Risk Rating	**No**
Total Estimated Cost	**$30,050**

Table 39
FPC Alternative Matrix Analyses
Basins 8, 9 & 10

	FPC Site Alternatives	
Alternative	**Portion of SMF 8B**	**Portion of SMF 9C**
Location (Station) / Side (LT, RT)	1419+00/RT	**1428+00/LT**
Soils Names & Hydrologic Groups	Pomona (B/D)	**Lochloosa Fine Sand (C)**
Estimated Depth to SHWT (ft)	0.5	**2.5**
Preferred SMF Impacts to the 100-YR Floodplain (ac-ft)	0.26	**0.26**
Right-of-way Impacts to the 100-YR Floodplain (ac-ft)	1.51	**1.51**
Total Impacts to the 100-YR Floodplain (ac-ft)	1.77	**1.77**
FPC Area (acres)	3.5	**0.7**
Total Right-of-Way Cost Estimate for 100-YR Floodplain Impacts	$1,066,100	**$236,200**
Recorded Archaeological Sites	None	**None**
Wetlands	0	**0**
Wetland Mitigation Cost ($95,000/acre)	$0	**$0**
Threatened and Endangered Species (Plant and Animals)	None	**None**
Contamination Risk Rating	No	**No**
Total Estimated Cost	$1,066,100	**$236,200**

Table 40
FPC Alternative Matrix Analyses
Basin 18

Alternative	Portion of SMF 18A
Location (Station) / Side (LT, RT)	**1698+00/RT**
Soils Names & Hydrologic Groups	**Sparr Fine Sand (A)**
Estimated Depth to SHWT (ft)	**2.5**
Preferred SMF Impacts to the 100-YR Floodplain (ac-ft)	**7.51**
Right-of-way Impacts to the 100-YR Floodplain (ac-ft)	**0.0**
Total Impacts to the 100-YR Floodplain (ac-ft)	**7.51**
FPC Area (acres)	**3.0**
Total Right-of-Way Cost Estimate for 100-YR Floodplain Impacts	**$470,500**
Recorded Archaeological Sites	**None**
Wetlands	**0**
Wetland Mitigation Cost ($95,000/acre)	**$0**
Threatened and Endangered Species (Plant and Animals)	**None**
Contamination Risk Rating	**No**
Total Estimated Cost	**$470,500**

9.0 RECOMMENDATIONS

Table 41 summarizes the preferred SMF and FPC sites for the proposed project.

Table 41
Preferred SMF and FPC Sites

Preferred SMF / FPC Sites	Station - Location	Area (ac)
SMF 2A	1255+00, RT	2.7
SMF 3C	1281+00, RT	2.2
FPC 3A	1284+00, LT	0.7
SMF 4B	1298+00, RT	4.1
SMF 5C	1339+00, RT	4.3
FPC (Adjacent to SMF) 5C	1339+00, RT	0.2
SMF 6C	1380+00, LT	3.1
SMF 7C	1404+00, LT	1.5
SMF 8A	1420+00, LT	2.2
SMF 9A	1426+00, LT	2.2
FPC 9C	1428+00, LT	0.7
SMF 10B	1454+00, LT	4.1
SMF 11B	1483+00, RT	1.7
SMF 12A	1499+00, LT	1.7
SMF 13C	1548+00, LT	5.1
SMF 14C	1580+00, RT	2.1
SMF 15A	1595+00, RT	7.8
SMF 16A	1612+00, LT & RT	7.9
SMF 17B	1691+00, LT	8.7
SMF 18B	1707+00, RT	7.5
FPC 18A	1698+00, RT	3.0
SMF 19B	1763+00, LT	7.8
SMF 20B	1794+00, LT	4.7
SMF 21B	1825+00, RT	6.7
SMF 22A	1862+00, LT	7.1
SMF 23A	1896+00, RT	4.8

Preferred SMF / FPC Sites	Station - Location	Area (ac)
SMF 24B	1933+00, LT	7.1
SMF 25C	1987+00, LT	5.1
SMF 26C	2006+00, RT	5.2
SMF 27C	2028+00, RT	3.7
SMF 29C	2068+00, RT	7.6
SMF 30B	2162+00, RT	15.0
SMF 31D, 4b(e)C & 4b(w)C	2200+00, RT; 2233+00, RT & 2233+00, LT	13.9 (20.4 Easement)(1)
5aC & 5bC	2252+00, LT & 2265+00, LT	12.0 (53.1 Easement) (1)
6a/bC & 6cC	2300+00, RT & 2339+00, RT	9.4 (37.3 Easement) (1)
7C	2345+00, LT	7.4 (10.8 Easement) (1)

(1) Department intends to acquire Perpetual Transportation/Drainage/Maintenance Easements within the Withlacoochee State Forest. These easements will include areas of stormwater conveyance.

BASIN 1 Not used.

BASIN 2

The preferred SMF Site 2A is 2.7 ac and is located just north of Oscie Murphey Road at Sta. 1255+00 (RT). The total estimated cost for this site is $504,355. Basin 2 does not require floodplain compensation. Based on land use, proximity to outfall, and lowest cost, SMF Site 2A was selected as the preferred alternative.

BASIN 3

The preferred SMF site is 3C and is approximately 2.2 ac. It is located at Sta. 1281+00 (RT). The total estimated cost is $392,700. There are impacts to the 100-year floodplain within the right-of-way in basins 3 and 4. In order to meet the required floodplain compensation in this area, it is necessary to also acquire a floodplain compensation site. Floodplain compensation for Basins 3 and 4 can be accommodated in a portion of the SMF site 3A, approximately 0.7 acres, and is located at Sta. 1284+00 (LT). The estimated cost for FPC 3A is $144,350. Based on land use, proximity to outfall, and lowest cost, the preferred alternatives for Basin 3 is SMF Site 3C and FPC Site 3A.

BASIN 4

The preferred SMF site is 4B and is approximately 4.1 ac with an estimated cost of $958,130. This SMF is located at Sta. 1298+00 (RT). The 100-year floodplain impacts associated with Basin 4 within the right-of-way as well as the impacts due to the preferred SMF Site 4B will be compensated in FPC Site 3A which is described in the recommendation

section for Basin 3. Based on land use, proximity to outfall, and lowest cost, the preferred alternative for Basin 4 is SMF Site 4B.

BASIN 5

The preferred SMF site is approximately 4.3 ac with an estimated cost of $692,330. This SMF site is located at Sta. 1339+00 (RT) north of Darby Road. Basin 5 does encroach into the 100-year floodplain within the right-of-way and therefore, does require floodplain compensation. Floodplain compensation will be accomplished adjacent to the preferred SMF 5C. Since this impact is minimal, approximately 0.2 ac additional acres will be required. The estimated cost for this compensation is $30,050. Based on proximity to outfall, and the lowest cost, the preferred alternative for Basin 5 is SMF Site 5C.

BASIN 6

The preferred SMF site is 6C and is approximately 3.1 ac with an estimated cost of $570,500. It is located at Sta. 1380+00 (LT) adjacent to Cross Drain No. 4. Alternative 6B is also on the same parcel as SMF Site 6C and has the same estimated cost. The preferred site, 6C, is orientated along the Cross Drain No. 4's outfall and is more hydraulically preferable than 6B. The existing contours are lower on the western side of 6C and the existing average ground elevation of 6B is slightly higher than 6C. Basin 6 does not require floodplain compensation. Based on the reasons listed above, the preferred alternative for Basin 6 is SMF Site 6C.

BASIN 7

The preferred SMF site is 7C and is approximately 1.5 ac with an estimated cost of $326,400. This SMF is located south of CR 578 at Sta. 1404+00 (LT). Basin 7 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 7 is SMF Site 7C.

BASIN 8

The preferred SMF site is 8A and is approximately 2.2 ac. It is located at Sta. 1420+00 (LT). The total estimated cost is $539,700. There are impacts to the 100-year floodplain within the right-of-way in basins 8, 9 and 10 which will be compensated for in Basin 9. Based on land use, proximity to outfall, and lowest cost, the preferred alternatives for Basin 8 is SMF Site 8A.

BASIN 9

The preferred SMF site is 9A and is approximately 2.2 ac. It is located at Sta. 1426+00 (LT). The total estimated cost is $535,300. There are impacts to the 100-year floodplain within the right-of-way in basins 8 and 9 and impacts to the preferred SMF 9A. In order to meet the required floodplain compensation in this area, it is necessary to also acquire a floodplain compensation site. Floodplain compensation for Basins 8, 9 and 10 can be accommodated in a portion of the SMF site 9C, approximately 0.7 acres, and is located at Sta. 1428+00 (LT) which is adjacent to SMF 9A. The estimated cost for FPC 9C is $236,200. Based on land use, proximity to outfall, and lowest cost, the preferred alternatives for Basin 9 is SMF Site 9A and FPC Site 9C.

BASIN 10

The preferred SMF site is 10B and is approximately 4.1 ac. It is located at Sta. 1454+00 (LT) near Cross Drain No. 8. The total estimated cost is $909,750. There are impacts to the 100-year floodplain within the right-of-way in basin 10 which will be compensated for in Basin 9. Based on land use, proximity to outfall, and lowest cost, the preferred alternatives for Basin 10 is SMF Site 10B.

BASIN 11

The preferred SMF site is 11B and is approximately 1.7 ac with an estimated cost of $347,300. This SMF is located at Sta. 1483+00 (RT) adjacent to Cross Drain No. 9. Basin 11 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 11 is SMF Site 11B.

BASIN 12

The preferred SMF site is 12A and is approximately 1.7 ac with an estimated cost of $315,600. This SMF is located at Sta. 1499+00 (LT) adjacent to Cross Drain No. 10 and near Lake Iola Rd. Basin 12 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 12 is SMF Site 12A.

BASIN 13

The preferred SMF site is 13C and is approximately 5.1 ac with an estimated cost of $1,725,350. This SMF is located at Sta. 1548+00 (LT) adjacent to Cross Drain No. 11 and south of Moody Lake. Although the 100-year Floodplain abuts I-75 in this basin, measures will be implemented in the design phase to minimize any impacts to the 100-year floodplain along Moody Lake; therefore, Basin 13 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 13 is SMF Site 13C.

BASIN 14

The preferred SMF site is 14C and is approximately 2.1 ac with an estimated cost of $1,784,550. This SMF is located at Sta. 1580+00 (RT) north of Moody Lake. Although the 100-year Floodplain abuts I-75 in this basin, measures will be implemented in the design phase to minimize any impacts to the 100-year floodplain along Moody Lake; therefore, Basin 14 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 14 is SMF Site 14C.

BASIN 15

The preferred SMF site is 15A and is approximately 7.8 ac with an estimated cost of $1,496,845. This SMF is located at Sta. 1595+00 (RT) south of Blanton Rd. Basin 15 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 15 is SMF Site 15A.

BASIN 16

The preferred SMF site is 16A and is approximately 7.9 ac with an estimated cost of $1,044,300. This SMF is located at Sta. 1612+00 (LT) in the northwest quadrant of Blanton Rd. and I-75 and a portion of it is in the northeast infield of this interchange. Basin 16 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 16 is SMF Site 16A.

BASIN 17

The preferred SMF site is 17B and is approximately 8.7 ac with an estimated cost of $1,087,550. This SMF is located at Sta. 1691+00 (RT) north of Mud Lake and west of McClendon Lake. Although the 100-year Floodplain abuts I-75 in this basin, the existing ground elevations within the right-of-way are above the estimated 100-year floodplain; therefore, Basin 17 does not require floodplain compensation. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 17 is SMF Site 17B.

BASIN 18

The preferred SMF site is 18B and is approximately 7.5 ac with an estimated cost of $2,919,850. This SMF is located at Sta. 1707+00 (RT) north of McClendon Lake. The preferred alternative does impact the 100-year Floodplain and requires floodplain compensation. Floodplain compensation can be accomplished using a portion of SMF 18A that isn't within the 100-year floodplain. The size of the FPC is estimated to be 3.0 ac and cost $470,500. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 18 is SMF Site 18B.

BASIN 19

The preferred SMF site is 19B and is approximately 7.8 ac with an estimated cost of $179,500. This SMF is located at Sta. 1763+00 (LT) near Cross Drain No. 21. The preferred alternative impacts the forest; however it is part of a parcel that isn't currently being managed by the Division of Forestry. Based on proximity to outfall, and lowest cost, and coordination with the Division of Forestry, the preferred alternative for Basin 19 is SMF Site 19B.

BASIN 20

The preferred SMF site is 20B and is approximately 4.7 ac with an estimated cost of $885,470. This SMF is located at Sta. 1794+00 (LT) near Cross Drain No. 24. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 20 is SMF Site 20B.

BASIN 21

The preferred SMF site is 21B and is approximately 6.7 ac with an estimated cost of $995,000. This SMF is located at Sta. 1825+00 (RT) near Cross Drain No. 27. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 21 is SMF Site 21B.

BASIN 22

The preferred SMF site is 22A and is approximately 7.1 ac with an estimated cost of $1,164,800. This SMF is located at Sta. 1862+00 (LT) near Cross Drain No. 28. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 22 is SMF Site 22A.

BASIN 23

The preferred SMF site is 23A and is approximately 4.8 ac with an estimated cost of $741,600. This SMF is located at Sta. 1896+00 (RT) near Cross Drain No. 30. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 23 is SMF Site 23A.

BASIN 24

The preferred SMF site is 24B and is approximately 7.1 ac with an estimated cost of $1,051,400. This SMF is located at Sta. 1933+00 (LT) near Cross Drain No. 33. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 24 is SMF Site 24B.

BASIN 25

The preferred SMF site is 25C and is approximately 5.1 ac with an estimated cost of $766,200. This SMF is located at Sta. 1987+00 (LT) near Cross Drain No. 35. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 25 is SMF Site 25C.

BASIN 26

The preferred SMF site is 26C and is approximately 5.2 ac with an estimated cost of $789,400. This SMF is located at Sta. 2006+00 (RT) near Cross Drain Nos. 36 and 37. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 26 is SMF Site 26C.

BASIN 27

The preferred SMF site is 27C and is approximately 3.7 ac with an estimated cost of $588,900. This SMF is located at Sta. 2028+00 (RT) near Cross Drain No. 39 and south of US 98/SR 50. The preferred alternative does not impact the 100-year Floodplain. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 27 is SMF Site 27C.

BASIN 28 Not used.

BASIN 29

Since the least expensive SMF alternative is within the forestry property, this alternative was not selected as the preferred alternative. It is the opinion of the Department's PD&E staff through prior coordination with the Division of Forestry that excavated SMF alternatives within state forest lands will not be permitted by the Division of State Lands. Actual cost of

acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since these costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative. Therefore, the preferred SMF site is 29C. SMF 29C is approximately 7.6 ac with an estimated cost of $3,287,700. 29C is located at Sta. 2068+00 (RT) and does not impact the 100-year floodplain. Based on proximity to the outfall and avoiding an impact to a 4(f) property, the preferred alternative for Basin 29 is SMF Site 29C.

BASIN 30

There are four alternatives within Basin 30; two of which involve a natural depression area named 3a/3bC in combination with a SMF site. The natural depression area is located on forestry property. SMF Alternatives 30A and 30B are not located on forestry property and are avoidance alternatives. Based on proximity to outfall, and lowest cost, the preferred alternative for Basin 30 is SMF Site 30B. SMF Site 30B is approximately 15.0 ac with an estimated cost of $7,669,280. This SMF is located at Sta. 2162+00 (RT) near Cross Drain No. 45.

BASIN 31

There are four alternatives within Basin 31; two of which involve a natural depression areas located on the forestry property. SMF 31A and 31B are also located on the forestry property. The only alternative not on the forestry property is SMF 31D in combination with two natural depression areas. In order to minimize any impact to the forestry property, the preferred alternative for this basin is the alternative with SMF 31D in combination with two natural depression areas, 4b(e)C and 4b(w)C. SMF 31D is located at Sta. 2200+00, (RT) and the two natural depression areas, 4b(e)C and 4b(w)C, are located at Sta. 2233+00 (RT) and 2233+00 (LT), respectively. The total area for SMF 31D and the natural depressions is approximately 13.9 acres. The total area for SMF 31D and Perpetual Transportation/Drainage/Maintenance Easements within the Forest is 20.4 acres.

It is the opinion of the Department's PD&E staff through prior coordination with the Division of Forestry that excavated SMF alternatives within state forest lands will not be permitted by the Division of State Lands. Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since these costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.

BASIN 32

There are three alternatives within Basin 32; one of which involves two natural depression areas located on the forestry property. SMF 32A and 32B are also located on the forestry property. The preferred alternative for this basin is the alternative with two natural depression areas and does not contain a SMF site. These two natural depression areas are named 5aC and 5bC and are located at Sta. 2252+00 (LT), 2265+00 (LT), respectively. The estimated impacted area for the natural depressions is approximately 12.0 acres. The total area for Perpetual Transportation/Drainage/Maintenance Easements that would encompass the impacted area and areas of stormwater conveyance within the Forest is 53.1 acres.

It is the opinion of the Department's PD&E staff through prior coordination with the Division of Forestry that excavated SMF alternatives within state forest lands will not be permitted by

the Division of State Lands. Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since these costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.

BASIN 33

There are three alternatives within Basin 33; one of which involves two natural depression areas located on the forestry property. SMF 33A and 33B are also located on the forestry property. The preferred alternative for this basin is the alternative with two natural depression areas and does not contain a SMF site. These two natural depression areas are named 6a/bC and 6cC and are located at Sta. 2300+00 (RT), 2339+00 (RT), respectively. The estimated impacted area for the natural depressions is approximately 9.4 acres. The total area for Perpetual Transportation/Drainage/Maintenance Easements that would encompass the impacted area and areas of stormwater conveyance within the Forest is 37.3 acres.

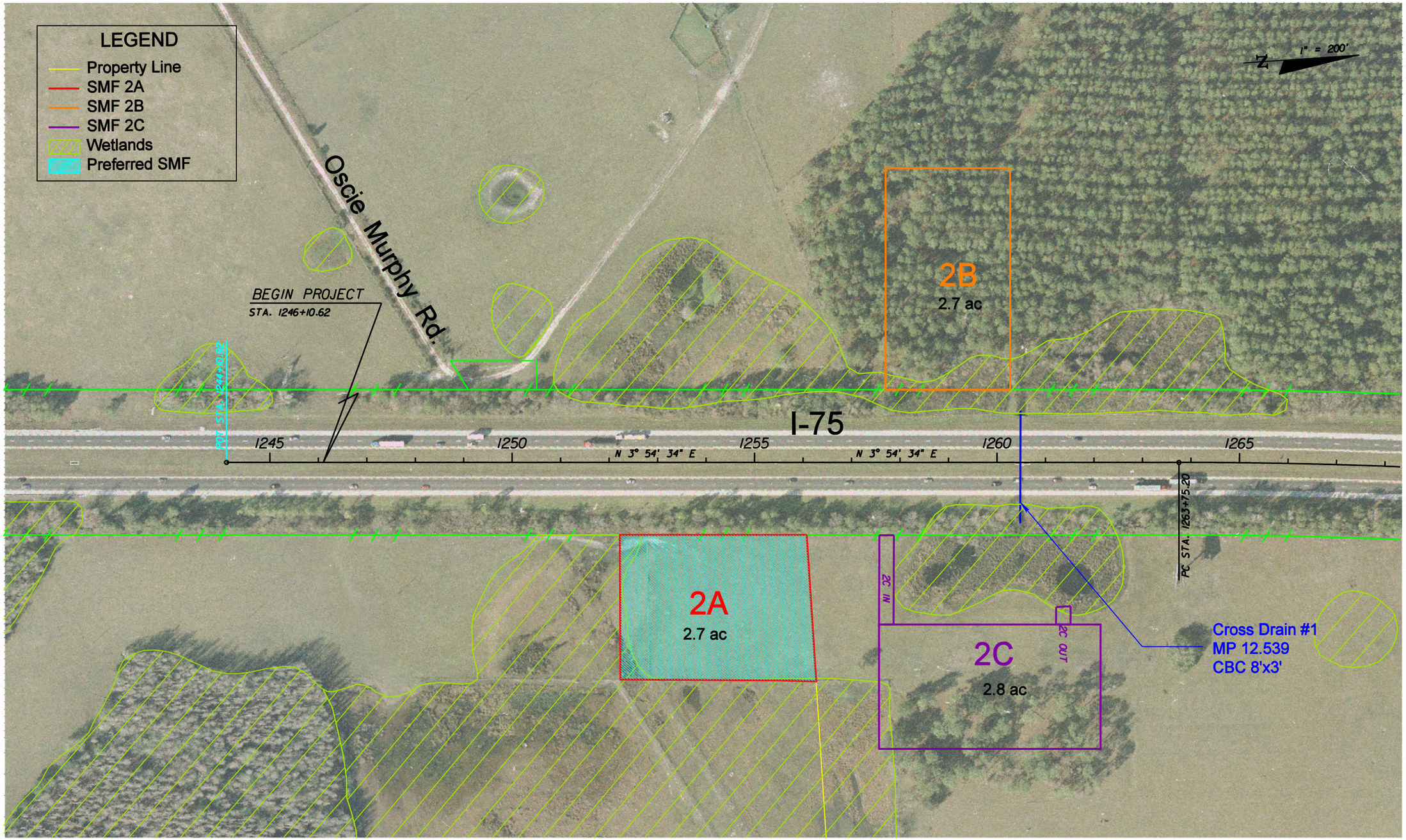
It is the opinion of the Department's PD&E staff through prior coordination with the Division of Forestry that excavated SMF alternatives within state forest lands will not be permitted by the Division of State Lands. Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since these costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.

BASIN 34

There are three alternatives within Basin 34; one of which involves a natural depression area located on the forestry property. SMF 34A and 34B are also located on the forestry property. The preferred alternative for this basin is the alternative with the natural depression area and does not contain a SMF site. This natural depression area is named 7C and is located at Sta. 2345+00 (LT). The estimated impacted area for the natural depression is approximately 7.4 acres. The total area for Perpetual Transportation/Drainage/Maintenance Easements that would encompass the impacted area and areas of stormwater conveyance within the Forest is 10.8 acres.

It is the opinion of the Department's PD&E staff through prior coordination with the Division of Forestry that excavated SMF alternatives within state forest lands will not be permitted by the Division of State Lands. Actual cost of acquisitions and/or easements within forestry lands will be subject to a negotiated mitigation package. Since these costs may not be indicative of the final mitigation costs; this criterion was not considered a critical factor in the selection of the preferred SMF alternative.

Appendix A
Concept Plans



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LOCHNER
13577 FEATHER SOUND DR. SUITE 600
CLEARWATER, FLORIDA 33762
FBPR CERTIFICATE OF AUTH. # 894

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	PASCO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

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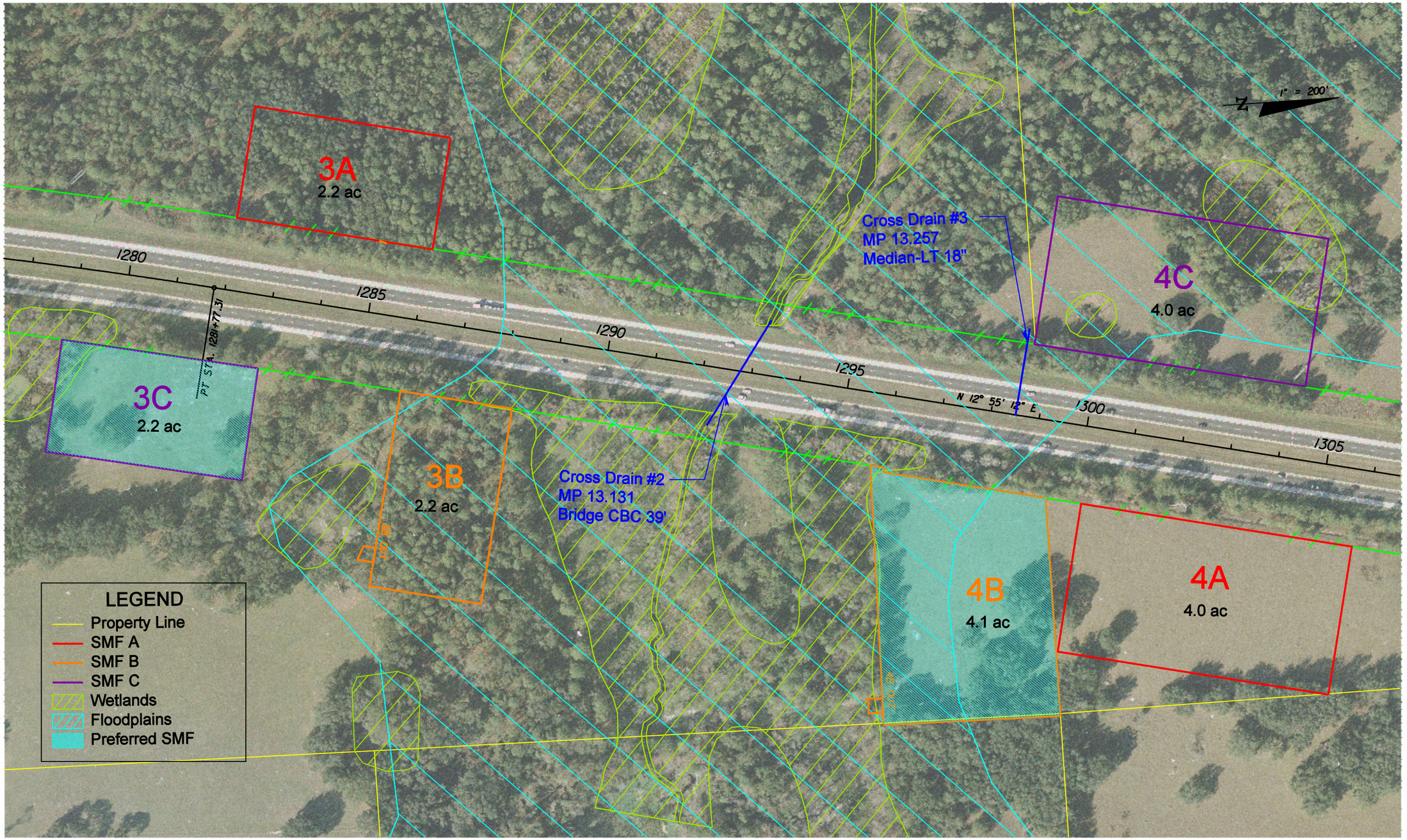

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CONCEPT PLANS

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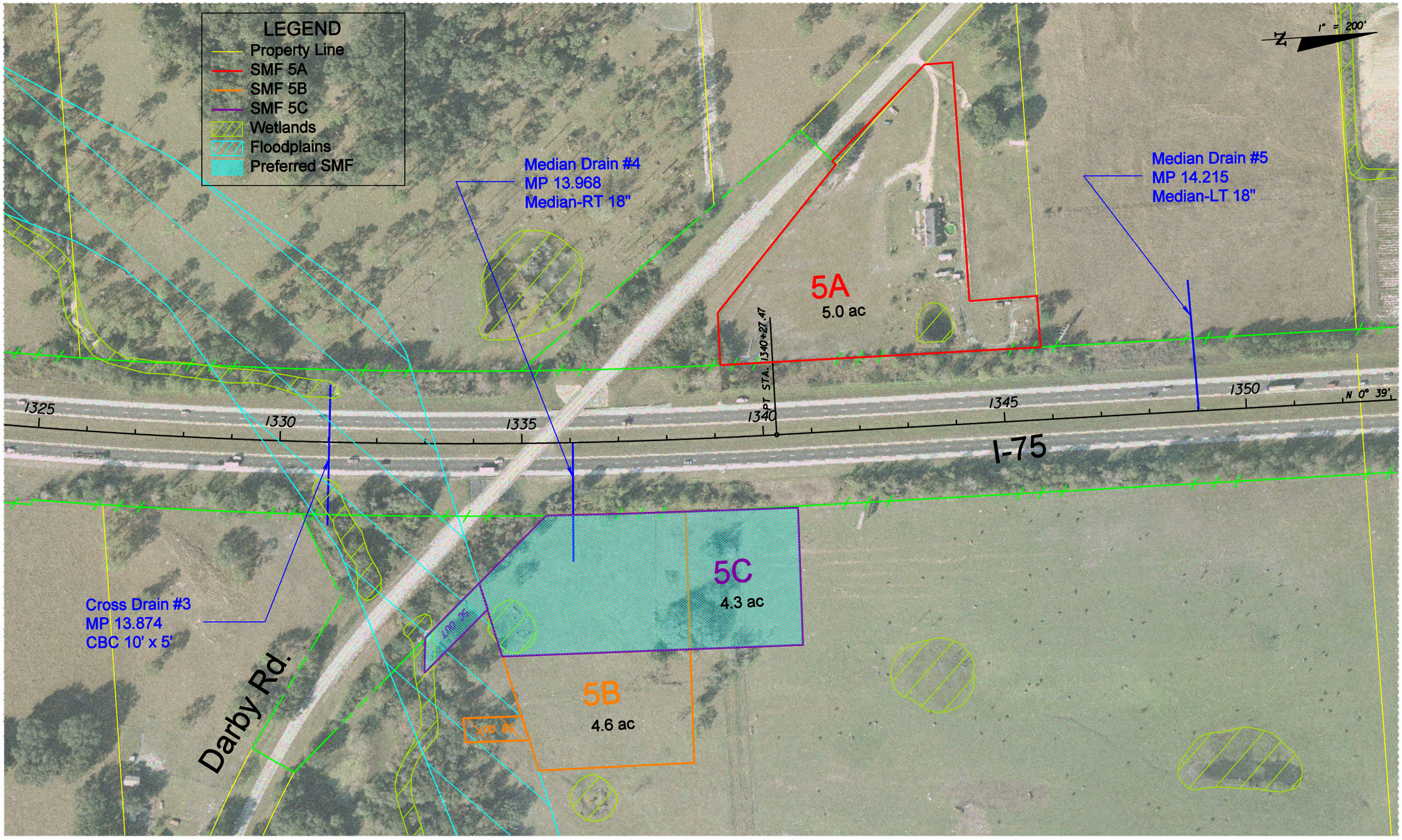

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SR-93	PASCO	411014-1-32-01

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CONCEPT PLANS

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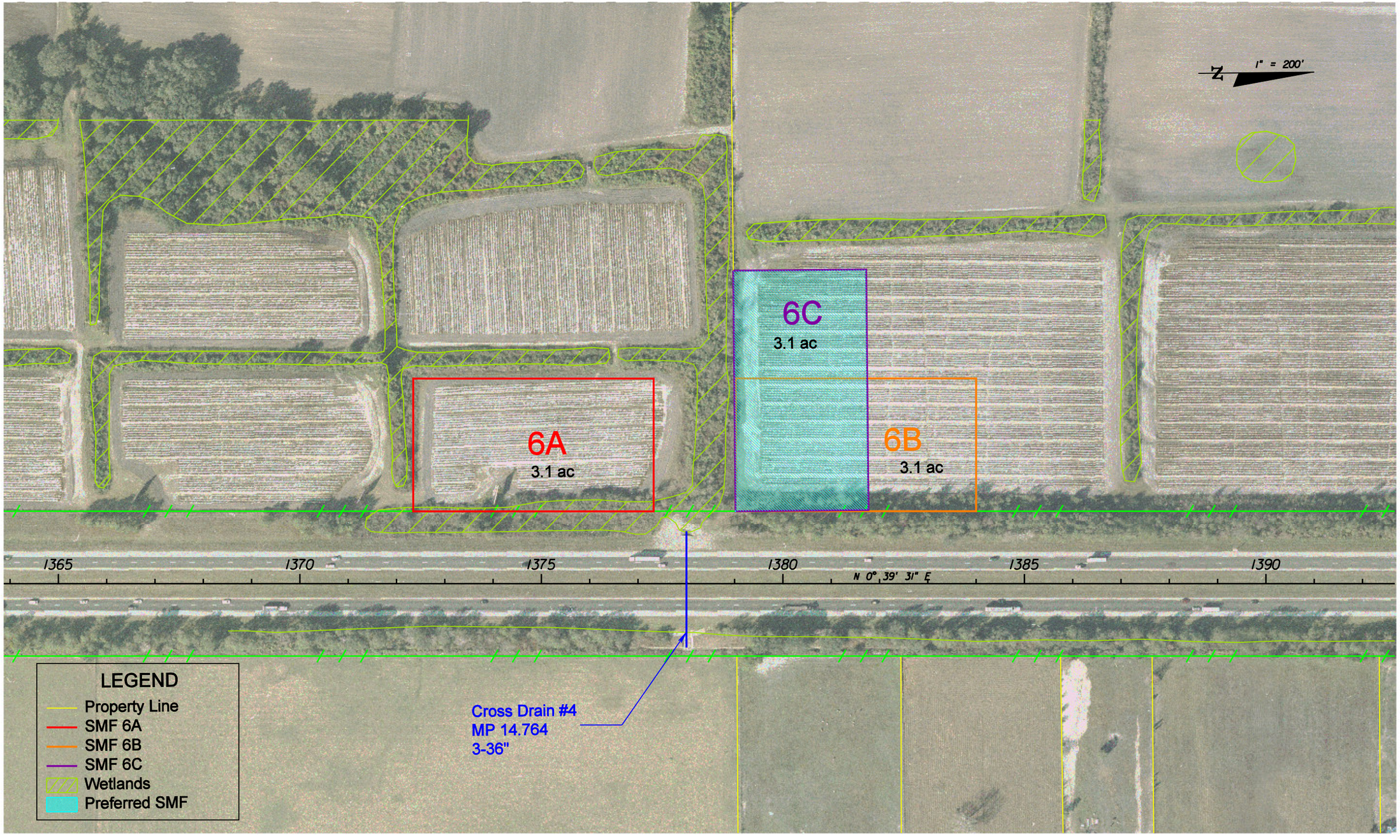

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SR-93	PASCO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

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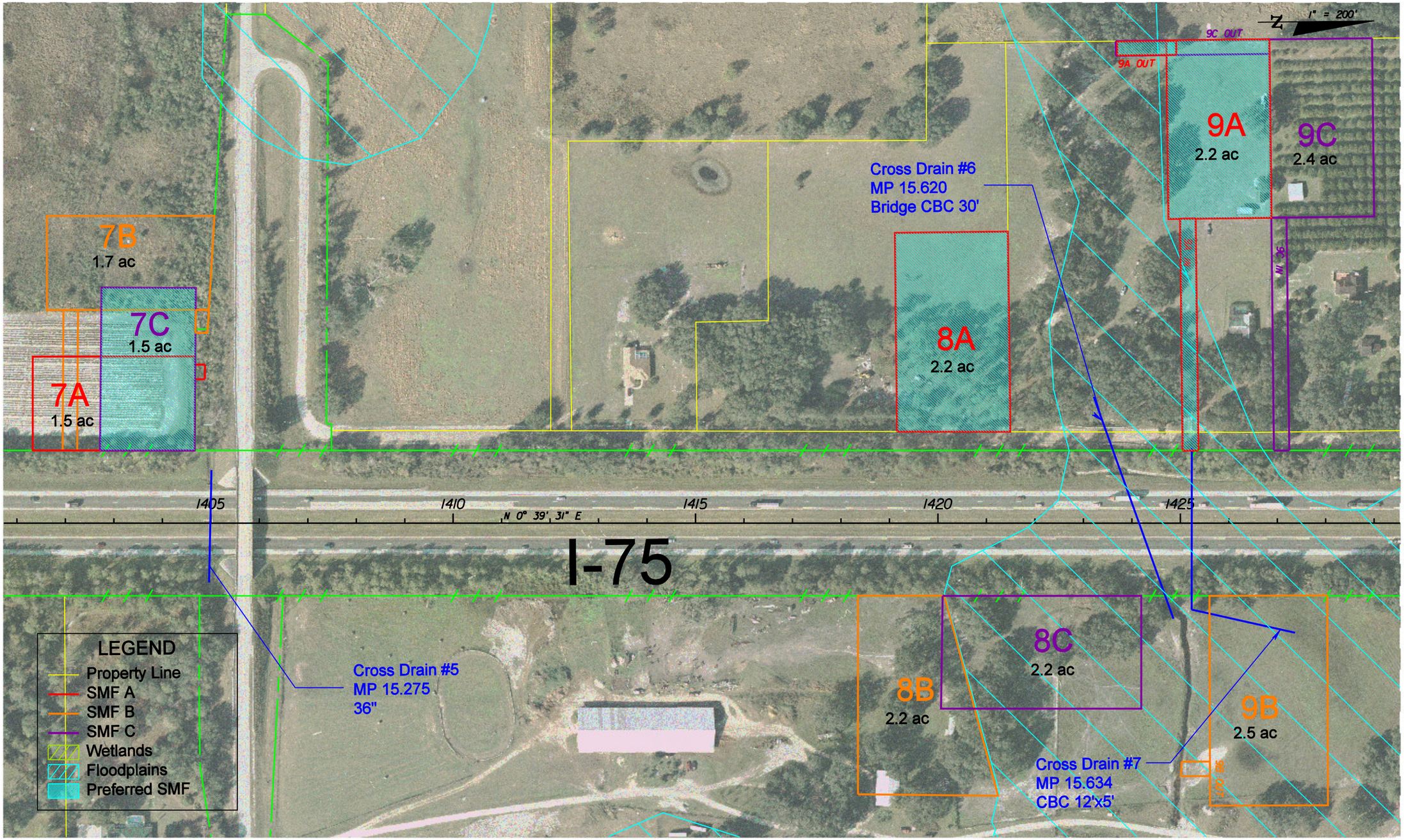

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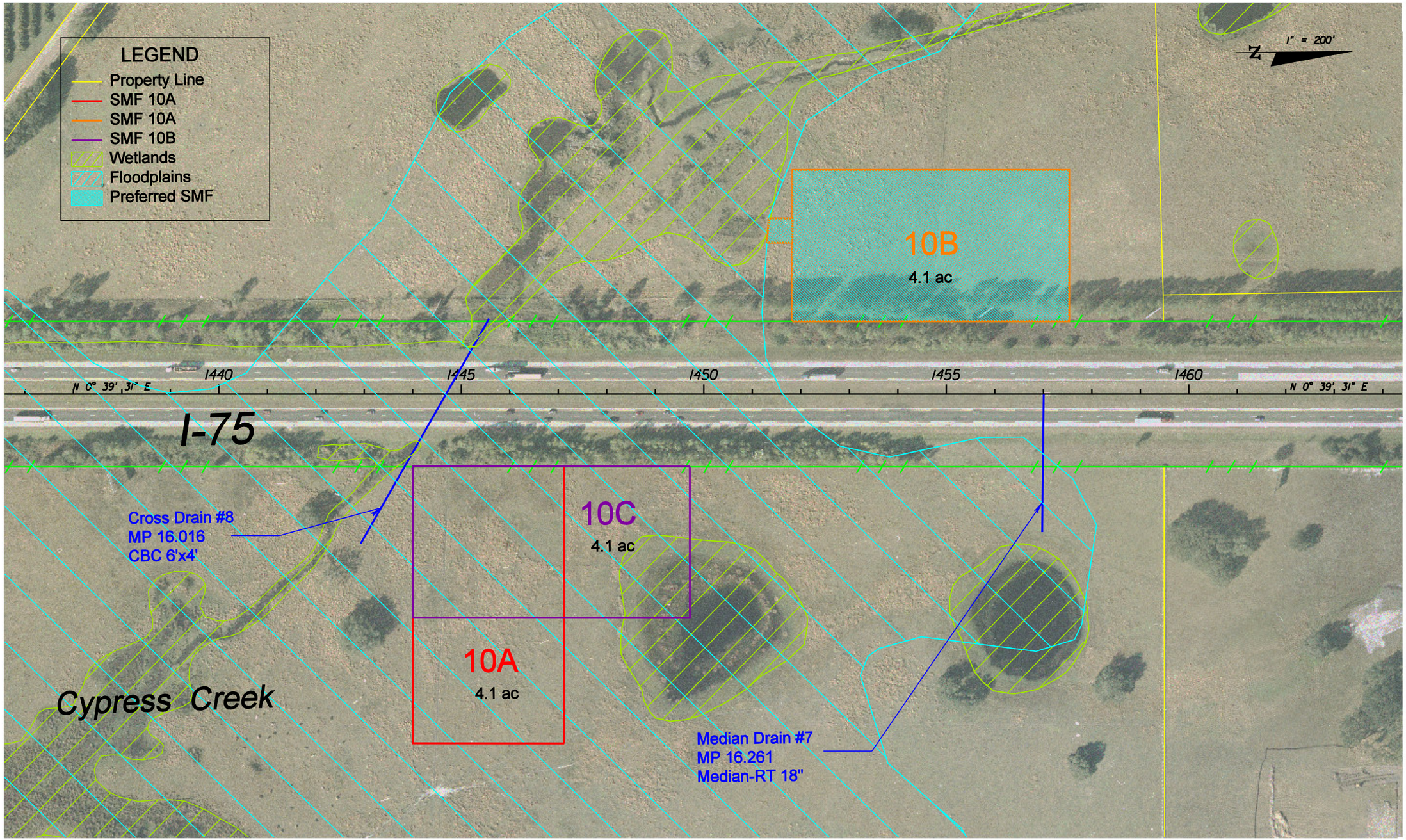

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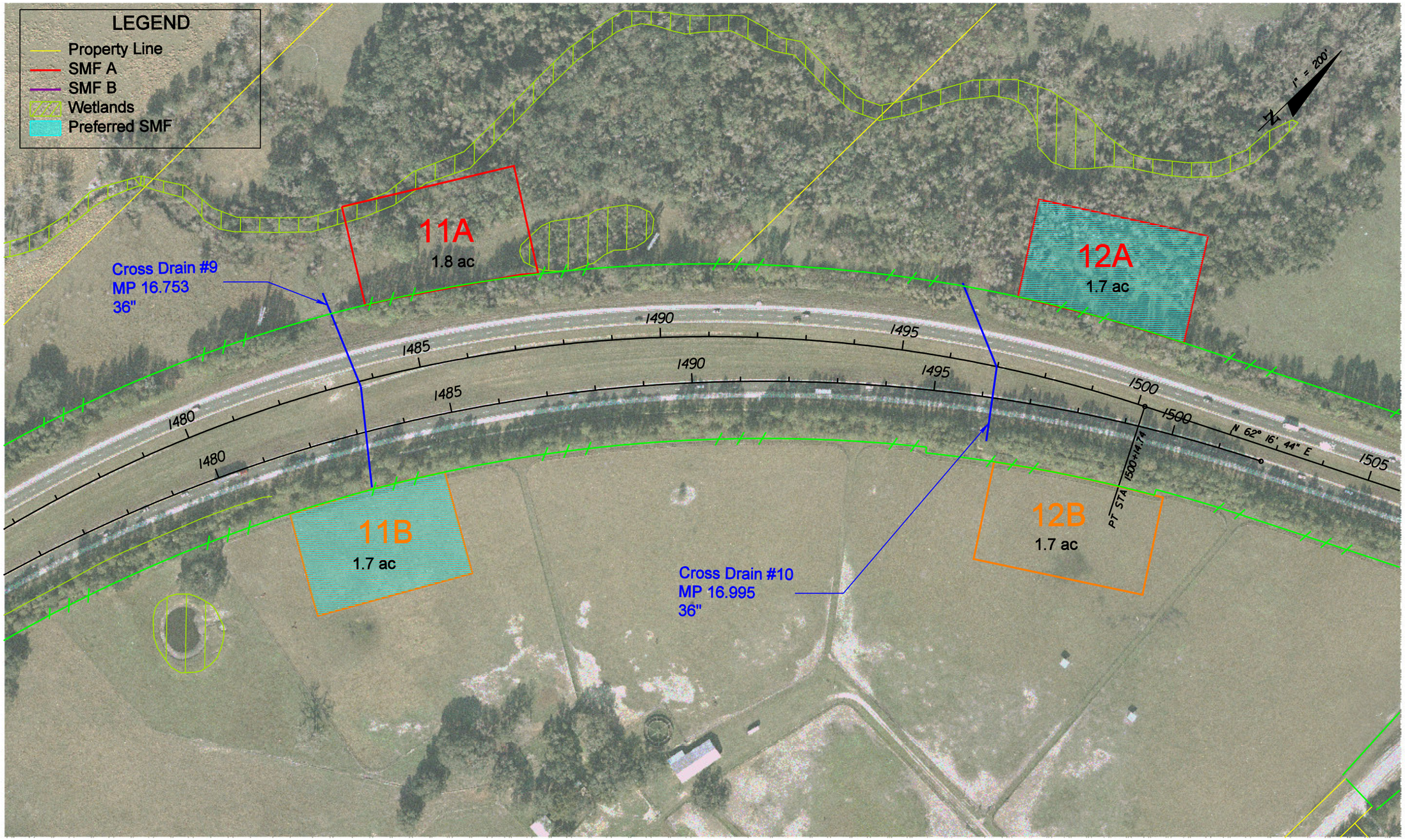

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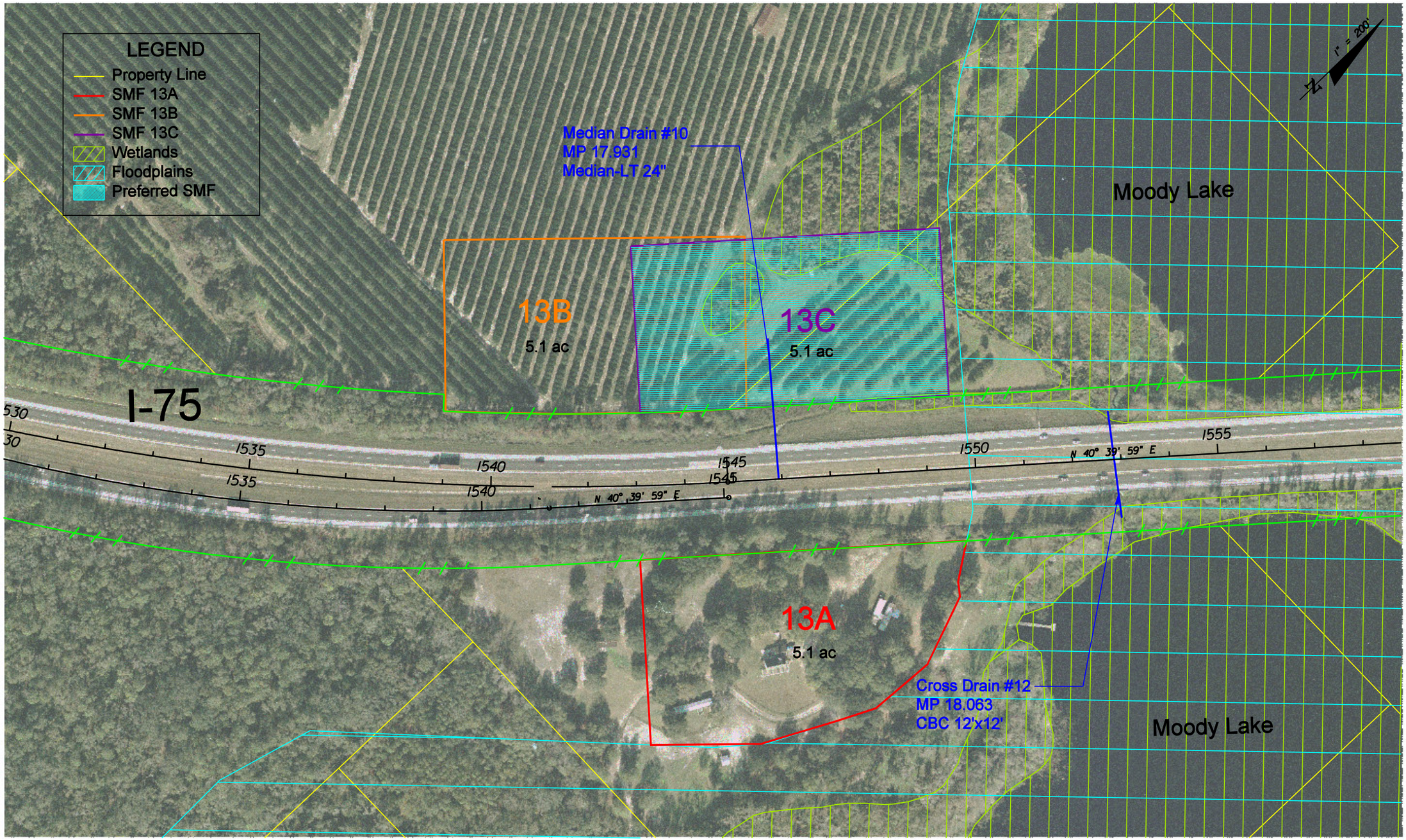

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CONCEPT PLANS

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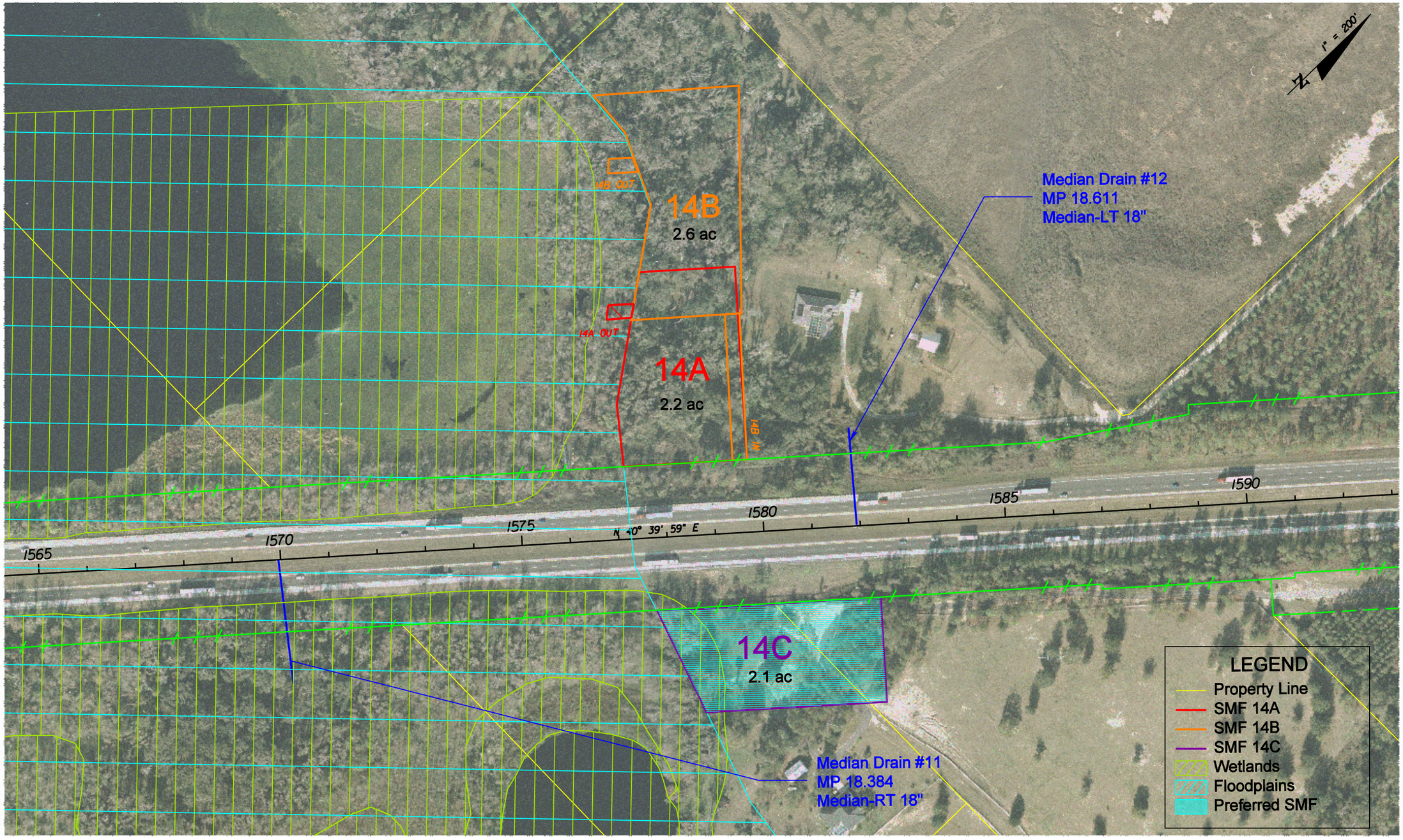

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CONCEPT PLANS

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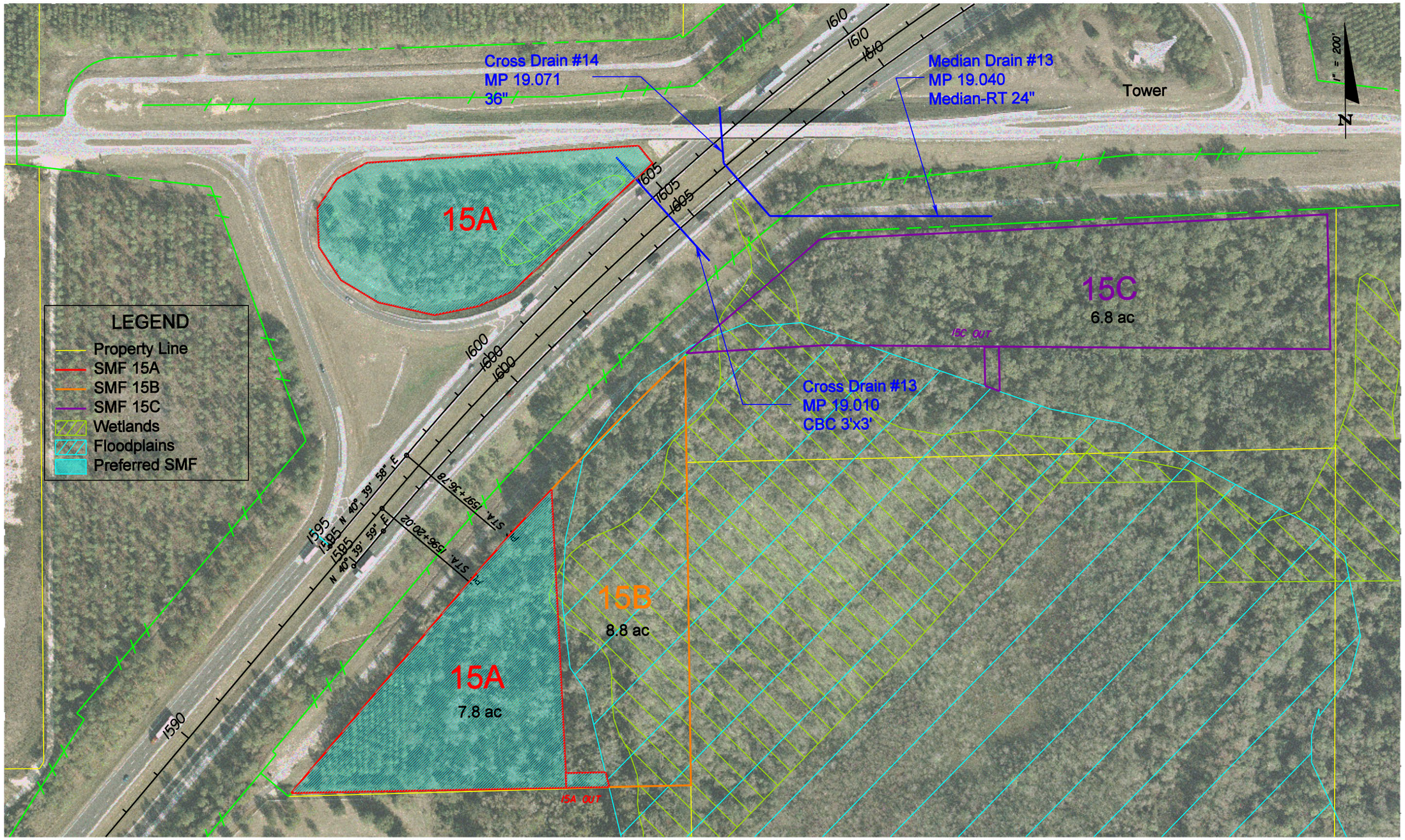

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CONCEPT PLANS

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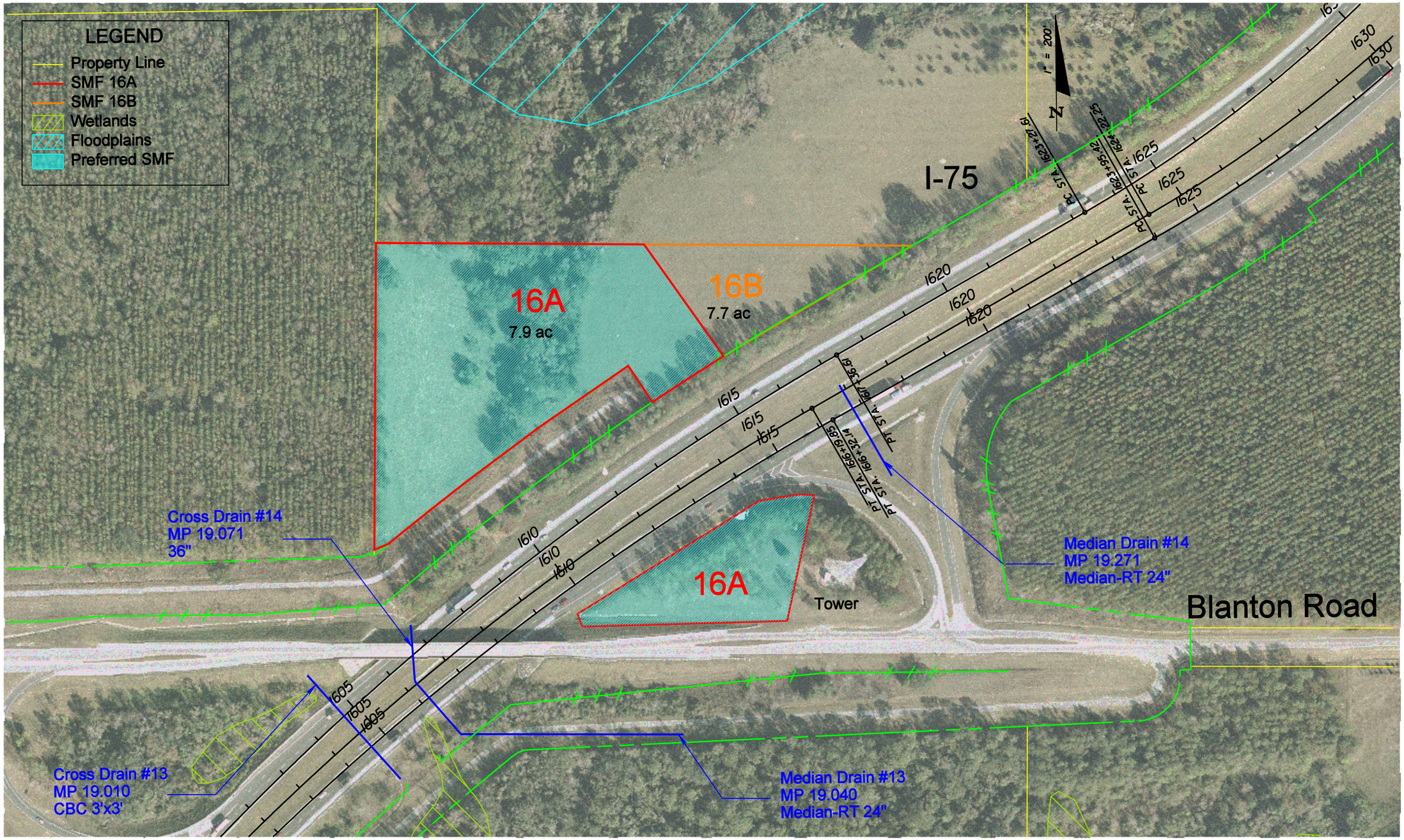

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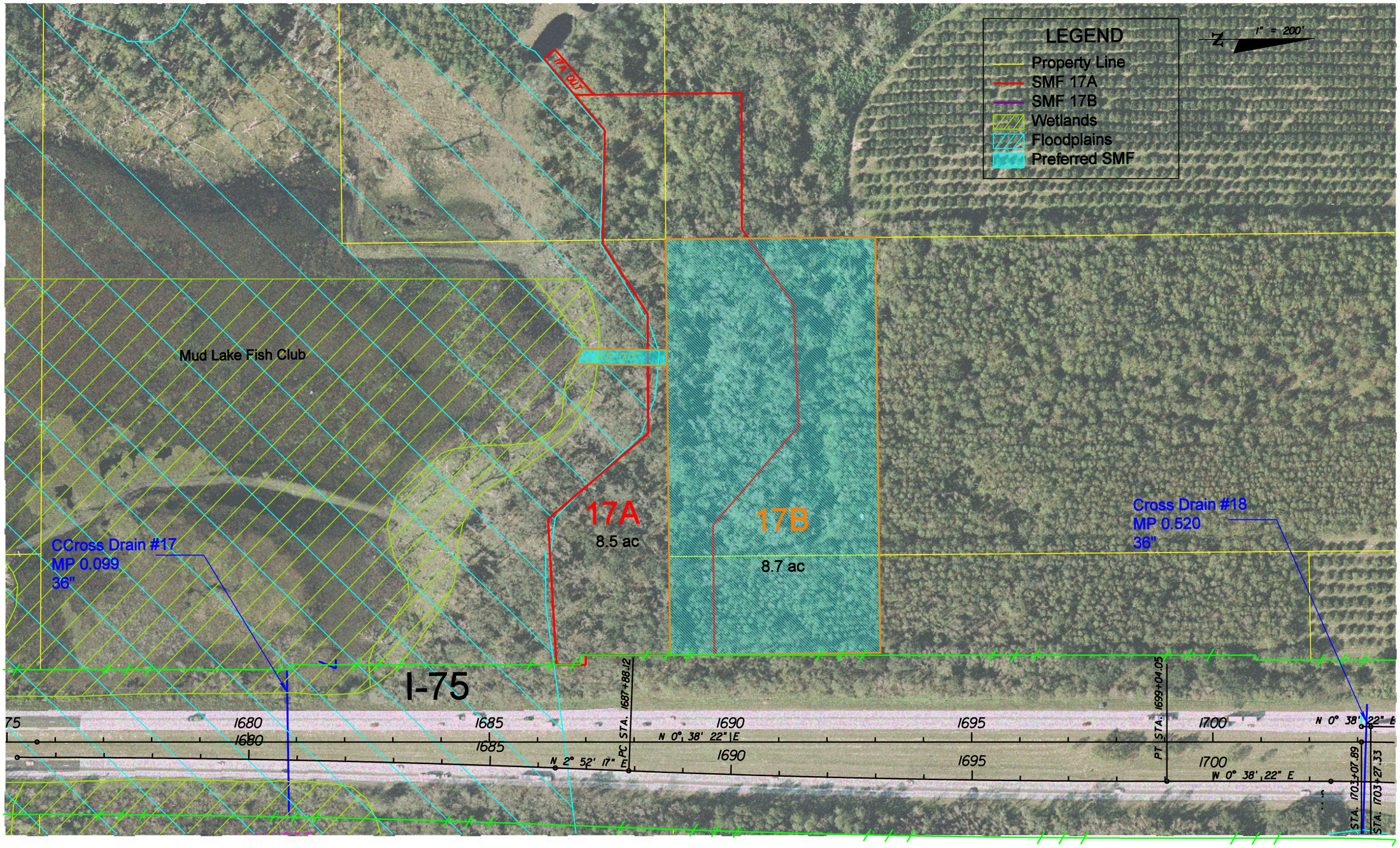

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	PASCO HERNANDO	411014-1-32-01

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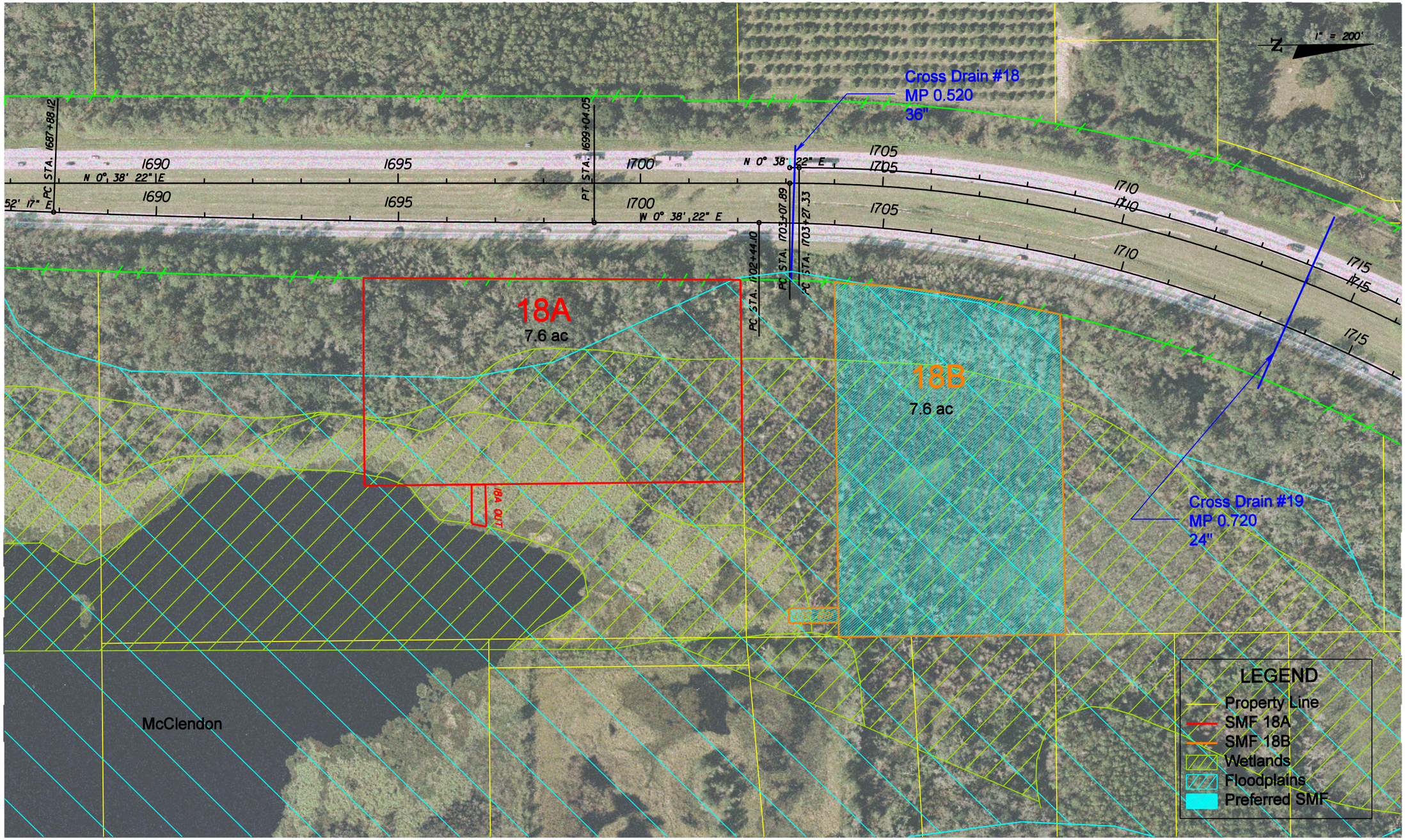

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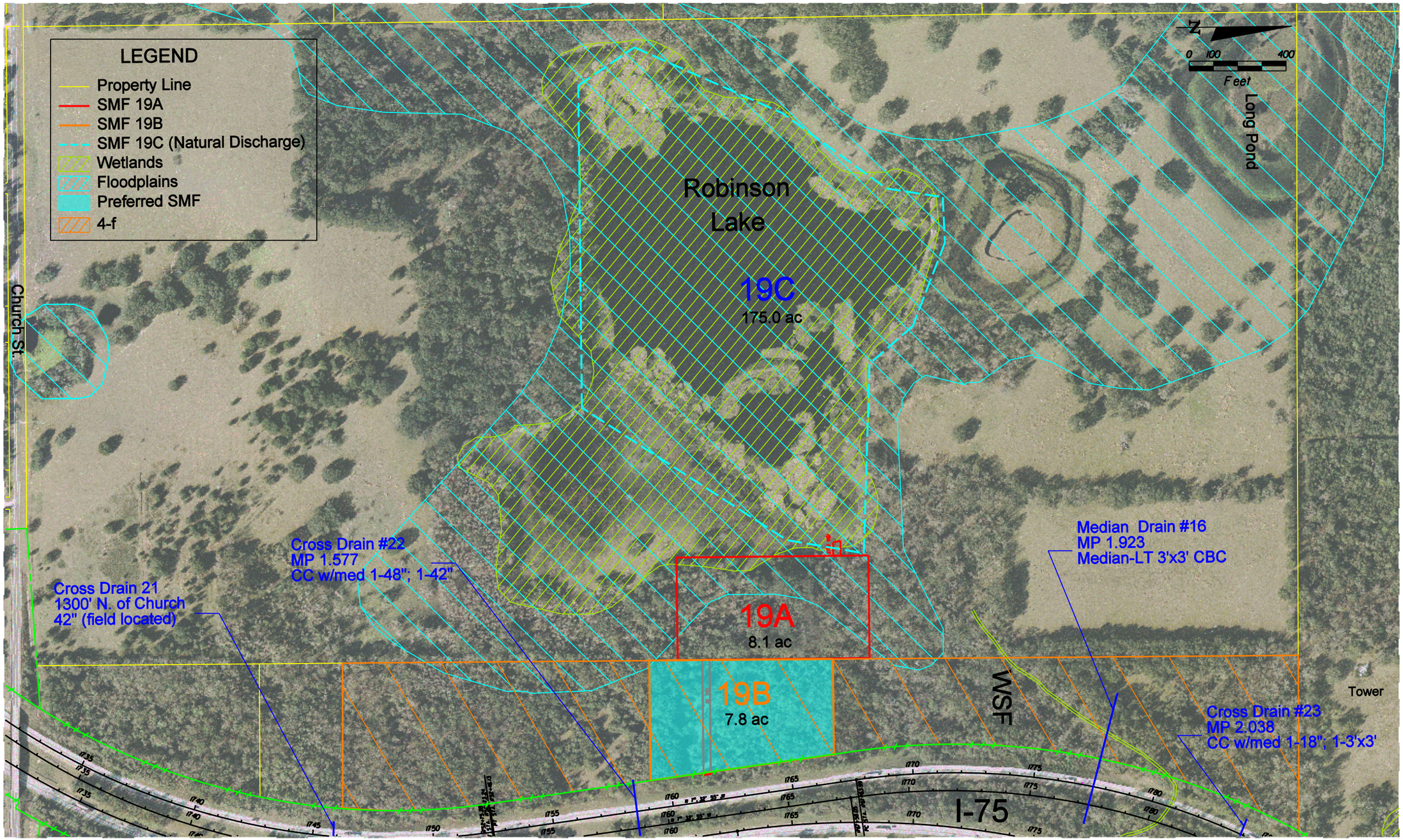

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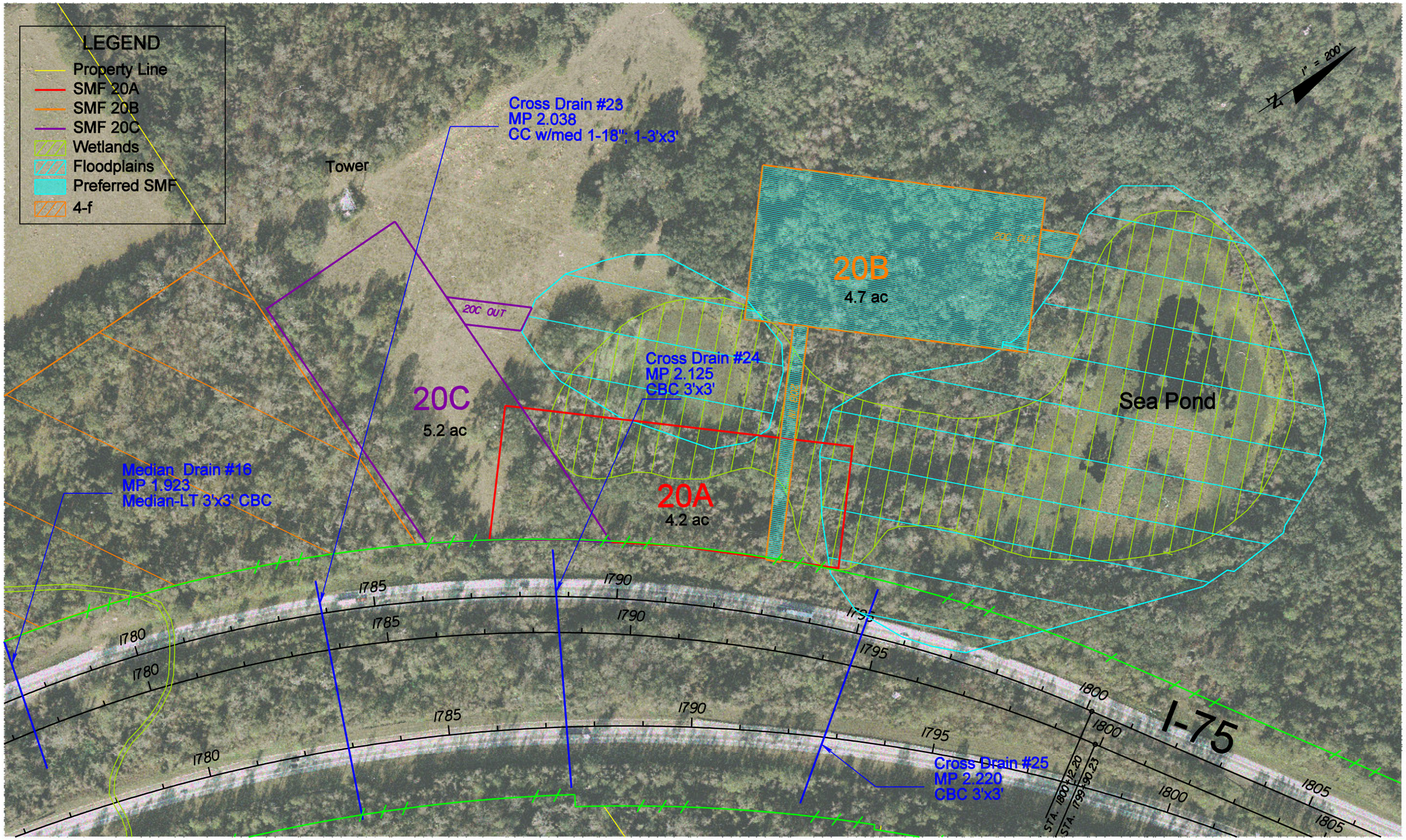

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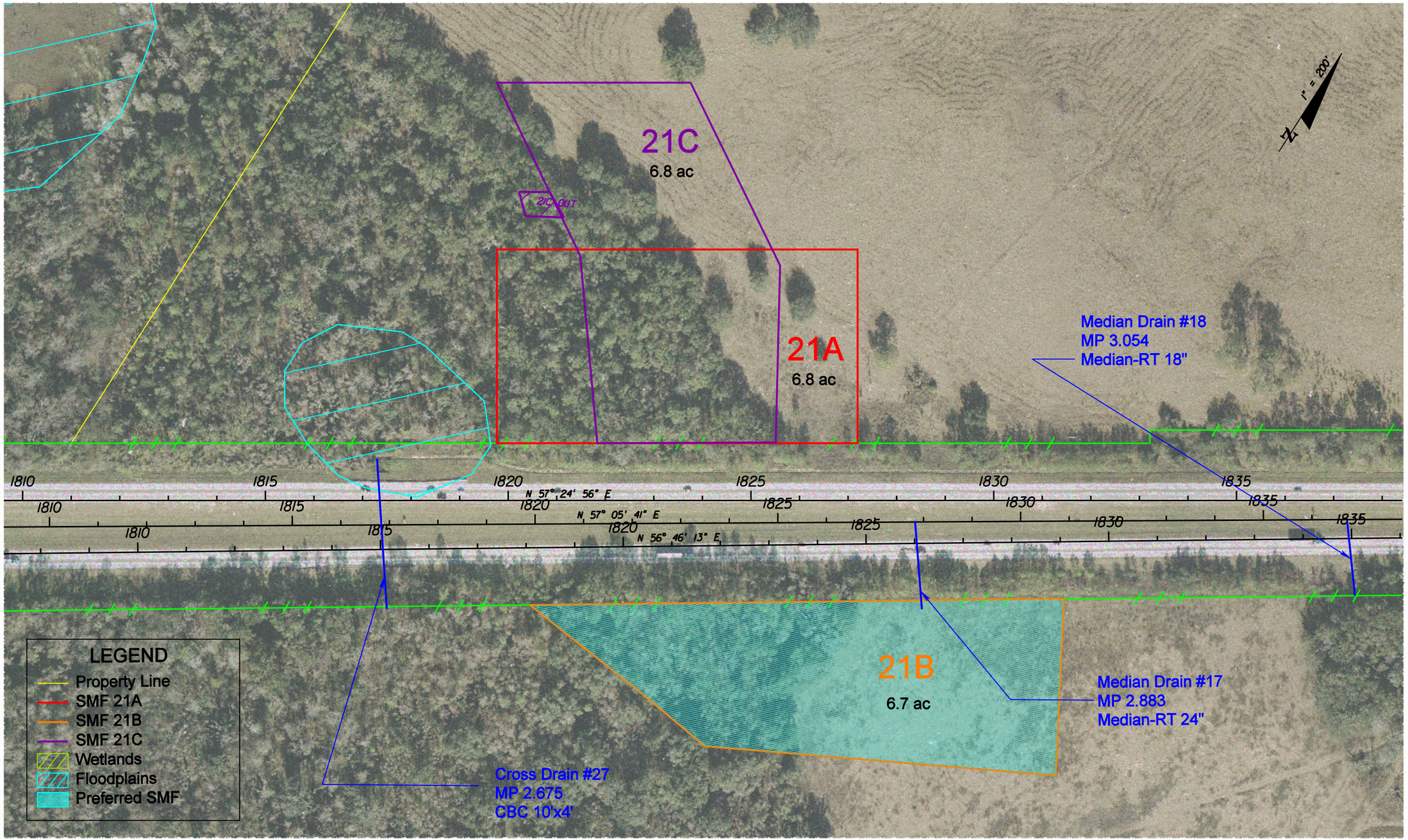

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I-75 PD&E
CONCEPT PLANS

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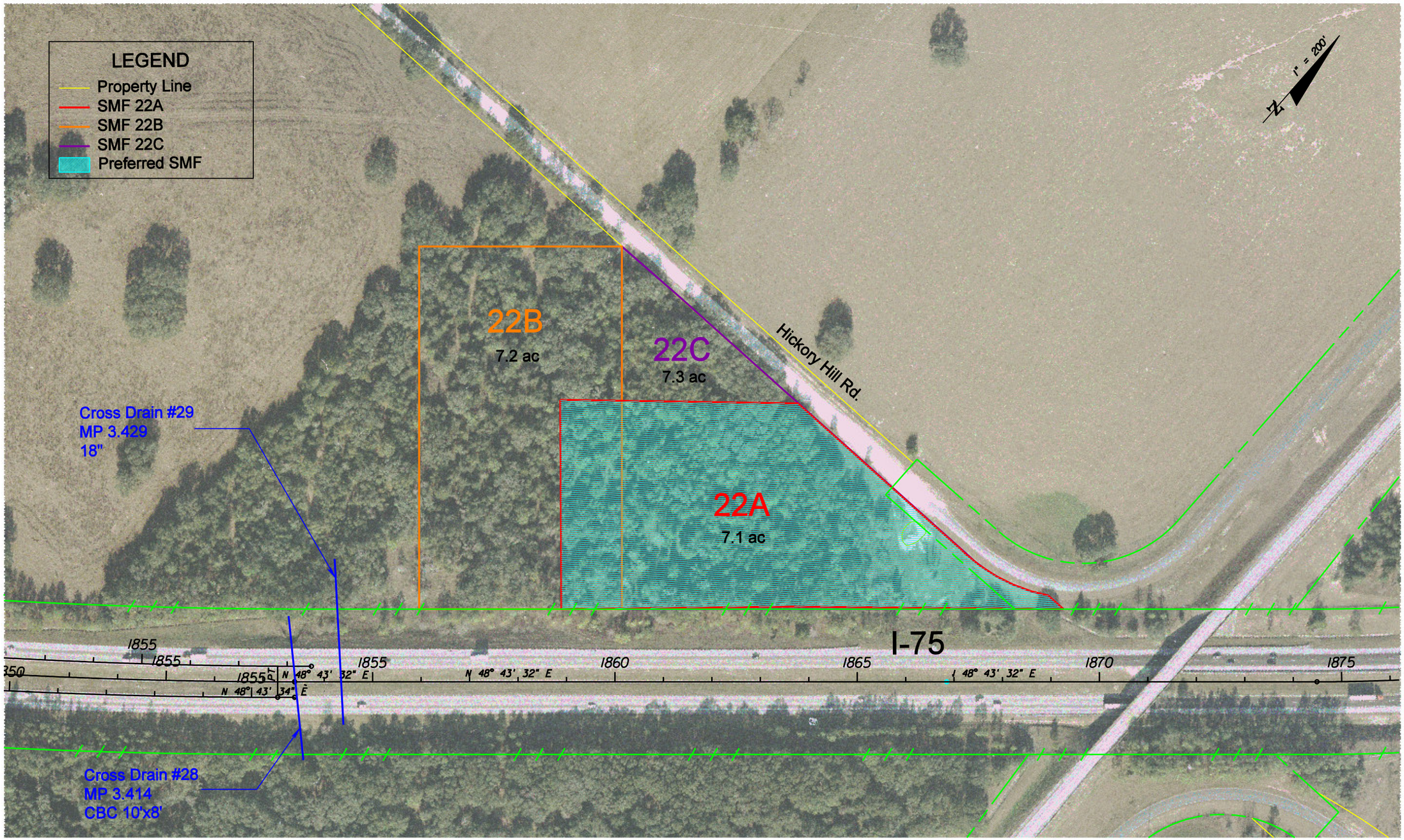

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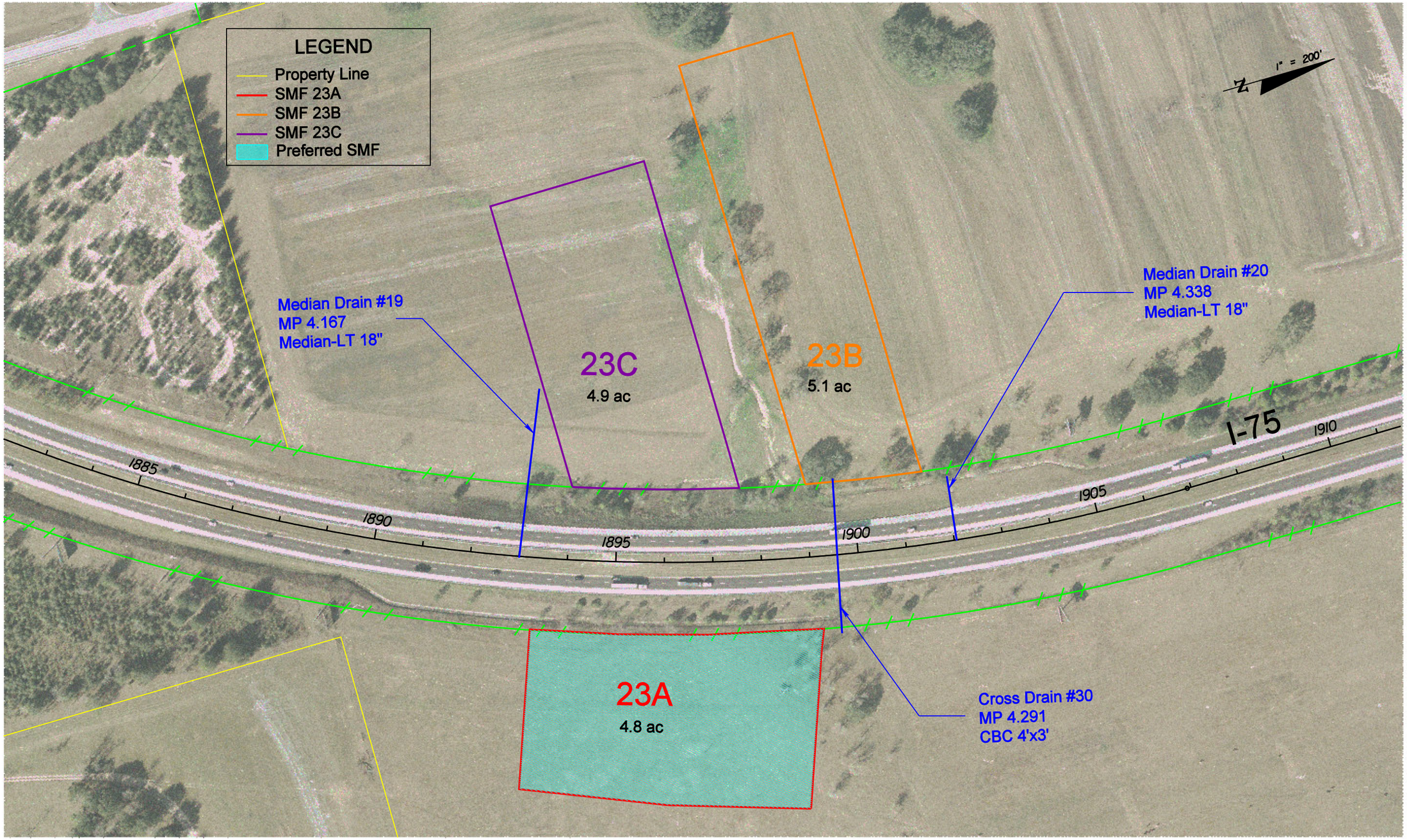

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I-75 PD&E
CONCEPT PLANS

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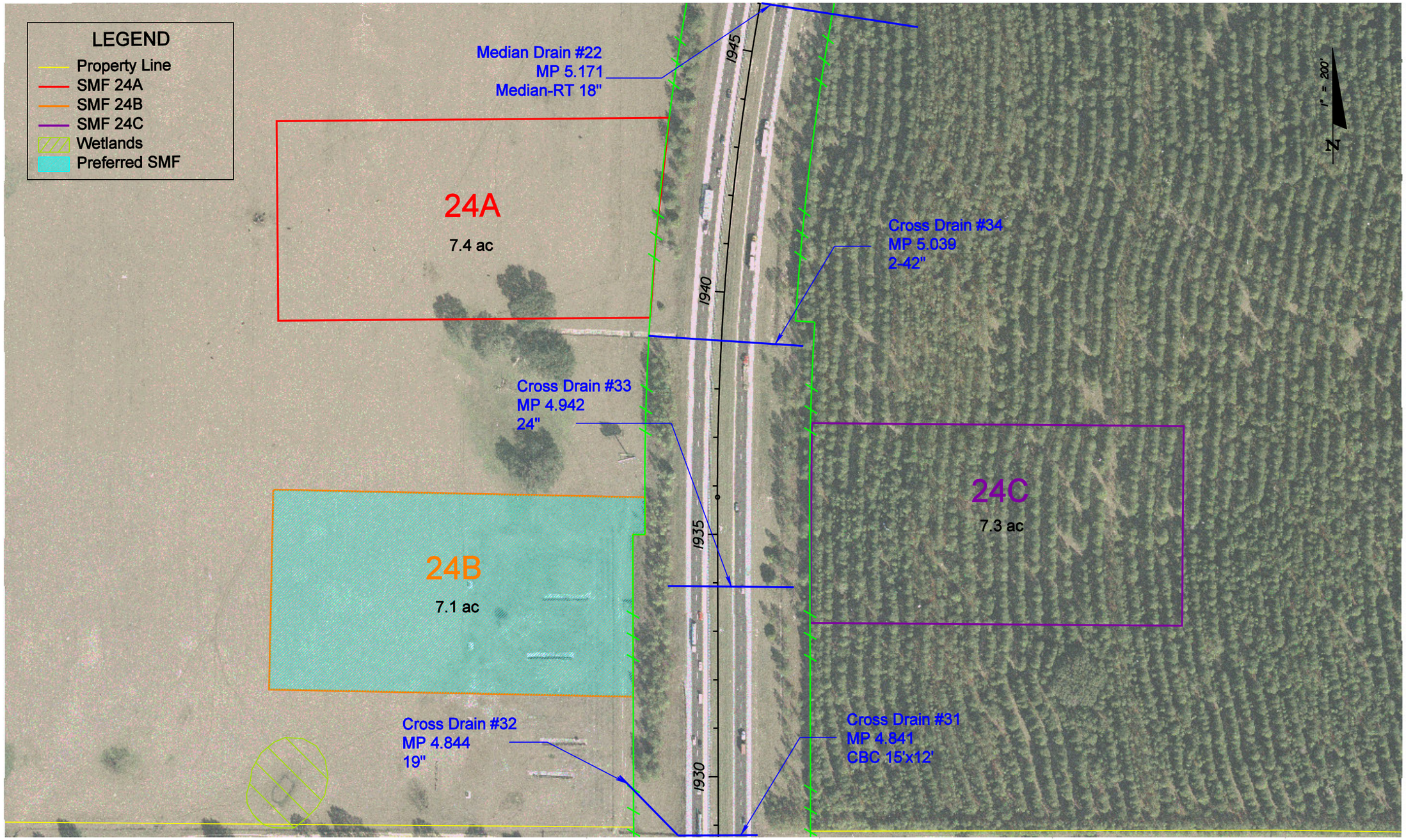

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SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

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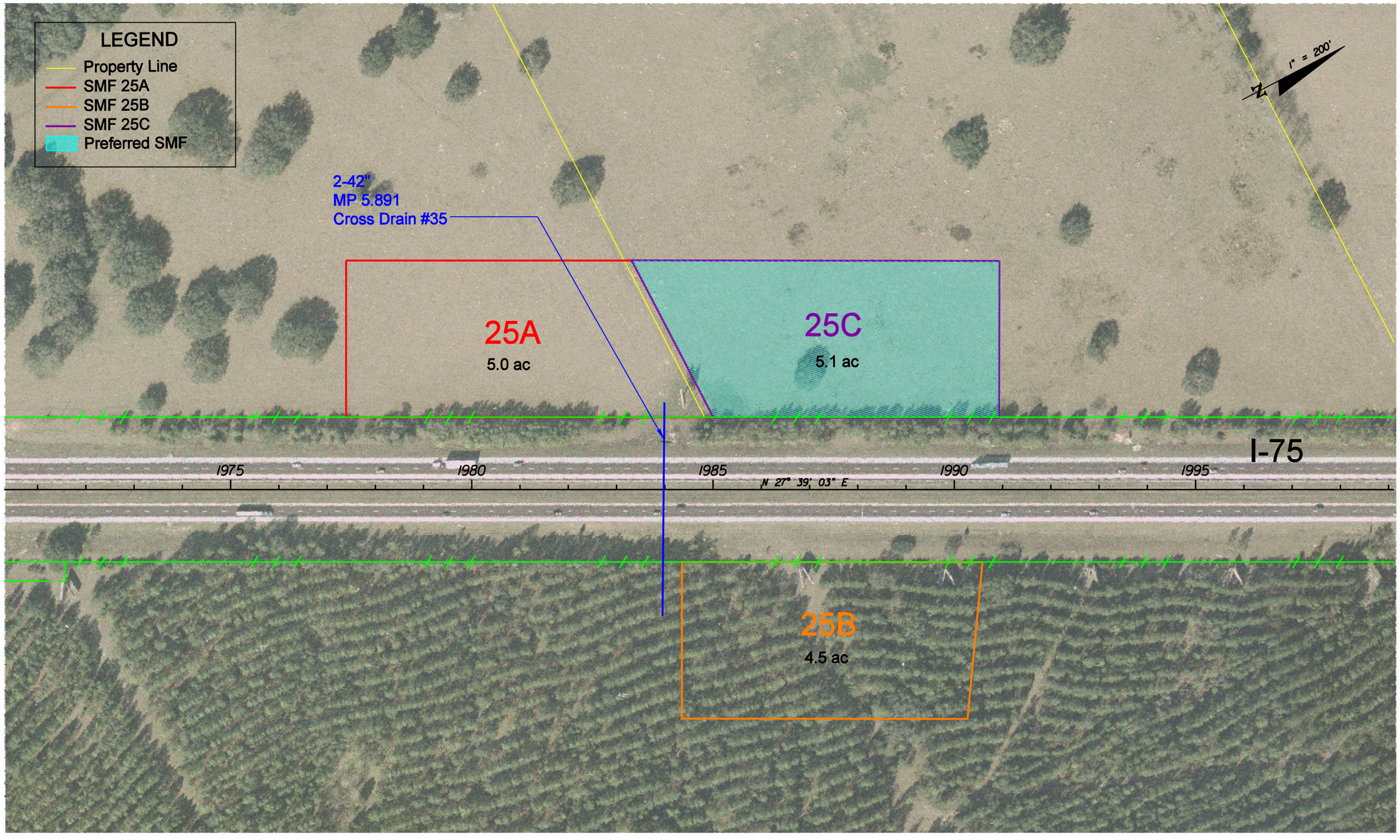

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I-75 PD&E
CONCEPT PLANS

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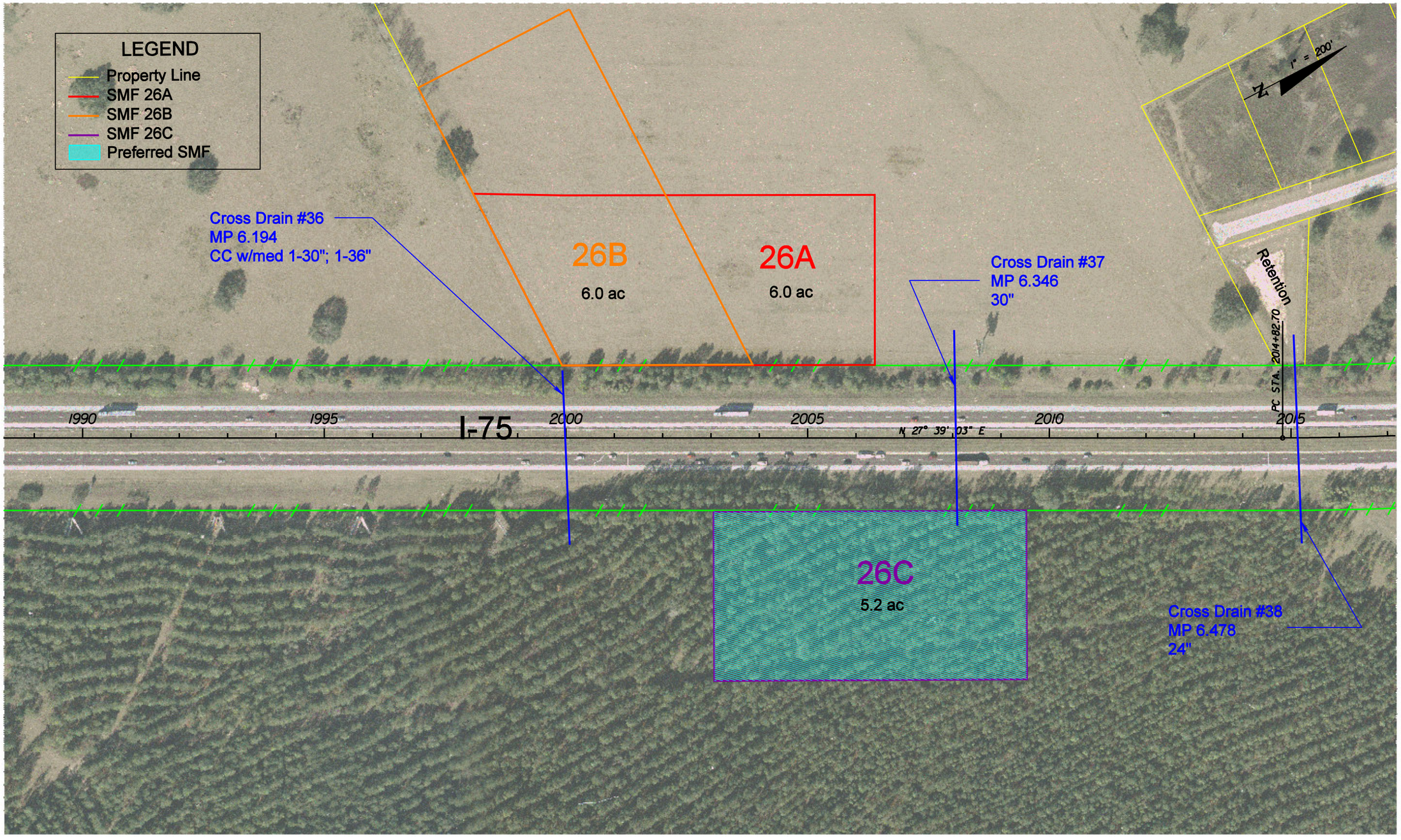

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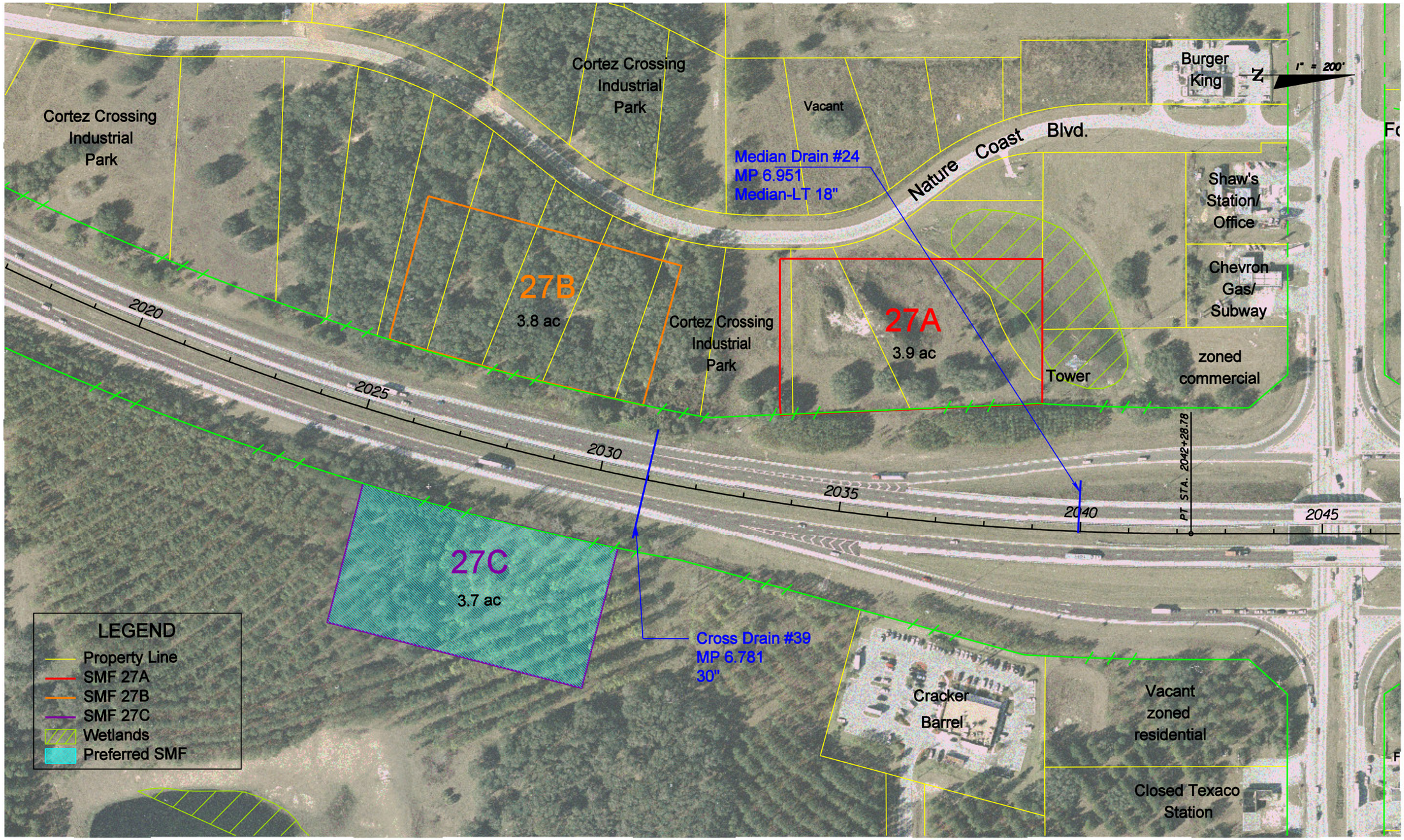

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SR-93	HERNANDO	411014-1-32-01

I-75 PD&E CONCEPT PLANS

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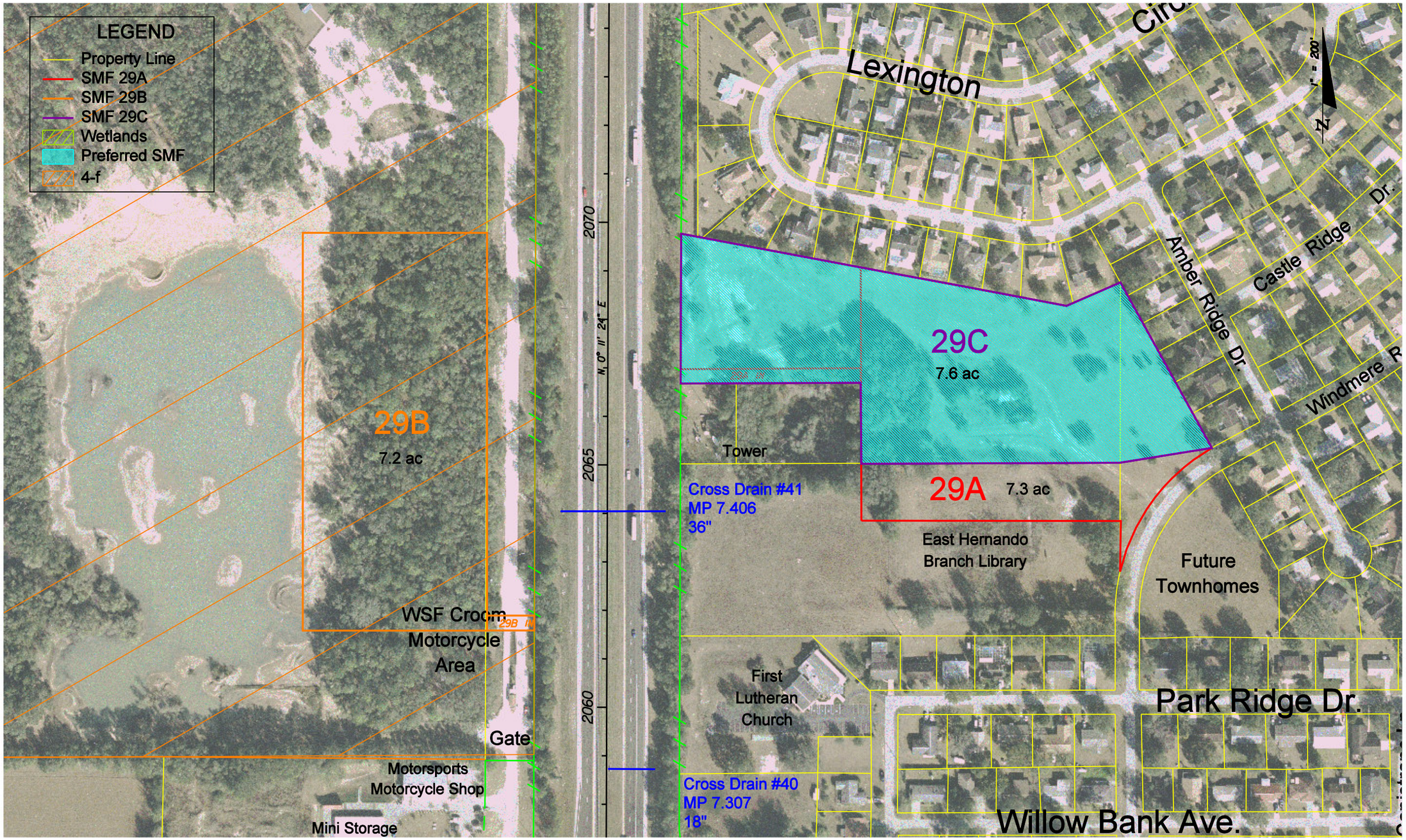

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CONCEPT PLANS

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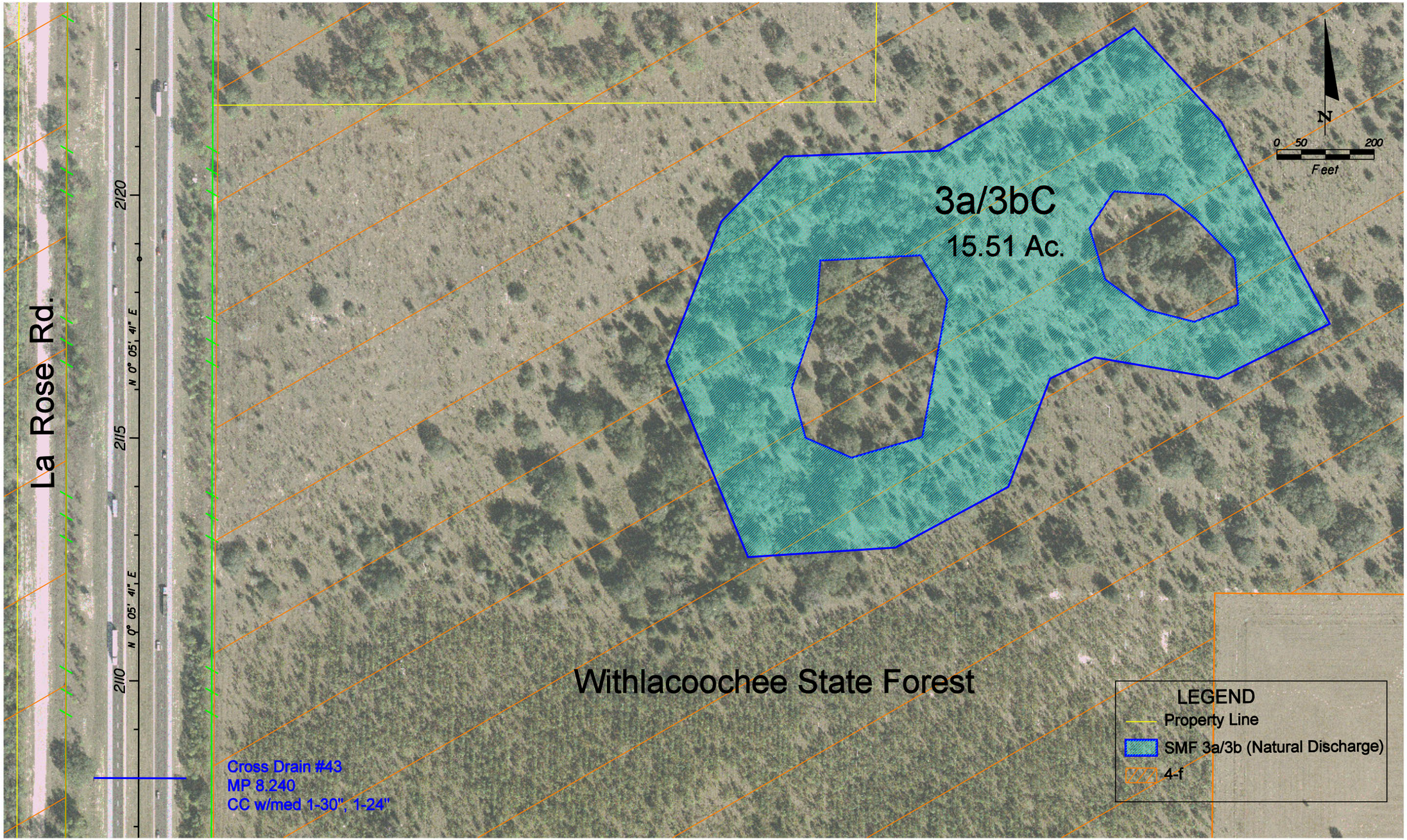

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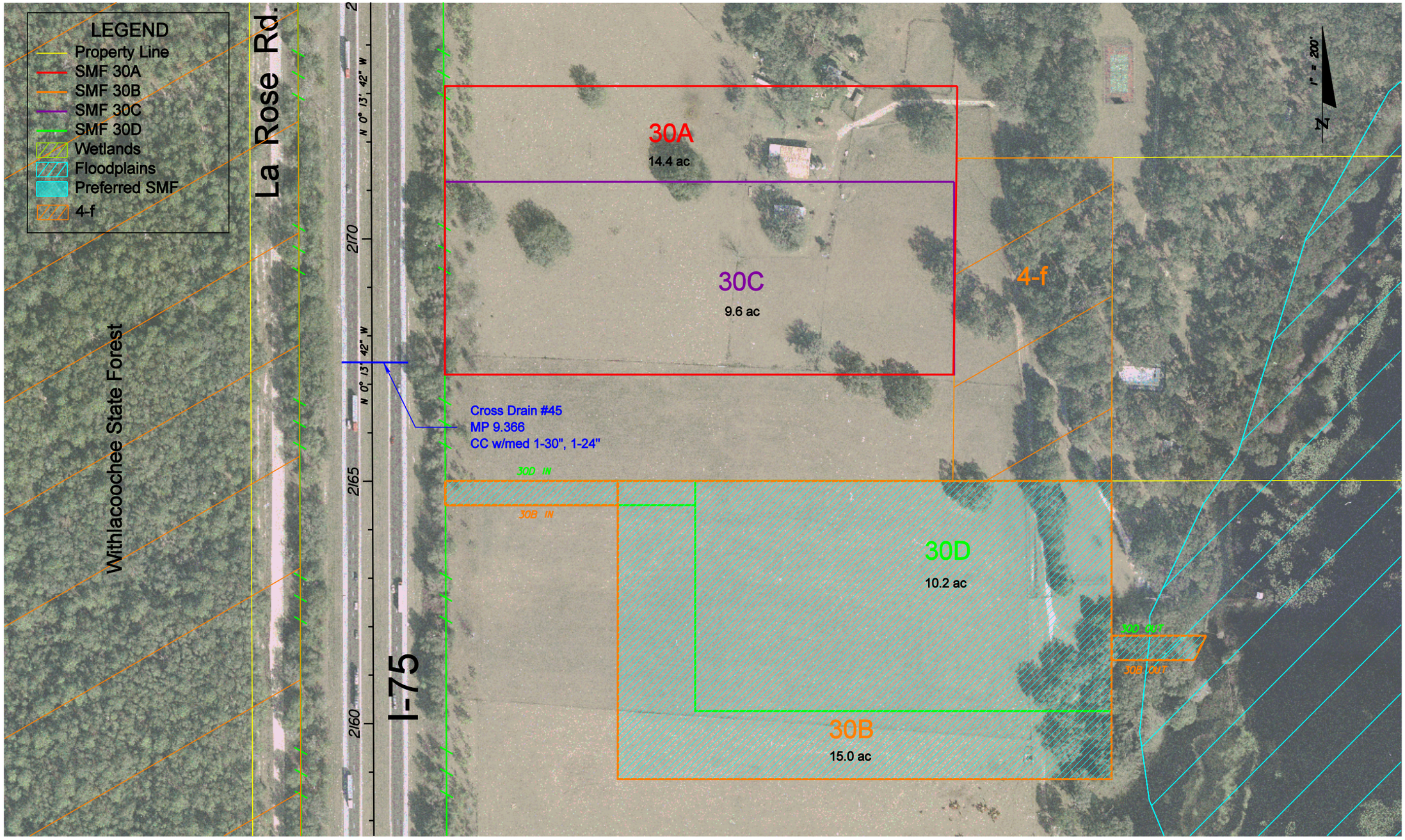
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 24



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

LOCHNER
13577 FEATHER SOUND DR. SUITE 600
CLEARWATER, FLORIDA 33762
FBPR CERTIFICATE OF AUTH. # 894

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

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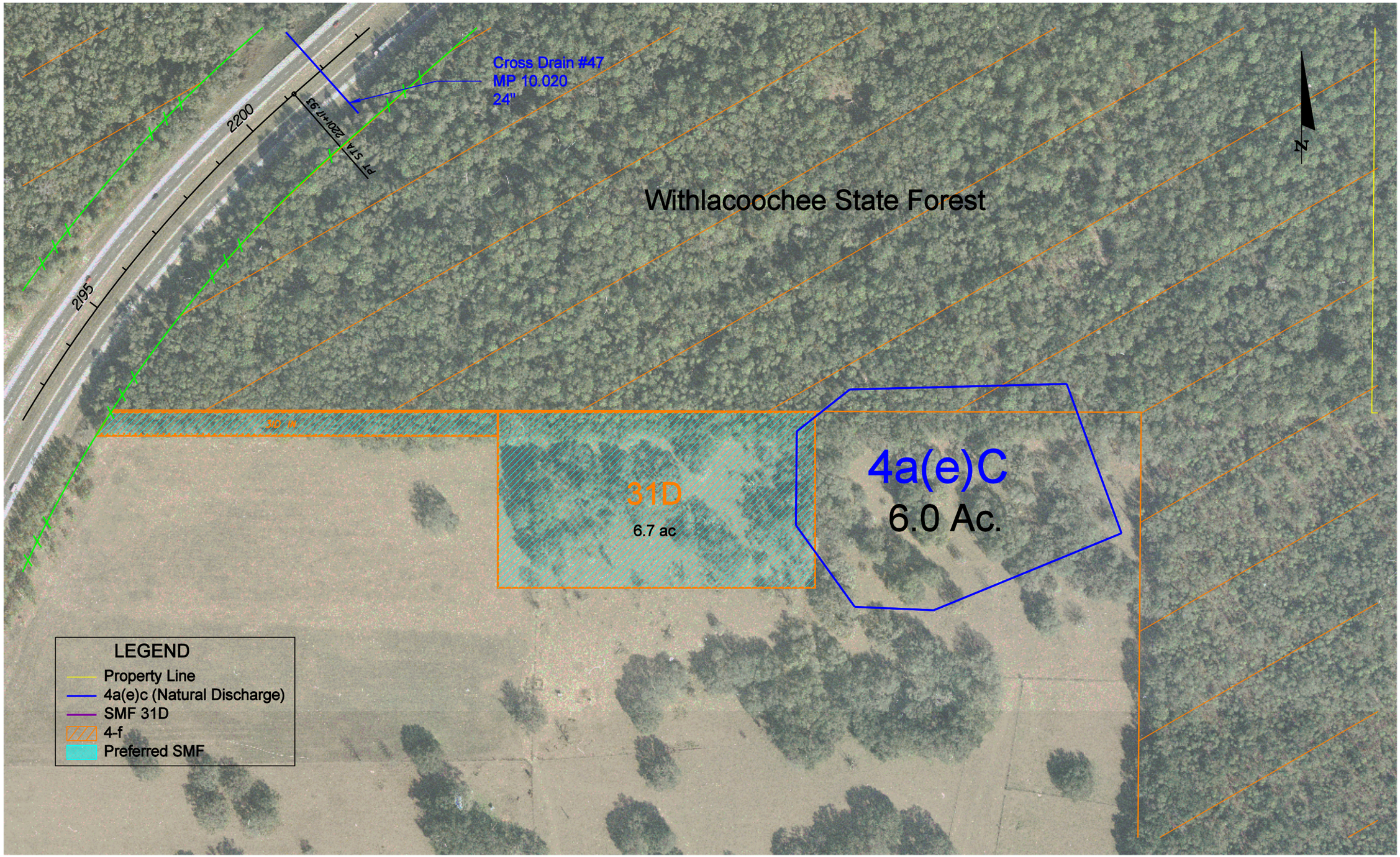
I-75 PD&E
CONCEPT PLANS

SHEET NO. 25



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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

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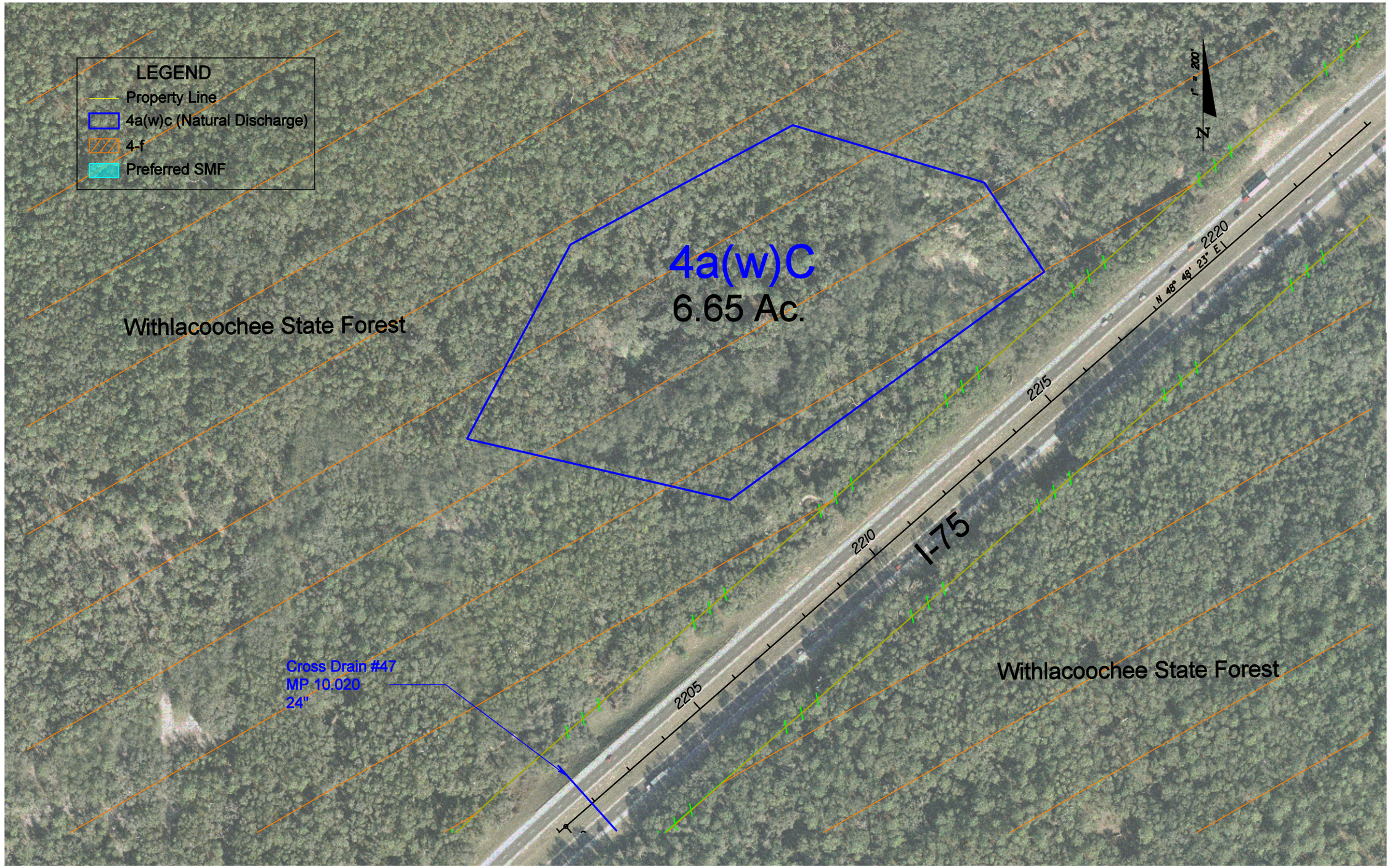
I-75 PD&E
CONCEPT PLANS

SHEET NO. 26



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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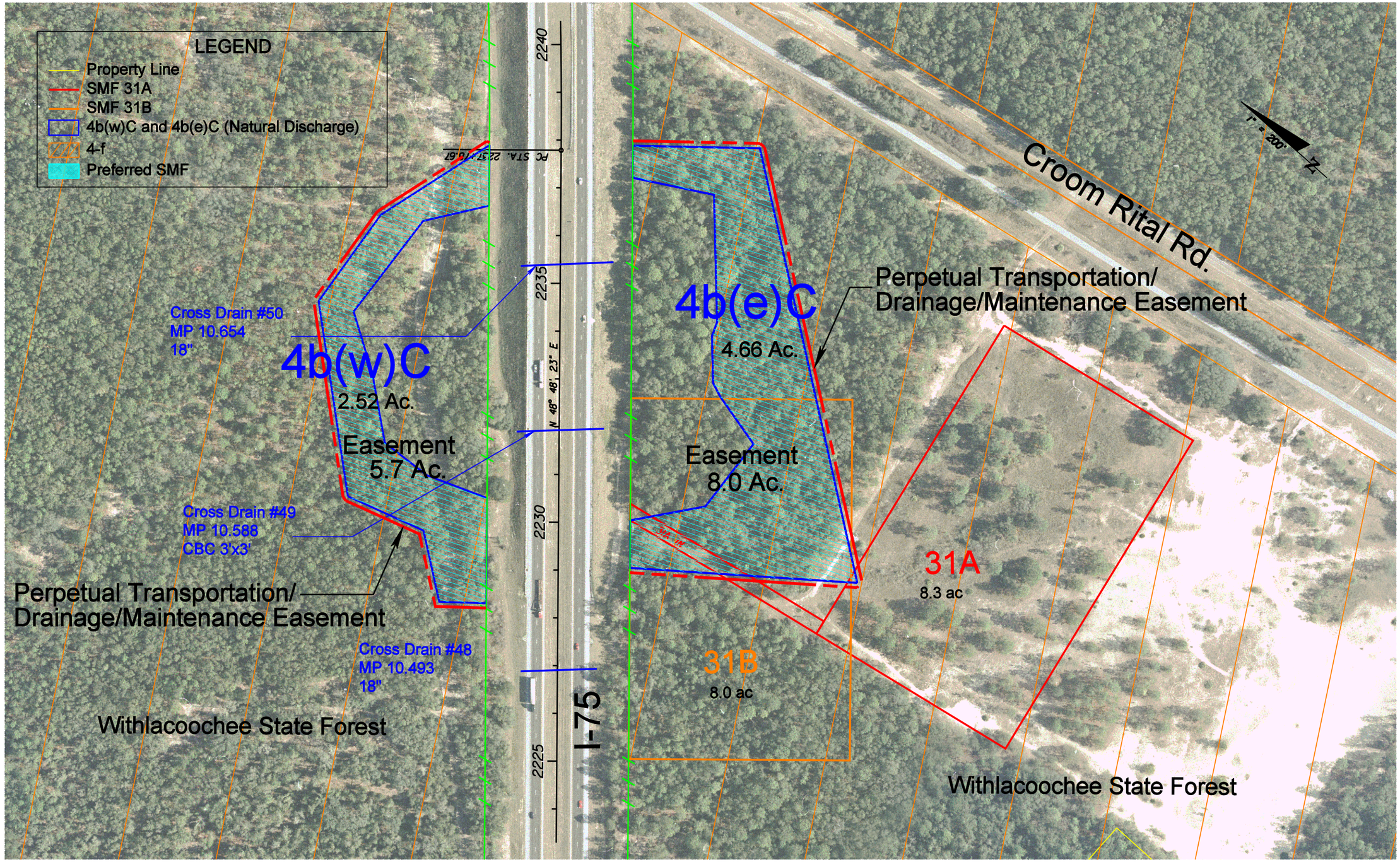
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 27



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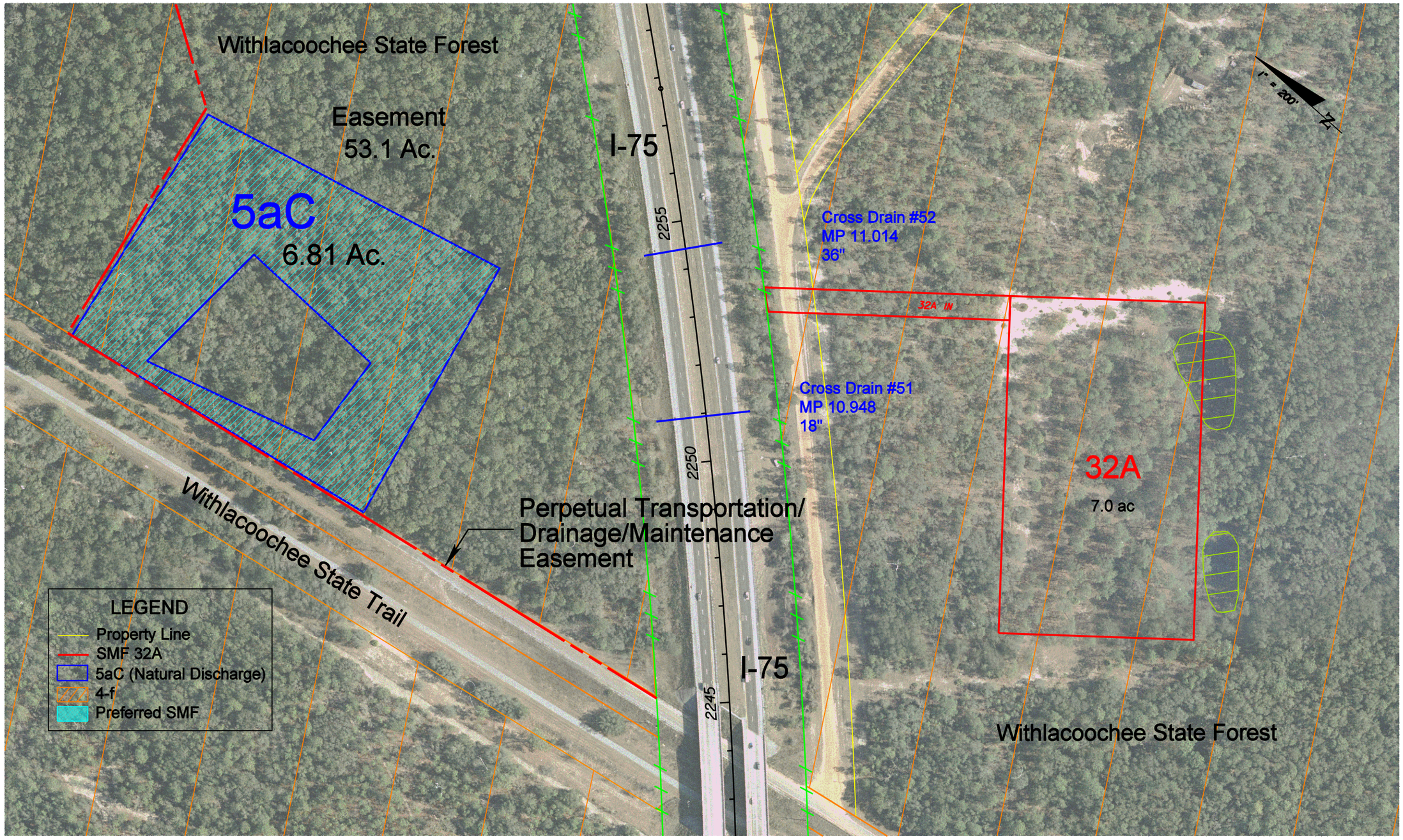
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 28



REVISIONS					
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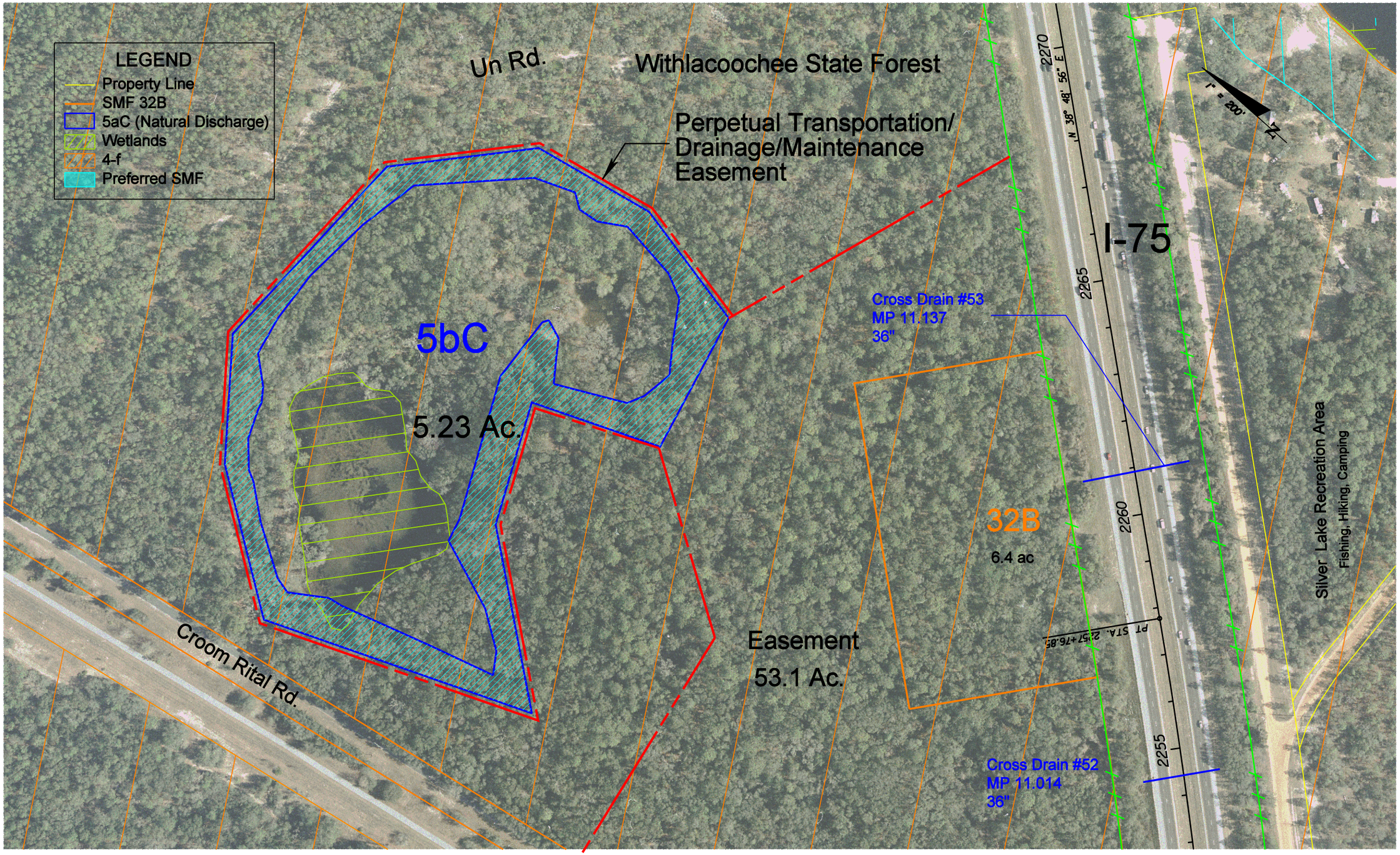
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 29



REVISIONS					
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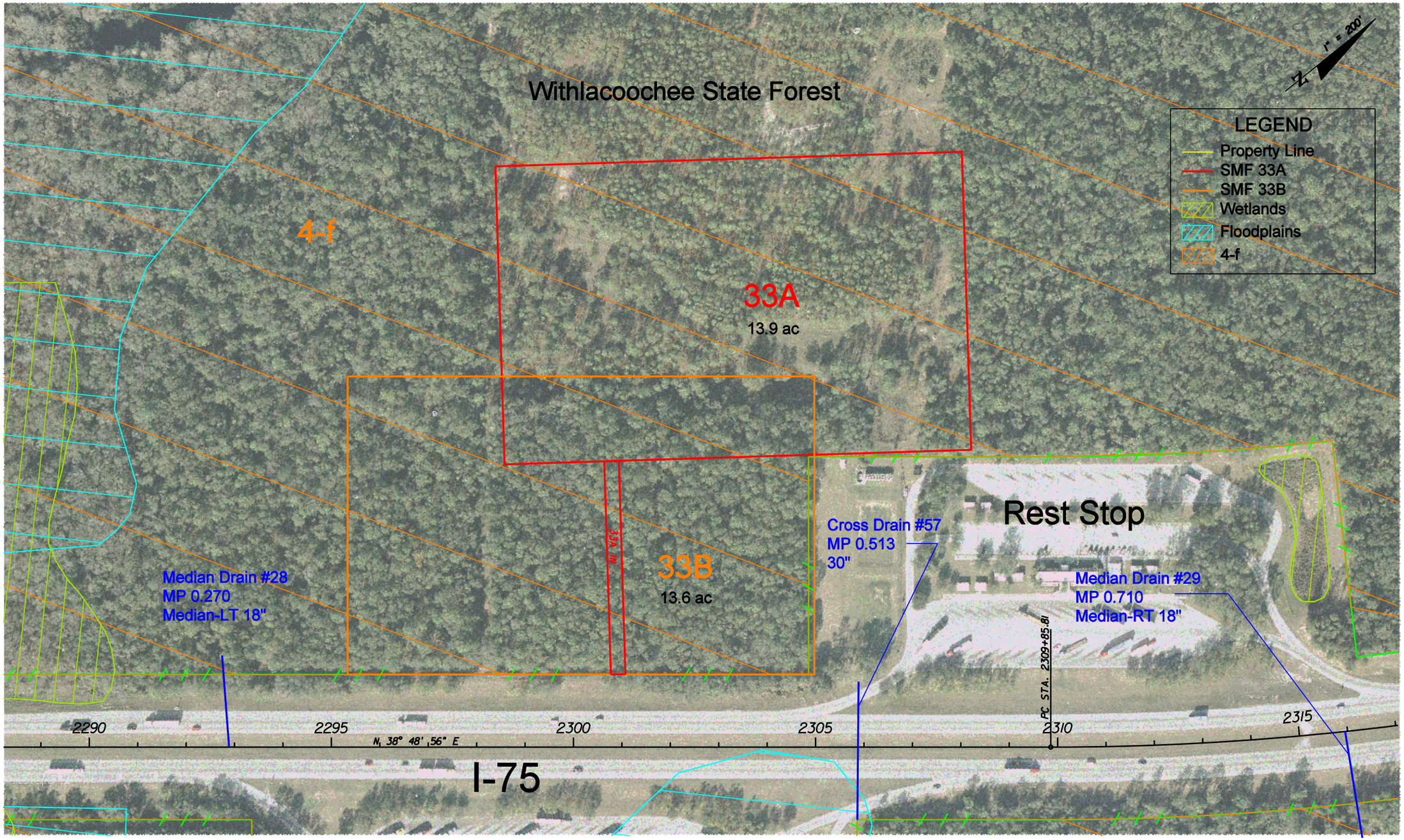
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	HERNANDO	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 30



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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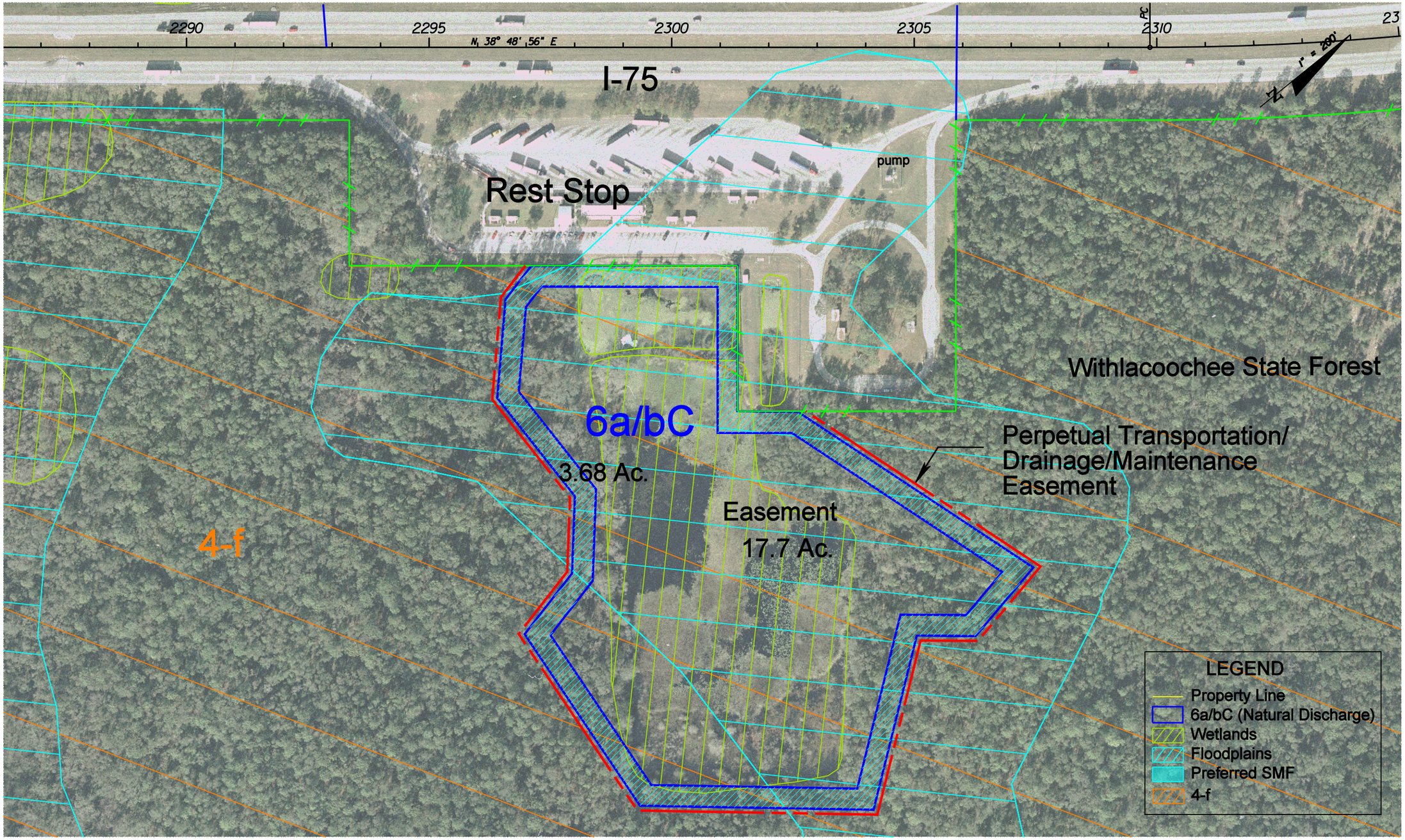
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	SUMTER	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 31



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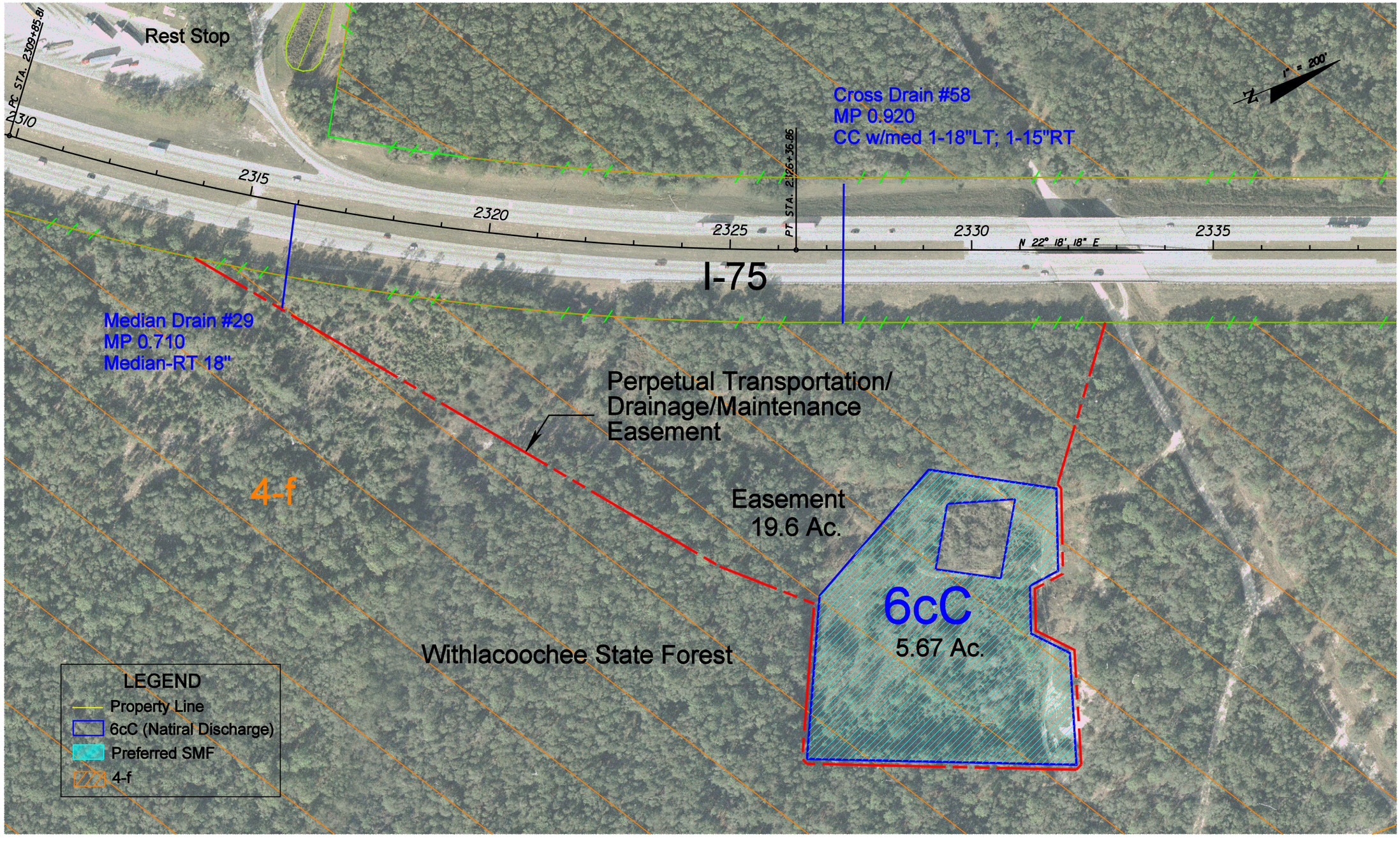
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	SUMTER	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 32



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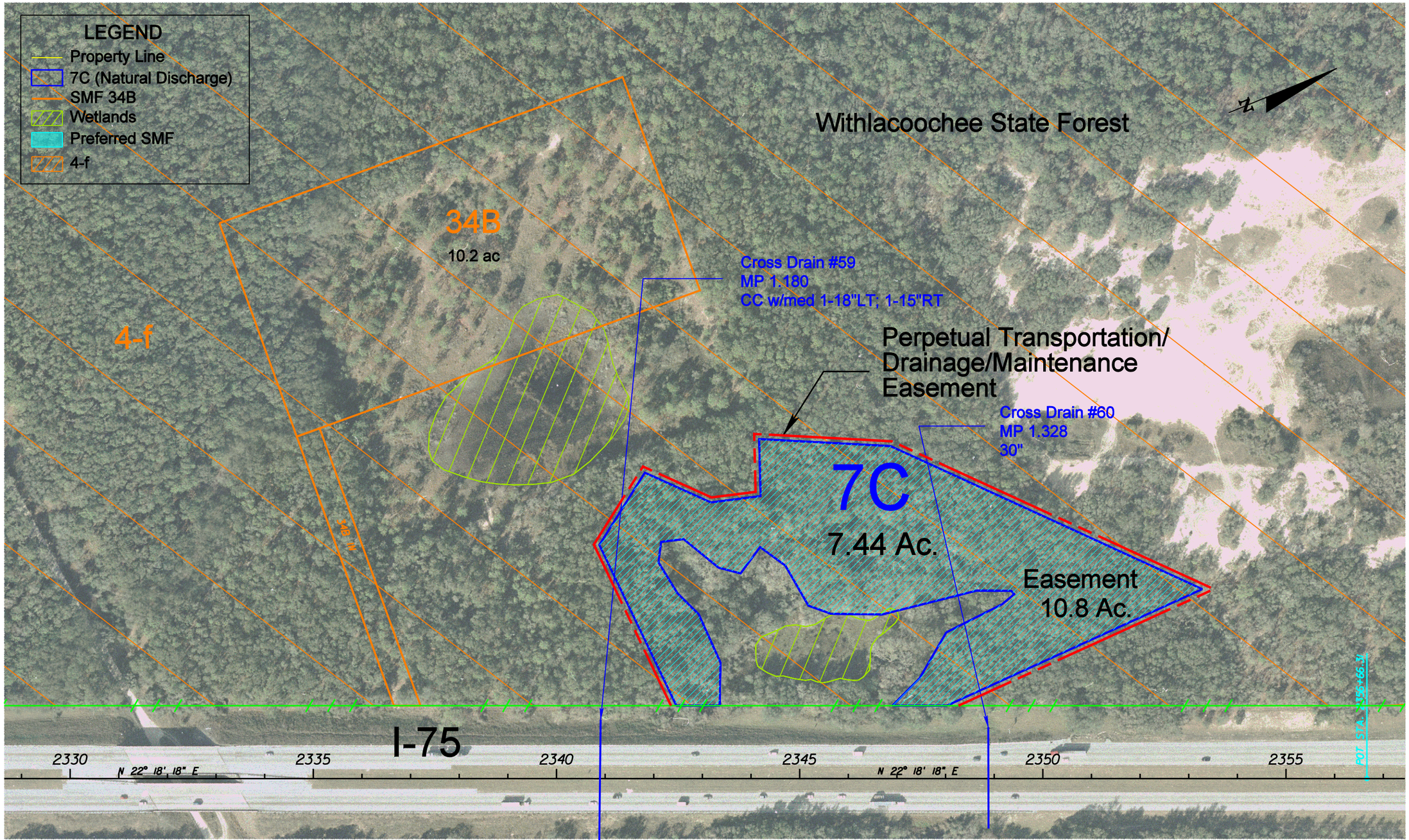
CLEARWATER, FLORIDA 33762
FBPR CERTIFICATE OF AUTH. # 894

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	SUMTER	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 33



REVISIONS					
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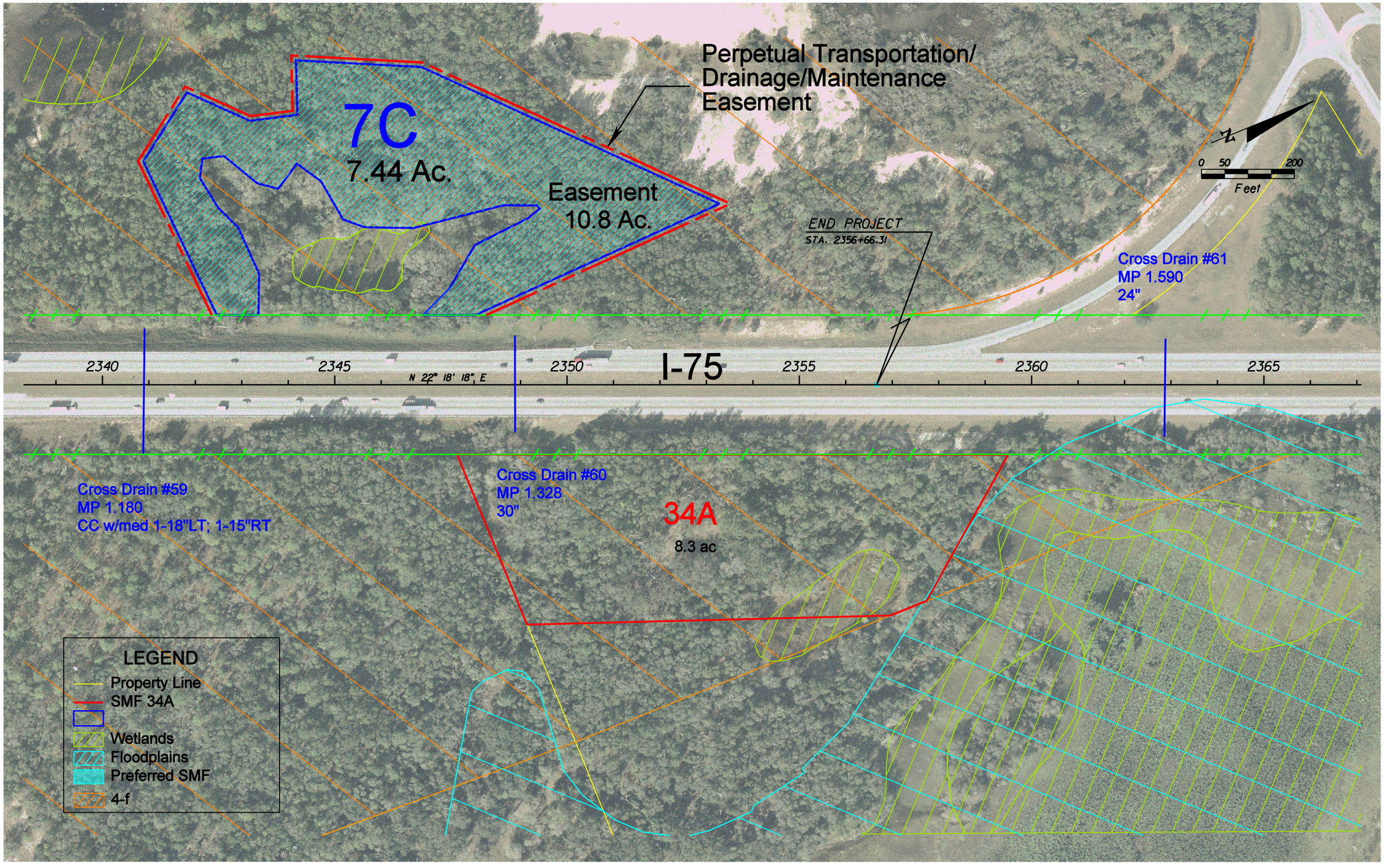
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	SUMTER	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 34



REVISIONS					
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-93	SUMTER	411014-1-32-01

I-75 PD&E
CONCEPT PLANS

SHEET NO. 35

Appendix B
Correspondence

LOCHNER

H. W. LOCHNER, INC., 13577 Feather Sound Drive,
Suite 600, Clearwater, FL 33762

Record of Telephone Call

To	John Kenty; File - 1948
From	Shelly Saunders
cc	Rick Sowers
Subject	I-75 PD&E Study; FPN 411014-1-22-01; FAP 0751-120I FDOT Maintenance Coordination for Sumter County
Spoke with	Randy Prescott – FDOT Leesburg Maintenance Office
Phone No.	(352) 315-3100

Date February 9, 2006

I called Mr. Randy Prescott with the Leesburg FDOT maintenance office to inquire about historical flooding issues along the subject project area. Our discussion is summarized below:

In general, his experience has been with the Sumter portion of our Interstate 75 Study. He stated that to his knowledge and understanding of previous complaints, there are no historical problems with flooding and there has been no overtopping of I-75.

I told Mr. Boone we will consider the issues we discussed in the study process.

LOCHNER
H. W. LOCHNER, INC., 13577 Feather Sound Drive,
Suite 600, Clearwater, FL 33762

Record of Telephone Call

To Herschel Conner; File - 1948

Date September 19, 2005

From Rick Sowers

cc Panos Kontses, Oscar Auler

Subject I-75 PD&E Study; FPN 411014-1-22-01; FAP 0751-120I
FDOT Maintenance Coordination

Spoke with Larry Boone – FDOT Brooksville Maintenance Office
16411 Spring Hill Drive; Brooksville, FL 34604

Phone No. (352) 797-5700

I called Mr. Larry Boone with the Brooksville FDOT maintenance office to ask about his experience with the "natural conveyance and storage areas" used for stormwater management on two sub-basins for the US 98 improvements in Hernando and Citrus County near the Suncoast Parkway, and to inquire about historical flooding issues along the subject project area. Our discussion is summarized below:

In general, his experience has been with the Hernando and Pasco Counties' portion of our Interstate 75 Study. He stated that to his knowledge and understanding of previous complaints, there are no historical problems with flooding and there has been no overtopping of I-75. He also noted that the Hernando/Pasco portion of I-75 is under asset management through Infrastructure Corporation of America (ICA).

To his knowledge, he also stated that their have been no maintenance issues up to this point, since the completion of improvements to US 98, including the 2 sub-basins that utilize natural conveyance to existing storage areas. In his opinion, and in consideration of the general soils characteristics, particular attention should be given to conditions south of the first overpass located south of SR 50, where soils conditions may not be as favorable.

I told Mr. Boone we will consider the issues we discussed in the study process.

LOCHNER

H. W. LOCHNER, INC., 13577 FEATHER SOUND DRIVE, SUITE 600, CLEARWATER, FLORIDA 33762 (727) 572-7111
FAX (727) 571-3371

I-75 PD&E Study
from SR 52 in Pasco County to South of CR 476 in Sumter County
FPN: 411014-1-22-01; FAP: 0751-120I

Meeting Minutes – SWFWMD Pre-Application Meeting
Meeting Date: March 15, 2005

The following summarizes notes taken by Angie Patterson and Rick Sowers at the above-referenced meeting. The purpose of the meeting was to introduce the project and establish criteria for the development of stormwater management facility (SMF) recommendations for the widening of I-75 from 4 lanes to the proposed typical section in Pasco, Hernando and Sumter Counties.

Attendees: Wojeich Mroz, SWFWMD
Kim Dorsten, SWFWMD
Tim Polk, PBS&J/FDOT
Rick Sowers, H.W. Lochner, Inc.
Angie Patterson, H.W. Lochner, Inc.

- Basin Studies: No studies have taken place in Sumter county; however, there are a number of basin studies that have taken place along this project in Pasco and Hernando Counties, including:
  - Withlacoochee River Study (from SWFWMD)
  - SR 52 area/Cypress Creek/Bella Verde (South of SR 52)
    Contacts: Mike Finch at RS&H, David Arnold of SWFWMD
  - Old Pasco Road (by Pasco County/King Engineering)
  - Hernando County Studies, check with Gene Altman of SWFWMD
  - Published Study of Lake Levels (SWFWMD)

- Water Quality Treatment Criteria: in the case where we must do re-construction (change of profile, etc.), we must treat all of the directly connected impervious area (DCIA); i.e. all lanes plus shoulders. In the case, however, where we are widening only, we must treat a minimum of the new impervious area (added lanes) and we are strongly encouraged to treat as much DCIA as we can possibly treat. It was noted that FDOT will likely support the treatment of all DCIA, where possible.

- Treatment Criteria for Withlacoochee River Basin: this basin will require 50% more treatment for direct discharge to the river since it is an Outstanding Florida Water (OFW).
- Treatment Criteria for basins with proposed discharge to active sinkholes: double treatment will be required where discharge is to basins that are determined to have active sinkholes according to a geotechnical evaluation.

- Water Quantity Criteria: It was noted that there will probably be some open and some closed basins along this project. We received graphics that show the design of wet detention facilities (conservation method) in both open and closed basins. See attached graphics.

- TMDL Criteria: When asked what the chances are that we will have to deal with TMDL criteria for this project, The SWFWMD's response indicated that the application of TMDL criteria is still a long way off and the time frame is unknown at this time. It is appropriate to use presumptive criteria for this project.

- Linear SMF's: Although not preferred from a safety standpoint, if we should choose to use linear ponds within existing right-of-way (in the vicinity of potential Section 4(f) resources), SWFWMD's only comment is that we should use 4:1 side slopes and a depth of only 1-2 ft. for safety reasons.

- SMF's in the Withlacoochee Forest: Tim Polk posed the idea of not implementing SMF's in the area through the Withlacoochee Forest where there are closed depressions off-site. Instead, he suggested allowing the runoff to naturally flow to the low point of the depression. Wojeich agreed that this would be a viable alternative with appropriate modeling of the proposed condition and agreement of the property owner. The key will be to see if the Division of Forestry is interested in pursuing this option.

- Sovereign Submerged Lands: We need to check if the Withlacoochee River is a sovereign submerged land. If so, proprietary authorization may be needed from the state.

THIS SPACE IS FORMATTED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING AND PROVIDE NOTE TAKING SPACE. A SUPPLEMENTAL "PROMPT LIST" OF DISCUSSION ITEMS IS ATTACHED, WHICH SHOULD BE EXAMINED BY THE APPLICANT PARTIES PRIOR TO THE MEETING TO IDENTIFY TOPICS FOR DISCUSSION.

Southwest Florida Water Management District
Resource Regulation Division

ERP Pre-Application Meeting NOTES

FILE No.

Date: 3/15/05
Time: 11.00
Project Name: I-75 IN PASCO, HERNANDO, SUMTER
Attendees: ANGIE PATTERSON (727) 572 7111
WMM, KIM

County: PASCO, HERNANDO, SUMTER **S/T/R:** 29/22/21
Total Land acreage: 20 miles **Project acreage:** 20 miles

Prior Onsite/Offsite Permit activity:
EXISTING 4 LANES NO PERMIT

Project Overview: 4 LANES TO 6 LANES

Site Information Discussion: (Site Topography, SHW Levels, Flood plain Elevations, Conveyance and Storage, Tailwater Conditions, Adjacent Offsite Contributing Sources, Receiving Waterbody, Karst Formations, Existing Wells, Contaminated Sites / Coordination w/ FDEP, etc.)

•

Environmental Discussion: (Wetlands Onsite, Wetlands On Adjacent Properties, Site Visit, Delineation, Permanent/Temporary Impacts, SHWL, Wetland Hydrology, Drawdown Issues, Alternatives Analysis, Elimination/Reduction, Secondary and Cumulative Impacts, T&E species, Conservation Easements, Buffers, Mitigation Options, Mitigation Costs, OFW, Aquatic Preserve, etc.) widening occurs w/in R.O.W. wetlands need verified around pond sites outside of R.O.W. and maybe w/in R.O.W.

• FDOT mitigation plan.

Sovereign Lands Discussion: (Title Determination, Delegated Authority, Correct Form of Authorization, Content of Application, Assessment of Fees, Coordination with FDEP, etc.) widening over Withlacoochee R needs title determination

•

Water Quantity Discussion: (Basin Description, Design Storm Event, Pre/Post Volume, Pre/Post Discharge, Local Requirements, Other) ADDITIONAL TRAFFIC LANES — OPEN & CLOSED BASIN, OPEN ATTENU & DRY RETENTION FOR MOST RECENT FLOOD STUDIES TO BE COORDINATED

•

Water Quality Discussion: (Type of Stormwater Treatment, Technical Characteristics, Non-presumptive Alternatives, Construction Phase Water Management and Erosion Control, Contaminated Sites, Ground Water Protection, etc.)

• NEED TO TREAT AS MUCH AS POSSIBLE OF WATER QUALITY OF EXISTING PAVEMENT

IN AREA OF CONSERVATION — NEED TO BE TREATED

Operation And Maintenance, Legal Information: (Ownership or Perpetual Control, Eminent Domain, Work on District Property, Inspections During Const., O&M Entity, System O&M Instructions, Homeowner Association Documents, Coastal Zone Requirements, Public Safety, etc.)

- FDOT

Application Type And Fee Required: (40D-4.041Permits Required, 40D-1.607 Fee Schedule, etc.)

- INDIVIDUAL - $2,000.00, WETLAND IMPACTS OVER 1 ACRE

Other: (Future Pre-Application Meetings, Fast Track, Submittal Date, Construction Start Date; Required District Permits - WUP, WOD, Well Construction, etc.)

-

Disclosure: The District ERP pre-application meeting process is a service made available to the public to assist interested parties in preparing for submittal of a complete permit application. Information shared at pre-application meetings is superseded by the actual permit application submittal. District permit decisions are based upon information submitted during the application process and Rules in effect at the time the application is complete.

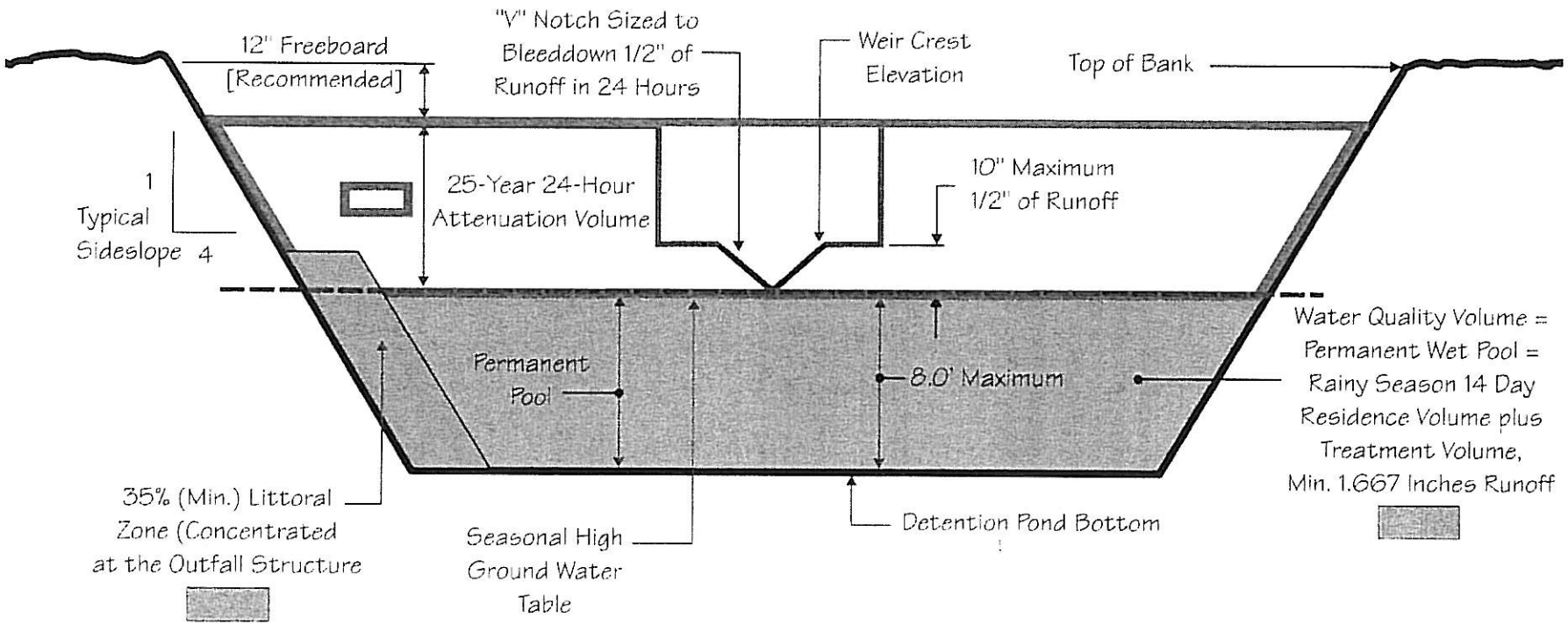
The following person was present and authored these ERP Pre-Application Meeting NOTES on behalf of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT:

WMM KMD

District Staff Representative | Name and Title

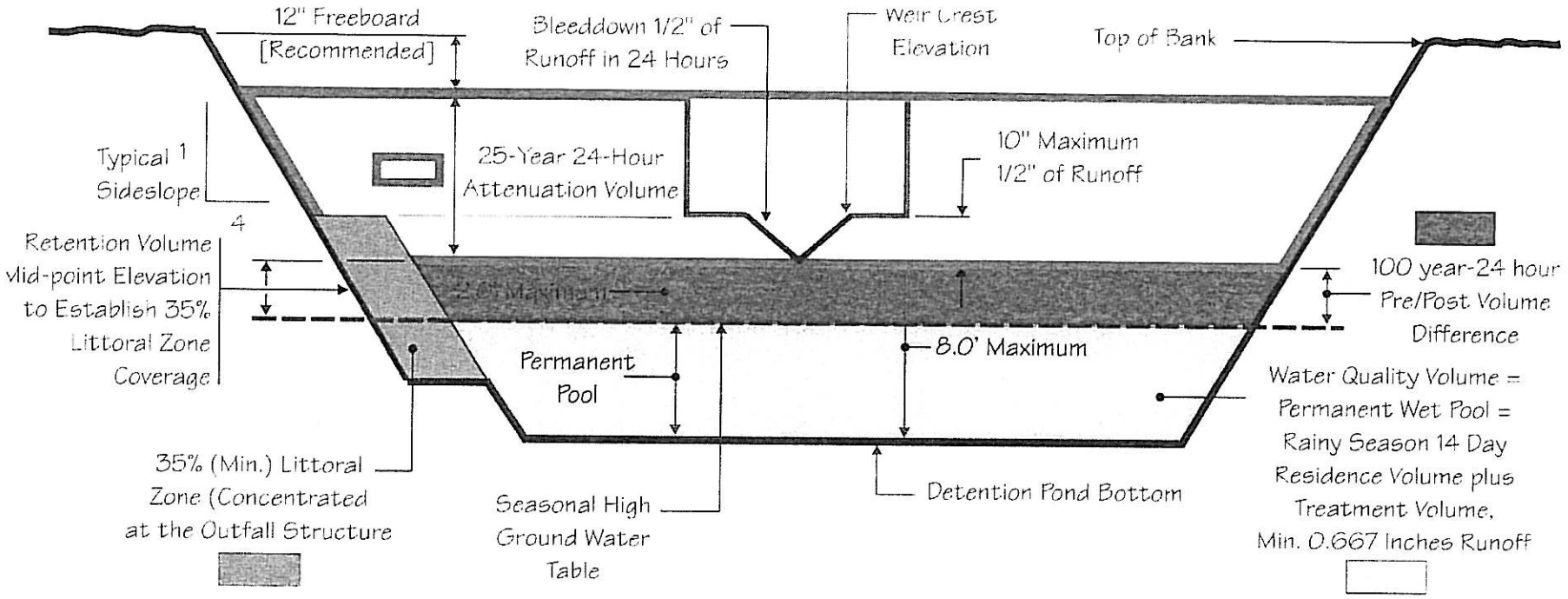
3/15/05

Signed | Date



MANMADE WET DETENTION IN AN OPEN BASIN

CONSERVATION DESIGN



MANMADE WET DETENTION IN A CLOSED BASIN

CONSERVATION DESIGN

Appendix C
SMF Sizing and Estimated 100-year Floodplain Impact Calculations

SMF Sizing Calculations

"CN" -- Pre-Development Conditions

	Basin	Length (ft)	Impervious Width (ft)	Drainage Area (ac)	Impervious Area (ac)	% Hydrologic Soil Group (HSG)				% Impervious	HSG - % Impervious				HSG - % Pervious				TR55 Results: Weighted CN
						A	B	C	D		A	B	C	D	A	B	C	D	
	2	3510	76	24.3	6.12	0%	35%	60%	5%	25%	0%	9%	15%	1%	0%	26%	45%	4%	81
	3	2690	76	18.6	4.69	0%	0%	80%	20%	25%	0%	0%	20%	5%	0%	0%	60%	15%	84
	4	3800	76	26.4	6.63	0%	15%	85%	0%	25%	0%	4%	21%	0%	0%	11%	64%	0%	83
	5	3250	76	22.3	5.67	0%	0%	100%	0%	25%	0%	0%	25%	0%	0%	0%	75%	0%	84
	6	3040	76	20.9	5.30	0%	0%	30%	70%	25%	0%	0%	8%	18%	0%	0%	22%	52%	87
	7	1220	76	8.4	2.13	0%	50%	0%	50%	25%	0%	13%	0%	13%	0%	37%	0%	37%	82
	8	1840	76	12.6	3.21	0%	100%	0%	0%	25%	0%	25%	0%	0%	0%	75%	0%	0%	76
	9	2040	76	14.1	3.56	0%	35%	65%	0%	25%	0%	9%	16%	0%	0%	26%	49%	0%	81
	10	3880	76	28.2	6.77	0%	55%	10%	35%	24%	0%	13%	2%	8%	0%	42%	8%	27%	81
	11	1320	76	10.9	2.30	0%	45%	55%	0%	21%	0%	9%	12%	0%	0%	36%	43%	0%	79
	12	1330	76	9.5	2.32	0%	65%	35%	0%	25%	0%	16%	9%	0%	0%	49%	26%	0%	79
	13	4250	76	32.6	7.42	0%	0%	90%	10%	23%	0%	0%	20%	2%	0%	0%	70%	8%	84
	14	1310	76	9.2	2.29	0%	0%	75%	25%	25%	0%	0%	19%	6%	0%	0%	56%	19%	85
	15	1900	76	29.0	5.90	50%	0%	50%	0%	20%	10%	0%	10%	0%	40%	0%	40%	0%	71
	16	3600	76	39.1	6.69	80%	0%	20%	0%	17%	14%	0%	3%	0%	66%	0%	17%	0%	62
	17	5060	76	39.2	8.83	20%	10%	20%	50%	23%	5%	2%	5%	11%	15%	8%	15%	39%	80
	18	4090	76	36.3	7.14	25%	0%	65%	10%	20%	5%	0%	13%	2%	20%	0%	52%	8%	77
4(f)-1	19	5050	76	47.5	8.81	47%	0%	53%	0%	19%	9%	0%	10%	0%	38%	0%	43%	0%	71
	20	2080	76	24.5	3.63	25%	0%	75%	0%	15%	4%	0%	11%	0%	21%	0%	64%	0%	76
	21	4360	76	34.2	7.61	45%	0%	55%	0%	22%	10%	0%	12%	0%	35%	0%	43%	0%	73
	22	4325	76	29.9	7.55	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
	23	3170	76	21.7	5.53	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
	24	4620	76	33.1	8.06	100%	0%	0%	0%	24%	24%	0%	0%	0%	76%	0%	0%	0%	61
	25	2640	76	18.2	4.61	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
	26	2712	76	59.4	4.73	100%	0%	0%	0%	8%	8%	0%	0%	0%	92%	0%	0%	0%	53
	27	2750	76	23.4	7.19	100%	0%	0%	0%	31%	31%	0%	0%	0%	69%	0%	0%	0%	64
4(f)-2a	29a	1410	76	13.2	2.46	100%	0%	0%	0%	19%	19%	0%	0%	0%	81%	0%	0%	0%	58
4(f)-2b	29b	1030	76	7.2	1.80	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-2c	29c	2010	76	14.1	3.51	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-3a	30a	1960	76	13.4	3.42	100%	0%	0%	0%	26%	26%	0%	0%	0%	74%	0%	0%	0%	62
4(f)-3b	30b	1400	76	9.1	2.44	100%	0%	0%	0%	27%	27%	0%	0%	0%	73%	0%	0%	0%	62
4(f)-3c	30c	2410	76	16.6	4.20	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-3d	30d	3720	76	28.3	6.49	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	60
4(f)-4a(w)	31a(w)	3500	76	21.3	6.11	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-4a(e)	31a(e)	3500	76	21.3	6.11	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-4b(w)	31b(w)	1700	76	13.1	2.97	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	61
4(f)-4b(e)	31b(e)	1700	76	13.1	2.97	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	61
4(f)-5a	32a	1210	76	8.2	2.11	100%	0%	0%	0%	26%	26%	0%	0%	0%	74%	0%	0%	0%	62
4(f)-5b	32b	2080	76	14.8	3.63	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-6a	33a	1760	76	10.4	3.07	0%	26%	20%	54%	29%	0%	8%	6%	16%	0%	18%	14%	38%	78
4(f)-6b	33b	3387	76	47.2	5.91	60%	0%	40%	0%	13%	8%	0%	5%	0%	52%	0%	35%	0%	66
4(f)-6c	33c	1280	76	7.7	2.23	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-7	34	2240	76	18.4	3.91	66%	0%	34%	0%	21%	14%	0%	7%	0%	52%	0%	27%	0%	67

"CN" -- Post-Development Conditions (8-lanes)

	Basin	Length (ft)	Impervious Width (ft)	Drainage Area (ac)	Impervious Area (ac)	% Hydrologic Soil Group (HSG)				% Impervious	HSG - % Impervious				HSG - % Pervious				TR55 Results: Weighted CN
						A	B	C	D		A	B	C	D	A	B	C	D	
	2	3510	216	24.3	17.40	0%	35%	60%	5%	72%	0%	25%	43%	4%	0%	10%	17%	1%	92
	3	2690	216	18.6	13.34	0%	0%	80%	20%	72%	0%	0%	57%	14%	0%	0%	23%	6%	93
	4	3800	216	26.4	18.84	0%	15%	85%	0%	71%	0%	11%	61%	0%	0%	4%	24%	0%	92
	5	3250	216	22.3	16.12	0%	0%	100%	0%	72%	0%	0%	72%	0%	0%	0%	28%	0%	93
	6	3040	216	20.9	15.07	0%	0%	30%	70%	72%	0%	0%	22%	50%	0%	0%	8%	20%	94
	7	1220	216	8.4	6.05	0%	50%	0%	50%	72%	0%	36%	0%	36%	0%	14%	0%	14%	92
	8	1840	216	12.6	9.12	0%	100%	0%	0%	72%	0%	72%	0%	0%	0%	28%	0%	0%	90
	9	2040	216	14.1	10.12	0%	35%	65%	0%	72%	0%	25%	47%	0%	0%	10%	18%	0%	92
	10	3880	216	28.2	19.24	0%	55%	10%	35%	68%	0%	37%	7%	24%	0%	18%	3%	11%	91
	11	1320	216	10.9	6.55	0%	45%	55%	0%	60%	0%	27%	33%	0%	0%	18%	22%	0%	89
	12	1330	216	9.5	6.60	0%	65%	35%	0%	70%	0%	45%	24%	0%	0%	20%	11%	0%	90
	13	4250	216	32.6	21.07	0%	0%	90%	10%	65%	0%	0%	58%	6%	0%	0%	32%	4%	91
	14	1310	216	9.2	6.50	0%	0%	75%	25%	71%	0%	0%	53%	18%	0%	0%	22%	7%	93
	15	1900	216	29.0	16.55	50%	0%	50%	0%	57%	29%	0%	29%	0%	22%	0%	22%	0%	84
	16	3600	216	39.1	25.05	80%	0%	20%	0%	64%	51%	0%	13%	0%	29%	0%	7%	0%	82
	17	5060	216	39.2	25.09	20%	10%	20%	50%	64%	13%	6%	13%	32%	7%	4%	7%	18%	90
	18	4090	216	36.3	20.28	25%	0%	65%	10%	56%	14%	0%	36%	6%	11%	0%	29%	4%	87
4(f)-1	19	5050	216	47.5	25.04	47%	0%	53%	0%	53%	25%	0%	28%	0%	22%	0%	25%	0%	82
	20	2080	216	24.5	10.31	25%	0%	75%	0%	42%	11%	0%	32%	0%	14%	0%	43%	0%	83
	21	4360	216	34.2	21.62	45%	0%	55%	0%	63%	28%	0%	35%	0%	17%	0%	20%	0%	86
	22	4325	216	29.9	21.45	100%	0%	0%	0%	72%	72%	0%	0%	0%	28%	0%	0%	0%	84
	23	3170	216	21.7	15.72	100%	0%	0%	0%	72%	72%	0%	0%	0%	28%	0%	0%	0%	84
	24	4620	216	33.1	22.91	100%	0%	0%	0%	69%	69%	0%	0%	0%	31%	0%	0%	0%	83
	25	2640	216	18.2	13.09	100%	0%	0%	0%	72%	72%	0%	0%	0%	28%	0%	0%	0%	84
	26	2712	216	59.4	13.45	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	60
	27	2750	216	23.4	13.64	100%	0%	0%	0%	58%	58%	0%	0%	0%	42%	0%	0%	0%	77
4(f)-2a	29a	1410	216	13.2	6.99	100%	0%	0%	0%	53%	53%	0%	0%	0%	47%	0%	0%	0%	48
4(f)-2b	29b	1030	216	7.2	5.11	100%	0%	0%	0%	71%	71%	0%	0%	0%	29%	0%	0%	0%	84
4(f)-2c	29c	2010	216	14.1	9.97	100%	0%	0%	0%	70%	70%	0%	0%	0%	30%	0%	0%	0%	83
4(f)-3a	30a	1960	216	13.4	9.72	100%	0%	0%	0%	73%	73%	0%	0%	0%	27%	0%	0%	0%	85
4(f)-3b	30b	1400	216	9.1	6.94	100%	0%	0%	0%	77%	77%	0%	0%	0%	23%	0%	0%	0%	87
4(f)-3c	30c	2410	216	16.6	11.95	100%	0%	0%	0%	72%	72%	0%	0%	0%	28%	0%	0%	0%	84
4(f)-3d	30d	3720	216	28.3	18.45	100%	0%	0%	0%	65%	65%	0%	0%	0%	35%	0%	0%	0%	81
4(f)-4a(w)	31a(w)	3500	216	21.3	17.36	100%	0%	0%	0%	81%	81%	0%	0%	0%	19%	0%	0%	0%	89
4(f)-4a(e)	31a(e)	3500	216	21.3	17.36	100%	0%	0%	0%	81%	81%	0%	0%	0%	19%	0%	0%	0%	89
4(f)-4b(w)	31b(w)	1700	216	13.1	8.43	100%	0%	0%	0%	64%	64%	0%	0%	0%	36%	0%	0%	0%	80
4(f)-4b(e)	31b(e)	1700	216	13.1	8.43	100%	0%	0%	0%	64%	64%	0%	0%	0%	36%	0%	0%	0%	80
4(f)-5a	32a	1210	216	8.2	6.00	100%	0%	0%	0%	74%	74%	0%	0%	0%	26%	0%	0%	0%	85
4(f)-5b	32b	2080	216	14.8	10.31	100%	0%	0%	0%	70%	70%	0%	0%	0%	30%	0%	0%	0%	83
4(f)-6a	33a	1760	216	10.4	8.73	0%	26%	20%	54%	84%	0%	22%	17%	45%	0%	4%	3%	9%	95
4(f)-6b	33b	3387	216	47.2	16.80	60%	0%	40%	0%	36%	21%	0%	14%	0%	39%	0%	26%	0%	74
4(f)-6c	33c	1280	216	7.7	6.35	100%	0%	0%	0%	83%	83%	0%	0%	0%	17%	0%	0%	0%	90
4(f)-7	34	2240	216	18.4	11.11	66%	0%	34%	0%	60%	40%	0%	21%	0%	26%	0%	13%	0%	83

* Assumption at Interchange: Impervious Area increases by 45% from PRE

"Q" -- Pre-Development Conditions

	Basin	Proposed Drainage Area (ac)	Total Length: Longest Path (ft)	Sheet Flow					Shallow Concentrated Flow				TR55 Results:				
				Surface Description	Length (ft)	2-yr, 24-hr Rainfall: Figure B-3 (in)	Difference in Elevation over length (ft)	Slope (ft/ft)	Surface Description	Flow Length (ft)	Difference in Elevation over length (ft)	Slope (ft/ft)	Tc (hrs)	25-Yr Peak Outflow (cfs)	100-Yr Peak Outflow (cfs)	25-Yr Runoff (in)	100-Yr Runoff (in)
	2	24.3	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	28	0.012	0.38	154	198	6.7	8.6
	3	18.6	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	4	0.002	0.93	77	98	7.1	9
	4	26.4	3534	Smooth Surface	34	5	0.69	0.020	Unpaved	3500	9	0.003	1.11	96	123	6.9	8.9
	5	22.3	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	22	0.011	0.34	157	200	7.1	9
	6	20.9	1534	Smooth Surface	34	5	0.69	0.020	Unpaved	1500	9	0.006	0.34	155	196	7.4	9.4
	7	8.4	834	Smooth Surface	34	5	0.69	0.020	Unpaved	800	11	0.014	0.12	86	110	6.8	8.7
	8	12.6	1434	Smooth Surface	34	5	0.69	0.020	Unpaved	1400	1.4	0.001	0.77	50	65	6.1	7.9
	9	14.1	1734	Smooth Surface	34	5	0.69	0.020	Unpaved	1700	2.1	0.001	0.93	55	71	6.7	8.6
	10	28.2	3534	Smooth Surface	34	5	0.69	0.020	Unpaved	3500	51	0.015	0.5	156	201	6.7	8.6
	11	10.9	1334	Smooth Surface	34	5	0.69	0.020	Unpaved	1300	20	0.015	0.19	90	116	6.4	8.3
	12	9.5	1334	Smooth Surface	34	5	0.69	0.020	Unpaved	1300	16.8	0.013	0.2	77	99	6.4	8.3
	13	32.6	3634	Smooth Surface	34	5	0.69	0.020	Unpaved	3600	71.8	0.020	0.45	201	256	7.1	9
	14	9.2	1134	Smooth Surface	34	5	0.69	0.020	Unpaved	1100	24	0.022	0.13	96	122	7.2	9.1
	15	29.0	1334	Smooth Surface	34	5	0.69	0.020	Unpaved	1300	26	0.020	0.17	210	280	5.5	7.3
	16	39.1	2634	Smooth Surface	34	5	0.69	0.020	Unpaved	2600	54	0.021	0.32	170	239	4.3	6.0
	17	39.2	4034	Smooth Surface	34	5	0.69	0.020	Unpaved	4000	88	0.022	0.47	220	284	6.6	8.5
	18	36.3	3234	Smooth Surface	34	5	0.69	0.020	Unpaved	3200	30	0.009	0.59	170	222	6.2	8.1
4(f)-1	19	47.5	2099	Smooth Surface	34	5	0.69	0.020	Unpaved	2065	42	0.020	0.26	291	388	5.5	7.3
	20	24.5	1534	Smooth Surface	34	5	0.69	0.020	Unpaved	1500	30	0.020	0.19	190	248	6.1	7.9
	21	34.2	2804	Smooth Surface	34	5	0.69	0.020	Unpaved	2770	67.1	0.024	0.31	203	269	5.7	7.5
	22	29.9	2414	Smooth Surface	34	5	0.69	0.020	Unpaved	2380	52.6	0.022	0.28	133	189	4.2	5.9
	23	21.7	1899	Smooth Surface	34	5	0.69	0.020	Unpaved	1865	23	0.012	0.30	145	205	4.2	5.9
	24	33.1	2429	Smooth Surface	34	5	0.69	0.020	Unpaved	2395	27	0.011	0.40	125	177	4.2	5.9
	25	18.2	2306	Smooth Surface	34	5	0.69	0.020	Unpaved	2272	14	0.006	0.47	63	90	4.2	5.9
	26	59.4	2077	Smooth Surface	34	5	0.69	0.020	Unpaved	2043	13	0.006	0.43	158	237	3.2	4.7
	27	23.4	1459	Smooth Surface	34	5	0.69	0.020	Unpaved	1425	13	0.009	0.25	121	168	4.6	6.3
4(f)-2a	29a	13.2	1334	Smooth Surface	34	5	0.69	0.020	Unpaved	1300	4	0.003	0.36	47	68	3.9	5.4
4(f)-2b	29b	7.23	1234	Smooth Surface	34	5	0.69	0.020	Unpaved	1200	12	0.010	0.21	36	51	4.2	5.9
4(f)-2c	29c	14.1	1534	Smooth Surface	34	5	0.69	0.020	Unpaved	1500	32	0.021	0.19	74	104	4.2	5.9
4(f)-3a	30a	13.4	1634	Smooth Surface	34	5	0.69	0.020	Unpaved	1600	7	0.004	0.44	50	70	4.3	6.0
4(f)-3b	30b	9.1	1134	Smooth Surface	34	5	0.69	0.020	Unpaved	1100	7	0.006	0.25	44	62	4.3	6.0
4(f)-3c	30c	16.6	2134	Smooth Surface	34	5	0.69	0.020	Unpaved	2100	18	0.009	0.39	63	90	4.2	5.9
4(f)-3d	30d	28.3	1634	Smooth Surface	34	5	0.69	0.020	Unpaved	1200	7	0.006	0.34	111	159	4.1	5.7
4(f)-4a(w)	31a(w)	21.3	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	11	0.006	0.45	81	114	4.5	6.1
4(f)-4a(e)	31a(e)	21.3	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	11	0.006	0.45	81	114	4.5	6.1
4(f)-4b(w)	31b(w)	13.1	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	26	0.011	0.40	49	70	4.2	5.9
4(f)-4b(e)	31b(e)	13.1	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	26	0.011	0.40	49	70	4.2	5.9
4(f)-5a	32a	8.2	834	Smooth Surface	34	5	0.69	0.020	Unpaved	800	18	0.023	0.10	56	77	4.3	6.0
4(f)-5b	32b	14.8	1134	Smooth Surface	34	5	0.69	0.020	Unpaved	1100	18	0.016	0.45	53	75	4.2	5.9
4(f)-6a	33a	10.4	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	7	0.004	0.55	52	67	6.3	8.2
4(f)-6b	33b	47.2	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	18	0.008	0.47	193	265	4.8	6.6
4(f)-6c	33c	7.7	834	Smooth Surface	34	5	0.69	0.020	Unpaved	800	14	0.018	0.11	52	72	4.5	6.1
4(f)-7	34	18.4	1734	Smooth Surface	34	5	0.69	0.020	Unpaved	1700	31	0.018	0.22	109	149	5.0	6.7

"Q" -- Post-Development Conditions (8-lanes)

	Basin	Proposed Drainage Area (ac)	Total Length: Longest Path (ft)	Sheet Flow					Shallow Concentrated Flow					TR55 Results:				
				Surface Description	Length (ft)	2-yr, 24-hr Rainfall: Figure B-3 (in)	Difference in Elevation over length (ft)	Slope (ft/ft)	Surface Description	Flow Length (ft)	Difference in Elevation over length (ft)	Slope (ft/ft)	AVG. VELOCITY (FIG 3-1)	Tc (hrs)	25-Yr Peak Outflow (cfs)	100-Yr Peak Outflow (cfs)	25-Yr Runoff (in)	100-Yr Runoff (in)
	2	24.3	2448	Smooth Surface	48	5	0.96	0.020	Paved	2400	28	0.012		0.31	203	254	8	10
	3	18.6	2448	Smooth Surface	48	5	0.96	0.020	Paved	2400	4	0.002		0.74	101	126	8.2	10.1
	4	26.4	3548	Smooth Surface	48	5	0.96	0.020	Paved	3500	9	0.003		0.88	128	160	8	10
	5	22.3	2048	Smooth Surface	48	5	0.96	0.020	Paved	2000	22	0.011		0.27	201	250	8.2	10.1
	6	20.9	1548	Smooth Surface	48	5	0.96	0.020	Paved	1500	9	0.006		0.27	191	237	8.3	10.3
	7	8.4	848	Smooth Surface	48	5	0.96	0.020	Paved	800	11	0.014		0.1	107	133	8	10
	8	12.6	1448	Smooth Surface	48	5	0.96	0.020	Paved	1400	1.4	0.001		0.61	73	92	7.8	9.8
	9	14.1	1748	Smooth Surface	48	5	0.96	0.020	Paved	1700	2.1	0.001		0.74	76	94	8	10
	10	28.2	3548	Smooth Surface	48	5	0.96	0.020	Paved	3500	51	0.015		0.4	206	258	7.9	9.9
	11	10.9	1348	Smooth Surface	48	5	0.96	0.020	Paved	1300	20	0.015		0.15	116	146	7.7	9.6
	12	9.5	1348	Smooth Surface	48	5	0.96	0.020	Paved	1300	16.8	0.013		0.16	100	126	7.8	9.8
	13	32.6	3648	Smooth Surface	48	5	0.96	0.020	Paved	3600	71.8	0.020		0.36	251	314	7.9	9.9
	14	9.2	1148	Smooth Surface	48	5	0.96	0.020	Paved	1100	24	0.022		0.11	115	143	8.2	10.1
	15	29.0	1348	Smooth Surface	48	5	0.96	0.020	Paved	1300	26	0.020		0.13	298	380	7.1	9.0
	16	39.1	2648	Smooth Surface	48	5	0.96	0.020	Paved	2600	54	0.021		0.25	304	391	6.8	8.7
	17	39.2	4048	Smooth Surface	48	5	0.96	0.020	Paved	4000	88	0.022		0.38	289	363	7.8	9.8
	18	36.3	3248	Smooth Surface	48	5	0.96	0.020	Paved	3200	30	0.009		0.47	230	291	7.4	9.4
4(f)-1	19	47.5	2113	Smooth Surface	48	5	0.96	0.020	Paved	2065	42	0.020		0.21	397	509	6.8	8.7
	20	24.5	1548	Smooth Surface	48	5	0.96	0.020	Paved	1500	30	0.020		0.15	236	302	6.9	8.9
	21	34.2	2818	Smooth Surface	48	5	0.96	0.020	Paved	2770	67.1	0.024		0.25	285	362	7.3	9.3
	22	29.9	2428	Smooth Surface	48	5	0.96	0.020	Paved	2380	52.6	0.022		0.23	250	318	7.1	9.0
	23	21.7	1913	Smooth Surface	48	5	0.96	0.020	Paved	1865	23	0.012		0.24	178	227	7.1	9.0
	24	33.1	2443	Smooth Surface	48	5	0.96	0.020	Paved	2395	27	0.011		0.32	236	301	6.9	8.9
	25	18.2	2320	Smooth Surface	48	5	0.96	0.020	Paved	2272	14	0.006		0.38	122	155	7.1	9.0
	26	59.4	2091	Smooth Surface	48	5	0.96	0.020	Paved	2043	13	0.006		0.34	234	334	4.1	5.7
	27	23.4	1473	Smooth Surface	48	5	0.96	0.020	Paved	1425	13	0.009		0.20	181	236	6.2	8.1
4(f)-2a	29a	13.2	1348	Smooth Surface	48	5	0.96	0.020	Paved	1300	4	0.003		0.29	84	111	6.0	7.8
4(f)-2b	29b	7.23	1248	Smooth Surface	48	5	0.96	0.020	Paved	1200	12	0.010		0.17	68	86	7.1	9.0
4(f)-2c	29c	14.1	1548	Smooth Surface	48	5	0.96	0.020	Paved	1500	32	0.021		0.15	136	174	6.9	8.9
4(f)-3a	30a	13.4	1648	Smooth Surface	48	5	0.96	0.020	Paved	1600	7	0.004		0.23	114	145	7.2	9.1
4(f)-3b	30b	9.1	1148	Smooth Surface	48	5	0.96	0.020	Paved	1100	7	0.006		0.16	92	116	7.4	9.4
4(f)-3c	30c	16.6	2148	Smooth Surface	48	5	0.96	0.020	Paved	2100	18	0.009		0.30	124	158	7.1	9.0
4(f)-3d	30d	28.3	1248	Smooth Surface	48	5	0.96	0.020	Paved	1200	7	0.006		0.23	224	288	6.7	8.6
4(f)-4a(w)	31a(w)	21.3	2048	Smooth Surface	48	5	0.96	0.020	Paved	2000	11	0.006		0.29	175	220	7.7	9.6
4(f)-4a(e)	31a(e)	21.3	2048	Smooth Surface	48	5	0.96	0.020	Paved	2000	11	0.006		0.29	175	220	7.7	9.6
4(f)-4b(w)	31b(w)	13.1	2448	Smooth Surface	48	5	0.96	0.020	Paved	2400	26	0.011		0.34	86	111	6.6	8.5
4(f)-4b(e)	31b(e)	13.1	2448	Smooth Surface	48	5	0.96	0.020	Paved	2400	26	0.011		0.34	86	111	6.6	8.5
4(f)-5a	32a	8.2	848	Smooth Surface	48	5	0.96	0.020	Paved	800	18	0.023		0.10	93	118	7.2	9.1
4(f)-5b	32b	14.8	1148	Smooth Surface	48	5	0.96	0.020	Paved	1100	18	0.016		0.38	97	124	6.9	8.9
4(f)-6a	33a	10.4	2048	Smooth Surface	48	5	0.96	0.020	Paved	2000	7	0.004		0.29	94	116	8.4	10.4
4(f)-6b	33b	47.2	2448	Smooth Surface	48	5	0.96	0.020	Paved	2400	18	0.008		0.34	275	362	5.8	7.7
4(f)-6c	33c	7.7	848	Smooth Surface	48	5	0.96	0.020	Paved	800	14	0.018		0.10	95	119	7.8	9.8
4(f)-7	34	18.4	1748	Smooth Surface	48	5	0.96	0.020	Paved	1700	31	0.018		0.20	160	204	6.9	8.9

Estimated Stormwater Management Facility (SMF) Volume Requirements (8-lanes)

	Basin	Attenuation Volume						Treatment Volume						25-Year Attenuation Volume						Total Required SMF Volume (ac-ft)
		Pre 100-Yr Runoff (ft)	Post 100-Yr Runoff (ft)	Proposed Drainage Area (ac)	Pre 100-Yr Runoff Volume (ac-ft)	Post 100-Yr Runoff Volume (ac-ft)	100-Yr Post Pre Attenuation Volume (ac ft)	Basin Type	SMF Type (wet/dry)	Required Runoff for Treatment (in)	% Impervious Drainage Area	Impervious Drainage Area (ac)	Required Treatment Volume (ac-ft)	Pre 25-Year Peak Outflow, Q_o (CFS)	Post 25-Year Peak Inflow, Q_i (CFS)	Actual Q_o/Q_i Ratio	Adjusted Q_o/Q_i Ratio	Adjusted Q_i (CFS)	25-Year Volume (ac-ft)	
	1	0.68	0.76	3.9	2.6	2.9	0.3	Open	Wet	1	0.56	2.2	0.2	49	56	0.88	0.8	61.25	0.40	0.6
	2	0.72	0.83	24.3	17.4	20.3	2.8	Open	Wet	1	0.72	17.4	1.5	154	203	0.76	N/A	N/A	3.10	4.6
	3	0.75	0.84	18.6	13.9	15.6	1.7	Open	Wet	1	0.72	13.3	1.1	77	101	0.76	N/A	N/A	2.40	3.5
	4	0.74	0.83	26.4	19.6	22.0	2.4	Open	Wet	1	0.71	18.8	1.6	96	128	0.75	N/A	N/A	3.40	5.0
	5	0.75	0.84	22.3	16.7	18.8	2.0	Open	Wet	1	0.72	16.1	1.3	157	201	0.78	N/A	N/A	2.80	4.1
	6	0.78	0.86	20.9	16.4	18.0	1.6	Open	Wet	1	0.72	15.1	1.3	155	191	0.81	0.8	193.75	2.50	3.8
	7	0.73	0.83	8.4	6.1	7.0	0.9	Open	Wet	1	0.72	6.0	0.5	86	107	0.80	0.8	107.5	1.00	1.5
	8	0.66	0.82	12.6	8.3	10.3	2.0	Open	Wet	1	0.72	9.1	0.8	50	73	0.68	N/A	N/A	1.70	2.5
	9	0.72	0.83	14.1	10.1	11.7	1.6	Open	Wet	1	0.72	10.1	0.8	55	76	0.72	N/A	N/A	1.90	2.7
	10	0.72	0.83	28.2	20.2	23.3	3.1	Open	Wet	1	0.68	19.2	1.6	156	206	0.76	N/A	N/A	3.50	5.1
	11	0.69	0.80	10.9	7.6	8.7	1.2	Open	Wet	1	0.60	6.5	0.5	90	116	0.78	N/A	N/A	1.30	1.8
	12	0.69	0.82	9.5	6.5	7.7	1.2	Open	Wet	1	0.70	6.6	0.5	77	100	0.77	N/A	N/A	1.20	1.7
	13	0.75	0.83	32.6	24.4	26.9	2.4	Closed	Wet	1	0.65	21.1	1.8	201	251	0.80	0.8	251.25	3.80	8.0
	14	0.76	0.84	9.2	6.9	7.7	0.8	Closed	Wet	1	0.71	6.5	0.5	96	115	0.83	0.8	120.00	1.10	2.4
	15	0.61	0.75	29.0	17.7	21.8	4.1	Closed	Wet	1	0.57	16.5	1.4	210	298	0.70	N/A	N/A	3.50	9.0
	15mod	0.59	0.76	54.0	32.0	41.0	9.0	Closed	Wet	1	0.62	33.5	2.8	230	340	0.68	N/A	N/A	4.20	16.0
	16	0.50	0.73	39.1	19.6	28.4	8.8	Closed	Dry	0.5	0.64	25.0	1.0	170	304	0.56	N/A	N/A	5.70	15.5
	17	0.71	0.82	39.2	27.8	32.0	4.2	Closed	Wet	1	0.64	25.1	2.1	220	289	0.76	N/A	N/A	4.80	11.1
	18	0.68	0.78	36.3	24.5	28.4	3.9	Closed	Wet	1	0.56	20.3	1.7	170	230	0.74	N/A	N/A	4.40	10.0
4(f)-1	19	0.61	0.73	47.5	28.9	34.4	5.5	Closed	Wet	1	0.53	25.0	2.1	291	397	0.73	N/A	N/A	5.30	12.9
	20	0.66	0.74	24.5	16.1	18.2	2.0	Closed	Wet	1	0.42	10.3	0.9	190	236	0.81	0.80	237.50	2.50	5.4
	21	0.63	0.78	34.2	21.4	26.5	5.1	Closed	Wet	1	0.63	21.6	1.8	203	285	0.71	N/A	N/A	4.30	11.2
	22	0.49	0.75	29.9	14.7	22.4	7.7	Closed	Dry	0.5	0.72	21.4	0.9	133	250	0.53	N/A	N/A	4.70	13.3
	23	0.49	0.75	21.7	10.7	16.3	5.6	Closed	Dry	0.5	0.72	15.7	0.7	145	178	0.81	0.80	181.25	2.20	8.5
	24	0.49	0.74	33.1	16.3	24.6	8.3	Closed	Dry	0.5	0.69	22.9	1.0	125	236	0.53	N/A	N/A	5.10	14.3
	25	0.49	0.75	18.2	8.9	13.6	4.7	Closed	Dry	0.5	0.72	13.1	0.5	63	122	0.52	N/A	N/A	2.90	8.1
	26	0.39	0.48	59.4	23.3	28.2	4.9	Closed	Dry	0.5	0.23	13.4	0.6	158	234	0.68	N/A	N/A	4.40	9.9
	27	0.53	0.68	23.4	12.3	15.8	3.5	Closed	Dry	0.5	0.58	13.6	0.6	121	181	0.67	N/A	N/A	2.60	6.7
4(f)-2a	29a	0.45	0.65	13.2	5.9	8.6	2.6	Closed	Dry	0.5	0.53	7.0	0.3	47	84	0.56	N/A	N/A	1.70	4.6
4(f)-2b	29b	0.49	0.75	7.2	3.6	5.4	1.9	Closed	Dry	0.5	0.71	5.1	0.2	36	68	0.53	N/A	N/A	1.10	3.2
4(f)-2c	29c	0.49	0.74	14.1	7.0	10.5	3.5	Closed	Dry	0.5	0.70	10.0	0.4	74	136	0.54	N/A	N/A	2.10	6.1
4(f)-3a	30a	0.50	0.76	13.4	6.7	10.2	3.5	Closed	Dry	0.5	0.73	9.7	0.4	50	114	0.44	N/A	N/A	2.40	6.3
4(f)-3b	30b	0.50	0.78	9.1	4.5	7.1	2.6	Closed	Dry	0.5	0.77	6.9	0.3	44	92	0.48	N/A	N/A	1.60	4.5
4(f)-3c	30c	0.49	0.75	16.6	8.1	12.4	4.3	Closed	Dry	0.5	0.72	12.0	0.5	63	124	0.51	N/A	N/A	2.70	7.5
4(f)-3d	30d	0.48	0.72	28.3	13.4	20.3	6.8	Closed	Dry	0.5	0.65	18.4	0.8	111	224	0.50	N/A	N/A	4.40	12.0
4(f)-4a(w)	31a(w)	0.51	0.80	21.3	10.9	17.1	6.2	Closed	Dry	0.5	0.81	17.4	0.7	81	175	0.46	N/A	N/A	4.00	10.9
4(f)-4a(e)	31a(e)	0.51	0.80	21.3	10.9	17.1	6.2	Closed	Dry	0.5	0.81	17.4	0.7	81	175	0.46	N/A	N/A		
4(f)-4b(w)	31b(w)	0.49	0.71	13.1	6.4	9.3	2.8	Closed	Dry	0.5	0.64	8.4	0.4	49	86	0.57	N/A	N/A	1.80	5.0
4(f)-4b(e)	31b(e)	0.49	0.71	13.1	6.4	9.3	2.8	Closed	Dry	0.5	0.64	8.4	0.4	49	86	0.57	N/A	N/A		
4(f)-5a	32a	0.50	0.76	8.2	4.1	6.2	2.1	Closed	Wet	1	0.74	6.0	0.5	56	93	0.60	N/A	N/A	1.20	3.8
4(f)-5b	32b	0.49	0.74	14.8	7.3	11.0	3.7	Closed	Wet	1	0.70	10.3	0.9	53	97	0.55	N/A	N/A	2.20	6.8
4(f)-6a	33a	0.68	0.87	10.4	7.1	9.0	1.9	Closed	Wet	1	0.84	8.7	0.7	52	94	0.55	N/A	N/A	1.90	4.5
4(f)-6b	33b	0.55	0.64	47.2	26.0	30.3	4.3	Closed	Wet	1	0.36	16.8	1.4	193	275	0.70	N/A	N/A	4.80	10.5
4(f)-6c	33c	0.51	0.82	7.7	3.9	6.3	2.4	Closed	Wet	1	0.83	6.3	0.5	52	95	0.55	N/A	N/A	1.30	4.2
4(f)-7	34	0.56	0.74	46.0	25.7	34.1	8.4	Closed	Wet	1	0.60	27.8	2.3	109	160	0.68	N/A	N/A	2.30	13.0

Estimated Stormwater Management Facility (SMF) Area Requirements (8-lanes)

SMF Alt.	Est. Existing Ground Elevation of SMF Site (ft, NGVD)	SCS Depth to SHWT (ft)	Approximate Roadway Elevation (ft, NGVD)	Chosen SMF Depth (ft)	Required SMF Volume (ac-ft)	Initial Required SMF Area (ac)	Initial Required SMF Area (sq ft)	SMF Width (ft)	SMF Length (ft)	Assumed Side Slope	SMF Width w/ Side Slopes (ft)	SMF Length w/ Side Slopes (ft)	Water Surface Area @ Peak Design Stage (sq ft)	Berm Width (ft)	SMF Width (w/ Side Slopes & Berms) (ft)	SMF Length (w/ Side Slopes & Berms) (ft)	Total Req'd SMF Area (ac)	SMF Width (w/ Side Slopes & Berms + 10%) (ft)	SMF Length (w/ Side Slopes & Berms + 10%) (ft)	Total Req'd SMF Area (+10%) (ac)	Total SMF Area Proposed (ac)
2A	96	2.5-5	98.8	3	4.6	1.52	66072	182	364	4.00	194	376	72759	20.00	234	416	2.23	257	457	2.70	2.7
2B	94	2.5-5	98.8	3	4.6	1.52	66072	182	364	4.00	194	376	72759	20.00	234	416	2.23	257	457	2.70	2.7
2C	96.5	2.5-5	98.8	3	4.6	1.52	66072	182	364	4.00	194	376	72759	20.00	234	416	2.23	257	457	2.70	2.8
3A	87	2.5-5	94	3	3.5	1.17	50988	160	319	4.00	172	331	56880	20.00	212	371	1.80	233	408	2.18	2.2
3B	87	2.5-5	94	3	3.5	1.17	50988	160	319	4.00	172	331	56880	20.00	212	371	1.80	233	408	2.18	2.2
3C	87	2.5-5	94	3	3.5	1.17	50988	160	319	4.00	172	331	56880	20.00	212	371	1.80	233	408	2.18	2.2
4A	86.5	1.5-2.5	91.4	2	5.0	2.49	108252	233	465	4.00	241	473	113900	20.00	281	513	3.31	309	565	4.00	4.0
4B	83.5	1.5-2.5	91.4	2	5.0	2.49	108252	233	465	4.00	241	473	113900	20.00	281	513	3.31	309	565	4.00	4.1
4C	84	1.5-2.5	91.4	2	5.0	2.49	108252	233	465	4.00	241	473	113900	20.00	281	513	3.31	309	565	4.00	4.0
5A	105	1.5-2.5	105	2	4.1	2.07	90234	212	425	4.00	220	433	95396	20.00	260	473	2.83	286	520	3.42	5.0
5B	100	1.5-2.5	105	2	4.1	2.07	90234	212	425	4.00	220	433	95396	20.00	260	473	2.83	286	520	3.42	4.6
5C	102	1.5-2.5	105	2	4.1	2.07	90234	212	425	4.00	220	433	95396	20.00	260	473	2.83	286	520	3.42	4.3
6A	105	0-1	118	2	3.8	1.88	81810	202	404	4.00	210	412	86728	20.00	250	452	2.60	275	498	3.15	3.1
6B	108	0-1	118	2	3.8	1.88	81810	202	404	4.00	210	412	86728	20.00	250	452	2.60	275	498	3.15	3.1
6C	106	0-1	118	2	3.8	1.88	81810	202	404	4.00	210	412	86728	20.00	250	452	2.60	275	498	3.15	3.1
7A	108	0-1	115	2	1.5	0.75	32760	128	256	4.00	136	264	35896	20.00	176	304	1.23	194	334	1.49	1.5
7B	105	0-1	115	2	1.5	0.75	32760	128	256	4.00	136	264	35896	20.00	176	304	1.23	194	334	1.49	1.7
7C	103	0-1	115	2	1.5	0.75	32760	128	256	4.00	136	264	35896	20.00	176	304	1.23	194	334	1.49	1.5
8A	105	0-1	111.1	2	2.5	1.23	53586	164	327	4.00	172	335	57578	20.00	212	375	1.82	233	413	2.21	2.2
8B	107	0-1	111.1	2	2.5	1.23	53586	164	327	4.00	172	335	57578	20.00	212	375	1.82	233	413	2.21	2.2
8C	105	0-1	111.1	2	2.5	1.23	53586	164	327	4.00	172	335	57578	20.00	212	375	1.82	233	413	2.21	2.2
9A	105	2.5-5	111.1	3	2.7	0.91	39828	141	282	4.00	153	294	45052	20.00	193	334	1.48	212	368	1.79	2.2
9B	103	0-1	111.1	2	2.7	1.37	59742	173	346	4.00	181	354	63954	20.00	221	394	2.00	243	433	2.41	2.5
9C	110	2.5-5	111.1	3	2.7	0.91	39828	141	282	4.00	153	294	45052	20.00	193	334	1.48	212	368	1.79	2.4
10A	109	0-1	114	2	5.1	2.55	111150	236	471	4.00	244	479	116872	20.00	284	519	3.38	312	571	4.09	4.1
10B	110	0-1	114	2	5.1	2.55	111150	236	471	4.00	244	479	116872	20.00	284	519	3.38	312	571	4.09	4.1
10C	108	0-1	114	2	5.1	2.55	111150	236	471	4.00	244	479	116872	20.00	284	519	3.38	312	571	4.09	4.1

Estimated Stormwater Management Facility (SMF) Area Requirements (8-lanes)

	SMF Alt.	Est. Existing Ground Elevation of SMF Site (ft, NGVD)	SCS Depth to SHWT (ft)	Approximate Roadway Elevation (ft, NGVD)	Chosen SMF Depth (ft)	Required SMF Volume (ac-ft)	Initial Required SMF Area (ac)	Initial Required SMF Area (sq ft)	SMF Width (ft)	SMF Length (ft)	Assumed Side Slope	SMF Width w/ Side Slopes (ft)	SMF Length w/ Side Slopes (ft)	Water Surface Area @ Peak Design Stage (sq ft)	Berm Width (ft)	SMF Width (w/ Side Slopes & Berms) (ft)	SMF Length (w/ Side Slopes & Berms) (ft)	Total Req'd SMF Area (ac)	SMF Width (w/ Side Slopes & Berms + 10%) (ft)	SMF Length (w/ Side Slopes & Berms + 10%) (ft)	Total Req'd SMF Area (+10%) (ac)	Total SMF Area Proposed (ac)
	11A	150	0-1	170	2	1.8	0.92	40194	142	284	4.00	150	292	43660	20.00	190	332	1.44	209	365	1.75	1.8
	11B	165	1.5-3.5	170	2.5	1.8	0.74	32155	127	254	4.00	137	264	36059	20.00	177	304	1.23	194	334	1.49	1.7
	12A	183	0-1	193	2	1.7	0.87	38106	138	276	4.00	146	284	41483	20.00	186	324	1.38	205	356	1.67	1.7
	12B	191	0-1	193	2	1.7	0.87	38106	138	276	4.00	146	284	41483	20.00	186	324	1.38	205	356	1.67	1.7
	13A	135	1.5-3.5	135	2.5	8.0	3.20	139358	264	528	4.00	274	538	147377	20.00	314	578	4.17	345	636	5.04	5.1
	13B	152	1.5-3.5	152	2.5	8.0	3.20	139358	264	528	4.00	274	538	147377	20.00	314	578	4.17	345	636	5.04	5.1
	13C	135	1.5-3.5	135	2.5	8.0	3.20	139358	264	528	4.00	274	538	147377	20.00	314	578	4.17	345	636	5.04	5.1
	14A	113	0-1	135	2	2.4	1.20	52368	162	324	4.00	170	332	56316	20.00	210	372	1.79	231	409	2.17	2.2
	14B	113	0-1	135	2	2.4	1.20	52368	162	324	4.00	170	332	56316	20.00	210	372	1.79	231	409	2.17	2.6
	14C	145	1.5-3.5	145	2.5	2.4	0.96	41895	145	289	4.00	155	299	46337	20.00	195	339	1.52	214	373	1.84	2.1
	15A	130	0-1	132.3	2	9.0	4.50	195832	313	626	4.00	321	634	203406	20.00	361	674	5.58	397	741	6.76	7.8
	15B	127	0-1	132.3	2	9.0	4.50	195832	313	626	4.00	321	634	203406	20.00	361	674	5.58	397	741	6.76	8.8
	15C	110	0-1	132.3	2	9.0	4.50	195832	313	626	4.00	321	634	203406	20.00	361	674	5.58	397	741	6.76	6.8
	16A	140	>6	145	3	15.5	5.18	225783	336	672	4.00	348	684	238023	20.00	388	724	6.45	427	796	7.80	7.9
	16C	140	>6	145	3	15.5	5.18	225783	336	672	4.00	348	684	238023	20.00	388	724	6.45	427	796	7.80	7.7
	17A	103	0-1	115.5	2	11.1	5.57	242622	348	697	4.00	356	705	251045	20.00	396	745	6.77	436	819	8.20	8.5
	17B	115	0-2.5	115.5	2	11.1	5.57	242622	348	697	4.00	356	705	251045	20.00	396	745	6.77	436	819	8.20	8.7
	18A	110	+2-1	135.2	2	10.0	5.01	218326	330	661	4.00	338	669	226320	20.00	378	709	6.16	416	780	7.45	7.6
	18B	105	+2-1	135.2	2	10.0	5.01	218326	330	661	4.00	338	669	226320	20.00	378	709	6.16	416	780	7.45	7.6
4(f)-1	19A	90	1.5-3.5	117	2.5	12.9	5.17	225213	336	671	4.00	346	681	235380	20.00	386	721	6.38	424	793	7.72	8.1
	19B	107	1.5-3.5	117	2.5	12.9	5.17	225213	336	671	4.00	346	681	235380	20.00	386	721	6.38	424	793	7.72	7.8
	19C	Natural																				
	20A	83	0-1	102.1	2	5.4	2.70	117606	242	485	4.00	250	493	123489	20.00	290	533	3.55	320	586	4.30	4.2
	20B	81.5	0-1	102.1	2	5.4	2.70	117606	242	485	4.00	250	493	123489	20.00	290	533	3.55	320	586	4.30	4.7
	20C	90	0-1	102.1	2	5.4	2.70	117606	242	485	4.00	250	493	123489	20.00	290	533	3.55	320	586	4.30	5.2
	21A	77	1.5-3.5	84.3	2.5	11.2	4.49	195630	313	626	4.00	323	636	205113	20.00	363	676	5.63	399	743	6.81	6.8
	21B	80	1.5-3.5	84.3	2.5	11.2	4.49	195630	313	626	4.00	323	636	205113	20.00	363	676	5.63	399	743	6.81	6.7
	21C	77	1.5-3.5	84.3	2.5	11.2	4.49	195630	313	626	4.00	323	636	205113	20.00	363	676	5.63	399	743	6.81	6.8
	22A	87	>6.0	93.8	3	13.3	4.44	193272	311	622	4.00	323	634	204607	20.00	363	674	5.61	399	741	6.79	7.1
	22B	90	>6.0	93.8	3	13.3	4.44	193272	311	622	4.00	323	634	204607	20.00	363	674	5.61	399	741	6.79	7.2

Estimated Stormwater Management Facility (SMF) Area Requirements (8-lanes)

	SMF Alt.	Est. Existing Ground Elevation of SMF Site (ft, NGVD)	SCS Depth to SHWT (ft)	Approximate Roadway Elevation (ft, NGVD)	Chosen SMF Depth (ft)	Required SMF Volume (ac-ft)	Initial Required SMF Area (ac)	Initial Required SMF Area (sq ft)	SMF Width (ft)	SMF Length (ft)	Assumed Side Slope	SMF Width w/ Side Slopes (ft)	SMF Length w/ Side Slopes (ft)	Water Surface Area @ Peak Design Stage (sq ft)	Berm Width (ft)	SMF Width (w/ Side Slopes & Berms) (ft)	SMF Length (w/ Side Slopes & Berms) (ft)	Total Req'd SMF Area (ac)	SMF Width (w/ Side Slopes & Berms + 10%) (ft)	SMF Length (w/ Side Slopes & Berms + 10%) (ft)	Total Req'd SMF Area (+10%) (ac)	Total SMF Area Proposed (ac)
	22C	85	>6.0	93.8	3	13.3	4.44	193272	311	622	4.00	323	634	204607	20.00	363	674	5.61	399	741	6.79	7.3
	23A	85	>6.0	87	3	8.5	2.82	123000	248	496	4.00	260	508	132071	20.00	300	548	3.77	330	603	4.57	4.8
	23B	80	>6.0	87	3	8.5	2.82	123000	248	496	4.00	260	508	132071	20.00	300	548	3.77	330	603	4.57	5.1
	23C	85	>6.0	87	3	8.5	2.82	123000	248	496	4.00	260	508	132071	20.00	300	548	3.77	330	603	4.57	4.9
	24A	75	>6.0	83	3	14.3	4.78	208198	323	645	4.00	335	657	219957	20.00	375	697	6.00	412	767	7.26	7.4
	24B	70	>6.0	83	3	14.3	4.78	208198	323	645	4.00	335	657	219957	20.00	375	697	6.00	412	767	7.26	7.1
	24C	82	>6.0	83	3	14.3	4.78	208198	323	645	4.00	335	657	219957	20.00	375	697	6.00	412	767	7.26	7.3
	25A	95	>6.0	96	3	8.1	2.71	118199	243	486	4.00	255	498	127095	20.00	295	538	3.65	325	592	4.41	5.0
	25B	95	>6.0	96	3	8.1	2.71	118199	243	486	4.00	255	498	127095	20.00	295	538	3.65	325	592	4.41	4.5
	25C	95	>6.0	96	3	8.1	2.71	118199	243	486	4.00	255	498	127095	20.00	295	538	3.65	325	592	4.41	5.1
	26A	81	>6.0	86	3	9.9	3.30	143855	268	536	4.00	280	548	153654	20.00	320	588	4.32	352	647	5.23	6.0
	26B	82	>6.0	86	3	9.9	3.30	143855	268	536	4.00	280	548	153654	20.00	320	588	4.32	352	647	5.23	6.0
	26C	85	>6.0	86	3	9.9	3.30	143855	268	536	4.00	280	548	153654	20.00	320	588	4.32	352	647	5.23	5.2
	27A	65	>6.0	74	3	6.7	2.23	96947	220	440	4.00	232	452	105017	20.00	272	492	3.08	299	542	3.72	3.9
	27B	65	>6.0	74	3	6.7	2.23	96947	220	440	4.00	232	452	105017	20.00	272	492	3.08	299	542	3.72	3.8
	27C	65	>6.0	74	3	6.7	2.23	96947	220	440	4.00	232	452	105017	20.00	272	492	3.08	299	542	3.72	3.7
4(f)-2	29A	70	3.5-6	73	3	13.9	4.62	201303	317	635	4.00	329	647	212868	20.00	369	687	5.82	406	755	7.04	7.3
	29B	70	3.5-6	73	3	13.9	4.62	201303	317	635	4.00	329	647	212868	20.00	369	687	5.82	406	755	7.04	7.2
	29C	65	3.5-6	73	3	13.9	4.62	201303	317	635	4.00	329	647	212868	20.00	369	687	5.82	406	755	7.04	7.6
4(f)-3	30A	70	>6	78	3	30.2	10.07	438540	468	937	4.00	480	949	455541	20.00	520	989	11.81	572	1087	14.29	14.4
	30B	70	>6	78	3	30.2	10.07	438540	468	937	4.00	480	949	455541	20.00	520	989	11.81	572	1087	14.29	15.0
4(f)-3c/ 4(f)-3d	30C	70	>6	78	3	19.5	6.49	282871	376	752	4.00	388	764	296554	20.00	428	804	7.90	471	885	9.56	9.6
4(f)-3c/ 4(f)-3d	30D	70	>6	78	3	19.5	6.49	282871	376	752	4.00	388	764	296554	20.00	428	804	7.90	471	885	9.56	10.2
4(f)-4	31A	68	>6	73	3	15.9	5.31	231423	340	680	4.00	352	692	243812	20.00	392	732	6.59	431	806	7.98	8.3
	31B	65	>6	73	3	15.9	5.31	231423	340	680	4.00	352	692	243812	20.00	392	732	6.59	431	806	7.98	8.0
4(f)-4a	31D	70	>6	76	3	10.9	3.65	158982	282	564	4.00	294	576	169276	20.00	334	616	4.72	367	677	5.71	6.7
4(f)-5	32A	58	1.5-3.5	65	2.5	10.6	4.22	183992	303	607	4.00	313	617	193191	20.00	353	657	5.33	389	722	6.44	7.0
	32B	57	1.5-3.5	65	2.5	10.6	4.22	183992	303	607	4.00	313	617	193191	20.00	353	657	5.33	389	722	6.44	6.4
4(f)-6	33A	55	0-1	59	2	19.3	9.63	419590	458	916	4.00	466	924	430647	20.00	506	964	11.20	557	1060	13.55	13.9
	33B	48	0-1	59	2	19.3	9.63	419590	458	916	4.00	466	924	430647	20.00	506	964	11.20	557	1060	13.55	13.6
4(f)-7	34A	55	1.5-3	62.5	2	13.0	6.52	284168	377	754	4.00	385	762	293279	20.00	425	802	7.82	467	882	9.47	8.3
	34B	60	0-1	62.5	2	13.0	6.52	284168	377	754	4.00	385	762	293279	20.00	425	802	7.82	467	882	9.47	10.2

Natural Storage Area Calculations

Summary of Calculations for the Natural Storage Areas Located on 4(f) Property

The areas of impact were calculated by estimating an initial and maximum stage elevation in each natural storage area and measuring the area for each respective elevation. The "initial" stage represents an estimate of the storage volume elevation for the existing (pre) I-75 condition. The "proposed" stage is an estimate of the storage volume elevation for the proposed (post) I-75 condition. Pre and post stages for the 100-year runoff volumes were then interpolated by calculating the available volume while ensuring that it is equal to or greater than the required storage volume. Once the pre and post stages were calculated, the post minus pre difference in elevations were determined. The maximum boundary elevations were used to establish the upper "impact" area and the initial boundary represents the lower "impact" area.

Given the uncertainties inherent to the locations of the contours shown on the SWFWMD aerial contour maps, the maximum boundary is shown at the upper limit of the depression to be conservative. The inside boundary of impact for each of the following natural storage areas are shown at the existing or pre stage. Therefore, the areas of impact were calculated by subtracting the area of the outer boundary from the area of the inner boundary. See the table below for the existing stage elevation, the proposed stage elevation and area of impact for each natural storage area.

Basin Name	Natural Storage Area Name	*Initial Boundary/ Existing Stage Elevation	*Proposed Stage Elevation	*Maximum Boundary Elevation	Estimated Area of Impact (ac)
30	3a/3bC	66.2	68.55	73	15.51
31	4a(w)C	56.7	57.02	62	6.65
31	4b(e)C	62.4	63.01	64	4.66
31	4b(w)C	62.6	63.44	66	2.52
32	5aC	56.6	56.97	59	6.81
32	5bC	49.3	49.75	54	5.23
33	6a/bC	50.1	50.6	53	3.67
33	6cC	55.7	56.02	60	5.67
34	7C	52.6	53.2	55	7.44

* All elevations in feet – NGVD '29

"CN" -- Pre-Development Conditions for Natural Storage Areas

Basin	Length (ft)	Impervious Width (ft)	Drainage Area (ac)	Impervious Area (ac)	% Hydrologic Soil Group (HSG)				% Impervious	HSG - % Impervious				HSG - % Pervious				TR55 Results: Weighted CN
					A	B	C	D		A	B	C	D	A	B	C	D	
4(f)-1	5050	76	47.5	8.81	47%	0%	53%	0%	19%	9%	0%	10%	0%	38%	0%	43%	0%	71
4(f)-2a	1410	76	13.2	2.46	100%	0%	0%	0%	19%	19%	0%	0%	0%	81%	0%	0%	0%	58
4(f)-2b	1030	76	7.2	1.80	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-2c	2010	76	14.1	3.51	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-3a	1960	76	13.4	3.42	100%	0%	0%	0%	26%	26%	0%	0%	0%	74%	0%	0%	0%	62
4(f)-3b	1400	76	9.1	2.44	100%	0%	0%	0%	27%	27%	0%	0%	0%	73%	0%	0%	0%	62
4(f)-3c	2410	76	16.6	4.20	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-3d	3720	76	28.3	6.49	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	60
4(f)-4a(w)	3500	76	21.3	6.11	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-4a(e)	3500	76	21.3	6.11	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-4b(w)	1700	76	13.1	2.97	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	61
4(f)-4b(e)	1700	76	13.1	2.97	100%	0%	0%	0%	23%	23%	0%	0%	0%	77%	0%	0%	0%	61
4(f)-5a	1210	76	8.2	2.11	100%	0%	0%	0%	26%	26%	0%	0%	0%	74%	0%	0%	0%	62
4(f)-5b	2080	76	14.8	3.63	100%	0%	0%	0%	25%	25%	0%	0%	0%	75%	0%	0%	0%	61
4(f)-6a	1760	76	10.4	3.07	0%	26%	20%	54%	29%	0%	8%	6%	16%	0%	18%	14%	38%	78
4(f)-6b	3387	76	47.2	5.91	60%	0%	40%	0%	13%	8%	0%	5%	0%	52%	0%	35%	0%	66
4(f)-6c	1280	76	7.7	2.23	100%	0%	0%	0%	29%	29%	0%	0%	0%	71%	0%	0%	0%	63
4(f)-7	2240	76	18.4	3.91	66%	0%	34%	0%	21%	14%	0%	7%	0%	52%	0%	27%	0%	67

"CN" -- Post-Development Conditions (8-lanes) for Natural Storage Areas

Basin	Length (ft)	Impervious Width (ft)	Drainage Area (ac)	Impervious Area (ac)	% Hydrologic Soil Group (HSG)				% Impervious	HSG - % Impervious				HSG - % Pervious				TR55 Results: Weighted CN
					A	B	C	D		A	B	C	D	A	B	C	D	
4(f)-1	5050	216	47.5	25.04	47%	0%	53%	0%	53%	25%	0%	28%	0%	22%	0%	25%	0%	82
4(f)-2a	1410	216	13.2	6.99	100%	0%	0%	0%	53%	53%	0%	0%	0%	47%	0%	0%	0%	75
4(f)-2b	1030	216	7.2	5.11	100%	0%	0%	0%	71%	71%	0%	0%	0%	29%	0%	0%	0%	84
4(f)-2c	2010	216	14.1	9.97	100%	0%	0%	0%	70%	70%	0%	0%	0%	30%	0%	0%	0%	83
4(f)-3a	1960	216	13.4	9.72	100%	0%	0%	0%	73%	73%	0%	0%	0%	27%	0%	0%	0%	85
4(f)-3b	1400	216	9.1	6.94	100%	0%	0%	0%	77%	77%	0%	0%	0%	23%	0%	0%	0%	87
4(f)-3c	2410	216	16.6	11.95	100%	0%	0%	0%	72%	72%	0%	0%	0%	28%	0%	0%	0%	84
4(f)-3d	3720	216	28.3	18.45	100%	0%	0%	0%	65%	65%	0%	0%	0%	35%	0%	0%	0%	81
4(f)-4a(w)	3500	216	21.3	17.36	100%	0%	0%	0%	81%	81%	0%	0%	0%	19%	0%	0%	0%	89
4(f)-4a(e)	3500	216	21.3	17.36	100%	0%	0%	0%	81%	81%	0%	0%	0%	19%	0%	0%	0%	89
4(f)-4b(w)	1700	216	13.1	8.43	100%	0%	0%	0%	64%	64%	0%	0%	0%	36%	0%	0%	0%	80
4(f)-4b(e)	1700	216	13.1	8.43	100%	0%	0%	0%	64%	64%	0%	0%	0%	36%	0%	0%	0%	80
4(f)-5a	1210	216	8.2	6.00	100%	0%	0%	0%	74%	74%	0%	0%	0%	26%	0%	0%	0%	85
4(f)-5b	2080	216	14.8	10.31	100%	0%	0%	0%	70%	70%	0%	0%	0%	30%	0%	0%	0%	83
4(f)-6a	1760	216	10.4	8.73	0%	26%	20%	54%	84%	0%	22%	17%	45%	0%	4%	3%	9%	95
4(f)-6b	3387	216	47.2	16.80	60%	0%	40%	0%	36%	21%	0%	14%	0%	39%	0%	26%	0%	74
4(f)-6c	1280	216	7.7	6.35	100%	0%	0%	0%	83%	83%	0%	0%	0%	17%	0%	0%	0%	90
4(f)-7	2240	216	18.4	11.11	66%	0%	34%	0%	60%	40%	0%	21%	0%	26%	0%	13%	0%	83

"Q" -- Pre-Development Conditions for Natural Storage Areas

Basin	Proposed Drainage Area (ac)	Total Length: Longest Path (ft)	Sheet Flow					Shallow Concentrated Flow				TR55 Results:				
			Surface Description	Length (ft)	2-yr, 24-hr Rainfall: Figure B-3 (in)	Difference in Elevation over length (ft)	Slope (ft/ft)	Surface Description	Flow Length (ft)	Difference in Elevation over length (ft)	Slope (ft/ft)	Tc (hrs)	25-Yr Peak Outflow (cfs)	100-Yr Peak Outflow (cfs)	25-Yr Runoff (in)	100-Yr Runoff (in)
4(f)-1	47.5	2099	Smooth Surface	34	5	0.69	0.020	Unpaved	2065	42	0.020	0.26	291	388	5.5	7.3
4(f)-2a	13.2	1334	Smooth Surface	34	5	0.69	0.020	Unpaved	1300	4	0.003	0.36	47	68	3.9	5.4
4(f)-2b	7.23	1234	Smooth Surface	34	5	0.69	0.020	Unpaved	1200	12	0.010	0.21	36	51	4.2	5.9
4(f)-2c	14.1	1534	Smooth Surface	34	5	0.69	0.020	Unpaved	1500	32	0.021	0.19	74	104	4.2	5.9
4(f)-3a	13.4	1634	Smooth Surface	34	5	0.69	0.020	Unpaved	1600	7	0.004	0.44	50	70	4.3	6.0
4(f)-3b	9.1	1134	Smooth Surface	34	5	0.69	0.020	Unpaved	1100	7	0.006	0.25	44	62	4.3	6.0
4(f)-3c	16.6	2134	Smooth Surface	34	5	0.69	0.020	Unpaved	2100	18	0.009	0.39	63	90	4.2	5.9
4(f)-3d	28.3	1634	Smooth Surface	34	5	0.69	0.020	Unpaved	1200	7	0.006	0.34	111	159	4.1	5.7
4(f)-4a(w)	21.3	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	11	0.006	0.45	81	114	4.5	6.1
4(f)-4a(e)	21.3	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	11	0.006	0.45	81	114	4.5	6.1
4(f)-4b(w)	13.1	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	26	0.011	0.40	49	70	4.2	5.9
4(f)-4b(e)	13.1	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	26	0.011	0.40	49	70	4.2	5.9
4(f)-5a	8.2	834	Smooth Surface	34	5	0.69	0.020	Unpaved	800	18	0.023	0.10	56	77	4.3	6.0
4(f)-5b	14.8	1134	Smooth Surface	34	5	0.69	0.020	Unpaved	1100	18	0.016	0.45	53	75	4.2	5.9
		1200						Unpaved	1200	2	0.002					
4(f)-6a	10.4	2034	Smooth Surface	34	5	0.69	0.020	Unpaved	2000	7	0.004	0.55	52	67	6.3	8.2
4(f)-6b	47.2	2434	Smooth Surface	34	5	0.69	0.020	Unpaved	2400	18	0.008	0.47	193	265	4.8	6.6
4(f)-6c	7.7	834	Smooth Surface	34	5	0.69	0.020	Unpaved	800	14	0.018	0.11	52	72	4.5	6.1
4(f)-7	18.4	1734	Smooth Surface	34	5	0.69	0.020	Unpaved	1700	31	0.018	0.22	109	149	5.0	6.7

"Q" -- Post-Development Conditions (8-lanes) for Natural Storage Areas

Basin	Proposed Drainage Area (ac)	Total Length: Longest Path (ft)	Sheet Flow					Shallow Concentrated Flow				TR55 Results:				
			Surface Description	Length (ft)	2-yr, 24-hr Rainfall: Figure B-3 (in)	Difference in Elevation over length (ft)	Slope (ft/ft)	Surface Description	Flow Length (ft)	Difference in Elevation over length (ft)	Slope (ft/ft)	Tc (hrs)	25-Yr Peak Outflow (cfs)	100-Yr Peak Outflow (cfs)	25-Yr Runoff (in)	100-Yr Runoff (in)
4(f)-1	47.5		Smooth Surface	48	5	0.96	0.020	Paved	2065	42	0.020	0.21	397	509	6.8	8.7
4(f)-2a	13.2		Smooth Surface	48	5	0.96	0.020	Paved	1300	4	0.003	0.29	84	111	6.0	7.8
4(f)-2b	7.23		Smooth Surface	48	5	0.96	0.020	Paved	1200	12	0.010	0.17	68	86	7.1	9.0
4(f)-2c	14.1		Smooth Surface	48	5	0.96	0.020	Paved	1500	32	0.021	0.15	136	174	6.9	8.9
4(f)-3a	13.4		Smooth Surface	48	5	0.96	0.020	Paved	1600	7	0.004	0.23	114	145	7.2	9.1
4(f)-3b	9.1		Smooth Surface	48	5	0.96	0.020	Paved	1100	7	0.006	0.16	92	116	7.4	9.4
4(f)-3c	16.6		Smooth Surface	48	5	0.96	0.020	Paved	2100	18	0.009	0.30	124	158	7.1	9.0
4(f)-3d	28.3		Smooth Surface	48	5	0.96	0.020	Paved	1200	7	0.006	0.23	224	288	6.7	8.6
4(f)-4a(w)	21.3		Smooth Surface	48	5	0.96	0.020	Paved	2000	11	0.006	0.29	175	220	7.7	9.6
4(f)-4a(e)	21.3		Smooth Surface	48	5	0.96	0.020	Paved	2000	11	0.006	0.29	175	220	7.7	9.6
4(f)-4b(w)	13.1		Smooth Surface	48	5	0.96	0.020	Paved	2400	26	0.011	0.34	86	111	6.6	8.5
4(f)-4b(e)	13.1		Smooth Surface	48	5	0.96	0.020	Paved	2400	26	0.011	0.34	86	111	6.6	8.5
4(f)-5a	8.2		Smooth Surface	48	5	0.96	0.020	Paved	800	18	0.023	0.10	93	118	7.2	9.1
4(f)-5b	14.8		Smooth Surface	48	5	0.96	0.020	Paved	1100	18	0.016	0.38	97	124	6.9	8.9
								Paved	1200	2	0.002					
4(f)-6a	10.4		Smooth Surface	48	5	0.96	0.020	Paved	2000	7	0.004	0.29	94	116	8.4	10.4
4(f)-6b	47.2		Smooth Surface	48	5	0.96	0.020	Paved	2400	18	0.008	0.34	275	362	5.8	7.7
4(f)-6c	7.7		Smooth Surface	48	5	0.96	0.020	Paved	800	14	0.018	0.10	95	119	7.8	9.8
4(f)-7	18.4		Smooth Surface	48	5	0.96	0.020	Paved	1700	31	0.018	0.20	160	204	6.9	8.9

Estimated Stormwater Management Facility (SMF) Volume Requirements (8-lanes) for Natural Storage Areas

Basin	Attenuation Volume						Treatment Volume						25-Year Attenuation Volume						Total Required SMF Volume (ac-ft)
	Pre 100-Yr Runoff (ft)	Post 100-Yr Runoff (ft)	Proposed Drainage Area (ac)	Pre 100-Yr Runoff Volume (ac-ft)	Post 100-Yr Runoff Volume (ac-ft)	100-Yr Post-Pre Attenuation Volume (ac-ft)	Basin Type	SMF Type (wet/dry)	Required Runoff for Treatment (in)	% Impervious Drainage Area	Impervious Drainage Area (ac)	Required Treatment Volume (ac-ft)	Pre 25-Year Peak Outflow, Q_o (CFS)	Post 25-Year Peak Inflow, Q_i (CFS)	Actual Q_o/Q_i Ratio	Adjusted Q_o/Q_i Ratio	Adjusted Q_i (CFS)	25-Year Volume (ac-ft)	
4(f)-1	0.61	0.73	47.5	28.9	34.4	5.5	Closed	Wet	1	0.53	25.0	2.1	291	397	0.73	N/A	N/A	5.30	12.9
4(f)-2a	0.45	0.65	13.2	5.9	8.6	2.6	Closed	Wet	1	0.53	7.0	0.6	47	84	0.56	N/A	N/A	1.70	4.9
4(f)-2b	0.49	0.75	7.2	3.6	5.4	1.9	Closed		1	0.71	5.1	0.4	36	68	0.53	N/A	N/A	1.10	3.4
4(f)-2c	0.49	0.74	14.1	7.0	10.5	3.5	Closed		1	0.70	10.0	0.8	74	136	0.54	N/A	N/A	2.10	6.5
4(f)-3a	0.50	0.76	13.4	6.7	10.2	3.5	Closed		1	0.73	9.7	0.8	50	114	0.44	N/A	N/A	2.40	6.7
4(f)-3b	0.50	0.78	9.1	4.5	7.1	2.6	Closed		1	0.77	6.9	0.6	44	92	0.48	N/A	N/A	1.60	4.7
4(f)-3c	0.49	0.75	16.6	8.1	12.4	4.3	Closed		1	0.72	12.0	1.0	63	124	0.51	N/A	N/A	2.70	8.0
4(f)-3d	0.48	0.72	28.3	13.4	20.3	6.8	Closed		1	0.65	18.4	1.5	111	224	0.50	N/A	N/A	4.40	12.8
4(f)-4a(w)	0.51	0.80	21.3	10.9	17.1	6.2	Closed		1	0.81	17.4	1.4	81	175	0.46	N/A	N/A	4.00	11.7
4(f)-4a(e)	0.51	0.80	21.3	10.9	17.1	6.2	Closed		1	0.81	17.4	1.4	81	175	0.46	N/A	N/A		
4(f)-4b(w)	0.49	0.71	13.1	6.4	9.3	2.8	Closed		1	0.64	8.4	0.7	49	86	0.57	N/A	N/A	1.80	5.3
4(f)-4b(e)	0.49	0.71	13.1	6.4	9.3	2.8	Closed		1	0.64	8.4	0.7	49	86	0.57	N/A	N/A		
4(f)-5a	0.50	0.76	8.2	4.1	6.2	2.1	Closed		1	0.74	6.0	0.5	56	93	0.60	N/A	N/A	1.20	3.8
4(f)-5b	0.49	0.74	14.8	7.3	11.0	3.7	Closed		1	0.70	10.3	0.9	53	97	0.55	N/A	N/A	2.20	6.8
4(f)-6a	0.68	0.87	10.4	7.1	9.0	1.9	Closed		1	0.84	8.7	0.7	52	94	0.55	N/A	N/A	1.90	4.5
4(f)-6b	0.55	0.64	47.2	26.0	30.3	4.3	Closed		1	0.36	16.8	1.4	193	275	0.70	N/A	N/A	4.80	10.5
4(f)-6c	0.51	0.82	7.7	3.9	6.3	2.4	Closed		1	0.83	6.3	0.5	52	95	0.55	N/A	N/A	1.30	4.2
4(f)-7	0.56	0.74	18.4	10.3	13.6	3.4	Closed		1	0.60	11.1	0.9	109	160	0.68	N/A	N/A	2.30	6.6

Note: The above rows [4(f)-4a(e) and 4(f)-4b(e)] are shaded since the treatment and attenuation was assumed to be accomplished in the natural storage areas on the west.

Estimated Stormwater Management Facility (SMF) Area Requirements (8-lanes) for Natural Storage Areas

Basin	Est. Existing Ground Elevation of SMF Site (ft, NGVD)	SCS Depth to SHWT (ft)	Approximate Roadway Elevation (ft, NGVD)	Chosen SMF Depth (ft)	Required SMF Volume (ac-ft)	Initial Required SMF Area (ac)	Initial Required SMF Area (sq ft)	SMF Width (ft)	SMF Length (ft)	Assumed Side Slope	SMF Width w/ Side Slopes (ft)	SMF Length w/ Side Slopes (ft)	Water Surface Area @ Peak Design Stage (sq ft)	Berm Width (ft)	SMF Width (w/ Side Slopes & Berms) (ft)	SMF Length (w/ Side Slopes & Berms) (ft)	Total Req'd SMF Area (ac)
4(f)-1	90	1.5-3.5	117	2.5	12.9	5.17	225213	336	671	4.00	346	681	235380	20.00	386	721	6.38
4(f)-2	65	3.5-6	73	3	14.8	4.93	214653	328	655	4.00	340	667	226591	20.00	380	707	6.16
4(f)-3	70	>6	78	3	32.2	10.72	467010	483	966	4.00	495	978	484550	20.00	535	1018	12.51
4(f)-3d	70	>6	78	3	12.8	4.26	185432	304	609	4.00	316	621	196538	20.00	356	661	5.41
4(f)-3c/ 4(f)-3d	70	>6	78	3	20.7	6.92	301261	388	776	4.00	400	788	315378	20.00	440	828	8.37
4(f)-4	68	>6	73	3	17.0	5.67	247023	351	703	4.00	363	715	259818	20.00	403	755	6.99
4(f)-4a	70	>6	76	3	11.7	3.89	169482	291	582	4.00	303	594	180106	20.00	343	634	5.00
4(f)-5	58	1.5-3.5	65	2.5	10.6	4.22	183992	303	607	4.00	313	617	193191	20.00	353	657	5.33
4(f)-6	55	0-1	61	2	19.3	9.63	419590	458	916	4.00	466	924	430647	20.00	506	964	11.20
4(f)-7	55	1.5-3	63	2	6.6	3.30	143731	268	536	4.00	276	544	150228	20.00	316	584	4.24

100-year Floodplain Impact Calculations

I-75 Project Development and Environment Study
Estimated Alternative Stormwater Management Facility. Floodplains Impact.
WPI Seg. No.: 4110141
FAP No.: 0751-120I

Basin	100-YR Floodplain Impacts within the R/W	Alternative Stormwater Management Facility (SMF) I.D.#	Approximate Station Location and Side	Area (ft^2) Right	Area (acres)
3		3B	1287+00, Right	95064	2.18
3 & 4	1		1288+00, Left	14734	0.34
3 & 4	2		1286+50, Right	13877	0.32
4		4B	1295+50, Right	85700	1.97
4		4C	1298+50, Left	148936	3.42
5	3		1331+00, Left	4634	0.11
5	4		1332+00, Right	2985	0.07
5		5C	1333+00, Right	8586	0.20
5		5B	1334+00, Right	6315	0.14
8 & 9	5		1425+00, Left	5762	0.13
8 & 9	6		1440+00, Right	38123	0.88
8		8C	1422+00, Right	87394	2.01
9		9A	1425+00, Leftt	11272	0.26
9		9B	1427+00, Right	105219	2.42
9	7		1433+00, Left	9349	0.21
10	8		1446+00, Left	12559	0.29
		10A	1446+00, Right	178152	4.09
		10C	1447+00, Right	178152	4.09
15		15B	1597+00+00, Right	178633	4.10
15		15C	1422+00, Right	13474	0.31
17		17B	1688+00, Left	5694	0.13
18		18A	1700+00, Right	219093	5.03
18		18B	1707+00, Right	327288	7.51
19		19A	1765+00, Left	169465	3.89