

PRELIMINARY ENGINEERING REPORT

SR 600 (US 92) PROJECT DEVELOPMENT & ENVIRONMENT (PD&E) STUDY RE-EVALUATION

From East of I-4 to East of County Line Road
Hillsborough County, Florida



District Seven



Work Program Item Segment #: 435749-1

Federal Aid Project Number:
MAF-212-1(34)

August 2017

FINAL PRELIMINARY ENGINEERING REPORT

**Florida Department of Transportation
District Seven**

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The Florida Department of Transportation, District Seven, conducted a Project Development and Environment Study Re-evaluation for the proposed widening of State Road 600 (US 92) from east of Interstate 4 to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The environmental document that was reevaluated is a Type 2 Categorical Exclusion (Approved by the FHWA on March 24, 1994).

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.

Any reference contained herein to the Project Development & Environment Manual is referring to the 2016 revision.

August 2017

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with **Inwood Consulting Engineers, Inc.**, and that I have supervised the preparation of and approved the analysis, findings, opinions, conclusions, and technical advice reported in:

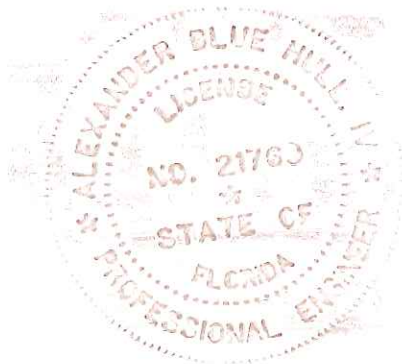
REPORT: Final Preliminary Engineering Report
PROJECT: SR 600 (US 92) PD&E Study Re-evaluation
LOCATION: From East of I-4 to East of County Line Road, Hillsborough County
WORK PROGRAM ITEM SEGMENT NO.: 435749-1
CLIENT: Florida Department of Transportation – District Seven
District Planning and Environmental Management Office

The following duly authorized engineering business performed the engineering work represented by this report:

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This report includes a summary of data collection efforts, corridor analysis, and conceptual design analysis for State Road 600 (US 92) from east of Interstate 4 to east of County Line Road in Hillsborough County, Florida.

I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through design standards and criteria set forth by the federal, state, and local regulatory agencies as well as professional judgment and experience.



Signature: Alex B. Hull
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P.E. Number: 21769
Date: 8/21/17

Any reference contained herein to the Project Development & Environment Manual is referring to the 2016 revision.

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Acronyms

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AN	Advance Notification
APE	Area of Potential Effect
CR	County Road
CDP	Comprehensive Development Plan
CEQ	Council on Environmental Quality
CFA	Core Foraging Area
CFR	Code of Federal Regulations
CRAS	Cultural Resource Assessment Survey
DBI	Ditch Bottom Inlet
DTTM	Design Traffic Technical Memorandum
ERP	Environmental Resource Permit
ETDM	Efficient Transportation Decision Making
FAA	Federal Aviation Authority
FAC	Florida Administrative Code
FS	Florida Statutes
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLUCCS	Florida Land Use Classification and Forms Cover System
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HOA	Homeowners Association
ITS	Intelligent Transportation System
LOS	Level of Service
LRE	Long Range Estimate
LRTP	Long Range Transportation Plan
MOT	Maintenance of Traffic
MPO	Metropolitan Planning Organization

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHWE	Normal High Water Elevation
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	Noise Study Report
NWI	National Wetland Inventory
PD&E	Project Development and Environment
PIP	Public Involvement Plan
PTR	Project Traffic Report
RCI	Roadway Characteristics Inventory
SWFWMD	Southwest Florida Water Management District
SHPO	State Historic Preservation Officer
SHS	State Highway System
SHWE	Seasonal High Water Elevation
SIP	State Implementation Plan
SIS	Strategic Intermodal System
SLD	Straight Line Diagram
SR	State Road
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TPO	Transportation Planning Organization
TSMO	Transportation Systems Management and Operations
TSP	Transit Signal Priority
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

Section 1.0

Summary of Project

1.1 Summary

This *Final Preliminary Engineering Report (PER)* contains detailed engineering information that fulfills the purpose and need for the widening of State Road 600 / United States 92 (SR 600/US 92) from east of Interstate 4 (I-4) to east of County Line Road in Hillsborough County, Florida. Within the project limits, US 92 has a functional classification of Urban Principal Arterial Other, and it runs parallel to I-4. The total project length is approximately 18.1 miles. The environmental document is a Type 2 Categorical Exclusion, originally approved in March of 1994. Due to a change in design standards and existing conditions, the proposed project's Project Development and Environment PD&E Study was re-evaluated.

1.2 Summary of Preferred Alternatives from Original 1994 US 92 PD&E Study

The proposed improvements identified in the original PD&E Study are described below.

From Garden Lane to Falkenburg Road, the preferred improvement consisted of a six-lane urban facility with a 22-foot median within 122 feet of right-of-way and with 45 miles per hour (mph) design speed.

From Falkenburg Road to Kingsway Road, from Forbes Road to Mobley Street, and from Park Road to County Line Road, the preferred improvement consisted of a four-lane urban facility with a 46-foot median allowing for future expansion to six lanes within 122 feet of right-of-way and a 45 mph design speed.

From Kingsway Road to Forbes Road, the preferred improvement consisted of a four-lane rural facility with a 46-foot median within 198 feet of right-of-way and a 60 mph design speed.

Between Mobley Street and Park Road, the existing alignment and typical section of the one-way pair system (No-Build) was preferred with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted to an urban section.

The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix A.

1.3 Prior Type 2 CE Commitments and Additional New Commitments

The Florida Department of Transportation (FDOT) made the following prior commitments as part of the original 1994 PD&E Study:

1. "During the public hearing, the owners of Harwell Farms requested that the location of Pond 16 be re-evaluated. As shown in Appendix F, Sheet No. 19, based on the recommendations of this PD&E Study, Pond 16 would occupy most of the land owned by Harwell farms. The owners of Harwell Farms indicated at the public hearing that other vacant parcels with no specific use exist in the vicinity of Harwell Farms that could be just as suitable for a stormwater retention

pond. FDOT explained to the Harwell Farms owners that all pond locations are preliminary and will be re-evaluated based on more detailed analyses during the design phase. However, a note is made in this section to re-examine the location of Pond 16 during the design phase in the event that no other ponds are re-evaluated.”

Status: The PD&E Study Reevaluation Final Stormwater Management Facility Report and Technical Memorandum did not identify a SMF on the Harwell Farms property. However, a detailed Pond Siting Report will be completed during the design phase for each design segment.

2. “As discussed in Section 3, Reynolds Street in downtown Plant City consists of two 10-foot-wide travel lanes and two curbside eight-foot-wide parking lanes. This condition represents minimum design standards. The option to eliminate one of the parking lanes in order to provide standard 12-foot-wide travel lanes was considered; however, it was rejected after opposition from the City officials and local merchants who deemed that such design would adversely affect the character of downtown Plant City and impact local businesses. To maintain safety without increasing the width of the travel lanes, the study team recommended that through truck traffic be eliminated from the downtown one-way pair (Reynolds and Baker streets) between Alexander Street and Park Road. This recommendation was presented to the City Commission on September 27, 1993, which unanimously agreed “...to forward a letter indicating approval of the proposed elimination of through truck traffic from segments of US 92 between Alexander Street and Park Road if it should become necessary.” A copy of the meeting minutes is provided in Appendix C (1994 PD&E Study). During the design phase, a thorough evaluation should be made of the through truck traffic in downtown Plant City in order to determine its impacts on safety. It should be noted that Plant City has recently designated a downtown by-pass truck route by way of Park Road Extension, US 39, and Alexander Street. This route, however, is seldom used due to the directness of US 92.”

Status: There is no change in status regarding this commitment. The city would like to remove Paul Buchman Highway and Collins Street (SR 39) from the official truck route plan of Hillsborough County. This may come to fruition when and if FDOT and the City exchange Alexander Street for Paul Buchman Highway/Collins Street (SR 39).

“The FDOT has made the following new additional commitments that are based on this Re-evaluation effort:

3. Prior to construction, a survey of potential gopher tortoise habitat that may be impacted by the project will be undertaken. The survey will follow the latest survey criteria from the Florida Fish and Wildlife Conservation Commission’s (FWC’s) *Gopher Tortoise Permitting Guidelines*. A gopher tortoise relocation permit will be sought from the FWC for any tortoise burrows that cannot be avoided by the project. The relocation will be performed as close as practicable to the start of construction when near the active burrows.

-
4. The FDOT will implement Option E of the *Eastern Indigo Snake Programmatic Effect Determination Key* (United States Army Corps of Engineers, 2013) during the permitting phase of the project if there are less than 25 potentially occupied gopher tortoise burrows within 25 feet of the project limits.

The FDOT will also implement the *Standard Protection Measures for the Eastern Indigo Snake* (US Fish and Wildlife Service [FWS], 2013) during site preparation and construction. To ensure these protection measures are followed on site, the General Plan Notes will include the following statement: Eastern indigo snake habitat has been identified within the project limits. Utilize the U.S. Fish and Wildlife Service Standard Protection Measures for the Eastern Indigo Snake on the U.S. Fish and Wildlife Service website:

http://www.fws.gov/northflorida/indigosnakes/20130812_eastern_indigo_snake_standard_protection_measures.htm.

5. Impacts to suitable wood stork foraging areas will be calculated, if necessary, and offset through the preservation and/or enhancement of wetlands within the same core foraging area or through the purchase of credits at an FWS-approved mitigation bank.
6. For the following noise sensitive land uses, noise barriers are considered to be a potentially feasible and reasonable abatement measure.
 - Residences in Parkwood Estates and west of Webb Road (NSA WB2)
 - Residences west of Greenway Drive and Happy Homes Mobile Home Park (NSA WB6)
 - Residences located in and in the vicinity of Robinson Orange Park (NSA WB13)
 - Residences located West of Fletcher Lane (NSA WB14)
 - Residences located west of Bethlehem Road and in Coronation Court (NSA WB18)
 - Residences located at the Kingsway Subdivision (NSA WB26)
 - Residences located at the Brooks Residential Motel and Camp Knox Tourist Court (NSA WB35)
 - Star Motel/Rental Units (NSA EB4)
 - Shangri La Subdivision (NSA EB12)
 - Residences in the Family Rentals Mobile Home Park and west of Tanner Road (NSA EB25)
 - Residences in the Stonebridge Mobile Home Park (NSA EB30)
 - The estimated cost to construct the noise barriers ranges from \$1,538,760 to \$3,960,000 depending on barrier length and height.

The FDOT is committed to the construction of noise barriers at the locations above, contingent upon the following:

- Detailed noise analysis during the final design process of the project supports the need for, and the feasibility and reasonableness of providing the barriers as abatement;
- The detailed analysis demonstrates that the cost of the noise barrier will not exceed the cost effective limit;

-
- The residents/property owners benefitted by the noise barrier desire that a noise barrier be constructed; and
 - All safety and engineering conflicts or issues related to construction of a noise barrier are resolved.

A proposed noise barrier was evaluated during the proposed project's PD&E Re-evaluation study for the Camp Knox Tourist Court Resource Group (8HI04634). The noise barrier will be evaluated further during the proposed project's future design phase to affirm that it remains a cost reasonable and feasible barrier. The FDOT District Seven will continue to coordinate with the State Historic Preservation Officer (SHPO) during the design phase regarding potential effects to this historic resource.

7. FDOT District Seven will coordinate with the SHPO if there are any alterations to the proposed project's design which may alter its effects on significant historic resources.

1.4 Recommendations

Based on a comparative evaluation of Build Alternative impacts and their ability to meet the purpose and need for this project as well as public input and agency coordination received during the reevaluation study process, the preferred build alternative for each of the 11 segments shown in median

Figure 1-2 has been determined as described below. An evaluation matrix comparing the preferred build alternative with the other evaluated alternatives is shown in Table 5-24 and the preferred build alternative concept plans are provided in Appendix B. All of the preferred build typical sections discussed below have been revised and updated from the original PD&E Study based on new design criteria and standards.

Segment 1 from east of I-4 (Garden Lane) to west of CR 579 (Mango Road)

From Garden Lane to west of Interstate 75 (I-75) and from just east of I-75 to west of Mango Road, the preferred build typical section is a suburban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 17-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks and a five-foot additional width to provide for slope embankment connection to the existing grade at the edge of the road right-way. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 45 miles per hour (mph). The preferred build typical section for Segment 1 is shown in Figure 5-2.

From just west of I-75 to just east of I-75, the preferred build typical section is constrained by the piers for I-75. The preferred build typical section under I-75 is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 40.5-foot

median with eight-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. This typical section complies with the FDOT minimum design speed of 45 mph. This preferred build typical section is shown in Figure 5-3.

The preferred build alignment for Segment 1 from Garden Lane to west of Mango Road follows the preferred alignment from the original PD&E Study. From Garden Lane to Falkenburg Road, the preferred build alignment is a north alignment with right-of-way to be acquired from the north side of the roadway. From Falkenburg Road to just west of Mango Road, the alignment shifts to a south alignment with right-of-way to be acquired from the south side of the roadway.

Segment 2 from west of Mango Road to east Mango Road

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred alignment from the original PD&E Study alignment in this segment was a centered alignment. The preferred build alignment for Segment 2 from west of Mango Road to east Mango Road is the north alignment. This alignment was selected to minimize impacts to the Seffner Christian Academy in the southwest quadrant of the US 92 and Mango Road intersection and to minimize impacts to the Hardees Restaurant in the southeast quadrant of the intersection. The alignment is a south alignment adjacent to Segment 1. Then it transitions to the north side of US 92 through the intersection, and then transitions to a south alignment at the beginning of Segment 3.

Segment 3 from east of Mango Road to North Parsons Avenue

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred build alignment for Segment 3 from east of Mango Road to North Parsons Avenue follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 4 from North Parsons Avenue to east of Crow Wing Drive

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred build alignment for Segment 4 follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 5 from east of Crow Wing Drive to Castlewood Road

The preferred build typical section for this segment is a high speed suburban roadway with two 12-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a

54-foot median with eight-foot inside shoulders. Type E curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 29-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The preferred build typical section for Segment 5 is shown in Figure 5-4.

The preferred build alignment for Segment 5 from east of Crow Wing Drive to Castlewood Road follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 6 from Castlewood Road to west of Gallagher Road

The preferred build typical section for this segment is the same as for Segment 5 and is shown in Figure 5-4.

The preferred alignment from the original PD&E Study alignment in this segment was a north alignment. The preferred build alignment for Segment 6 from Castlewood Road to west of Gallagher Road is the south alignment. The south alignment was selected because the estimated total estimated cost estimate is less than the north alignment, and it eliminates impacts to Driscoll's of Florida. It also minimizes impacts to the newly constructed Independence Academy stormwater treatment facilities. The Hess and Marathon gas stations on the south side of the roadway are now impacted.

Segment 7 from west of Gallagher Road to Lynn Oaks Circle

The preferred build typical section for Segment 7 is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build alignment for Segment 7 from west of Gallagher Road to Lynn Oaks Circle follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 8 from Lynn Oaks Circle to east of Bethlehem Road

The preferred build typical section for Segment 8 is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build alignment for Segment 8 from Lynn Oaks Circle to east of Bethlehem Road follows the preferred alignment from the original PD&E Study and is a centered alignment.

Segment 9 from east of Bethlehem Road to Mobley Street

The preferred build typical section for the portion of Segment 9 from east of Bethlehem Road to Edwards Street is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build typical section for the portion of Segment 9 from Edwards Street to Mobley Street is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction.

The travel lanes are separated by a 22-foot median. Type E curb and gutter is along the inside and Type F curb and gutter is used along the outside lanes. Curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A minimum 12-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 9 from Edwards Street to Mobley Street is shown in Figure 5-5.

The preferred build alignment for Segment 9 from east of Bethlehem Road to Woodrow Wilson follows the preferred alignment from the original PD&E Study and is a south alignment from east of Bethlehem Road to Turkey Creek Road and then it transitions to a north alignment from Turkey Creek Road to Woodrow Wilson Street. From Woodrow Wilson Street to Mobley Street, the preferred build alignment is a centered alignment due to geometric constraints at the Thonotosassa Road intersection and the Baker Street (US 92) intersection.

Segment 10 from Mobley Street to Park Road

The preferred alternative for this segment from the original 1994 PD&E Study is No-Build with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted from a rural to urban roadway in order to provide sidewalks. Improvements have been completed in this section of the roadway which meet the intent of the original 1994 PD&E Study recommendation for this segment of the project. Due to the addition of turn lanes at the Park Road intersection, a transitional widening is required from Maryland Avenue to Park Road. From Mobley Street to Maryland Avenue, the preferred alternative for this segment is the No-Build Alternative. From Maryland Avenue to Park Road, the preferred build alternative is a transitional widening.

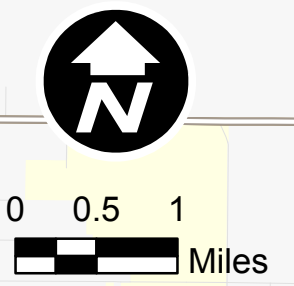
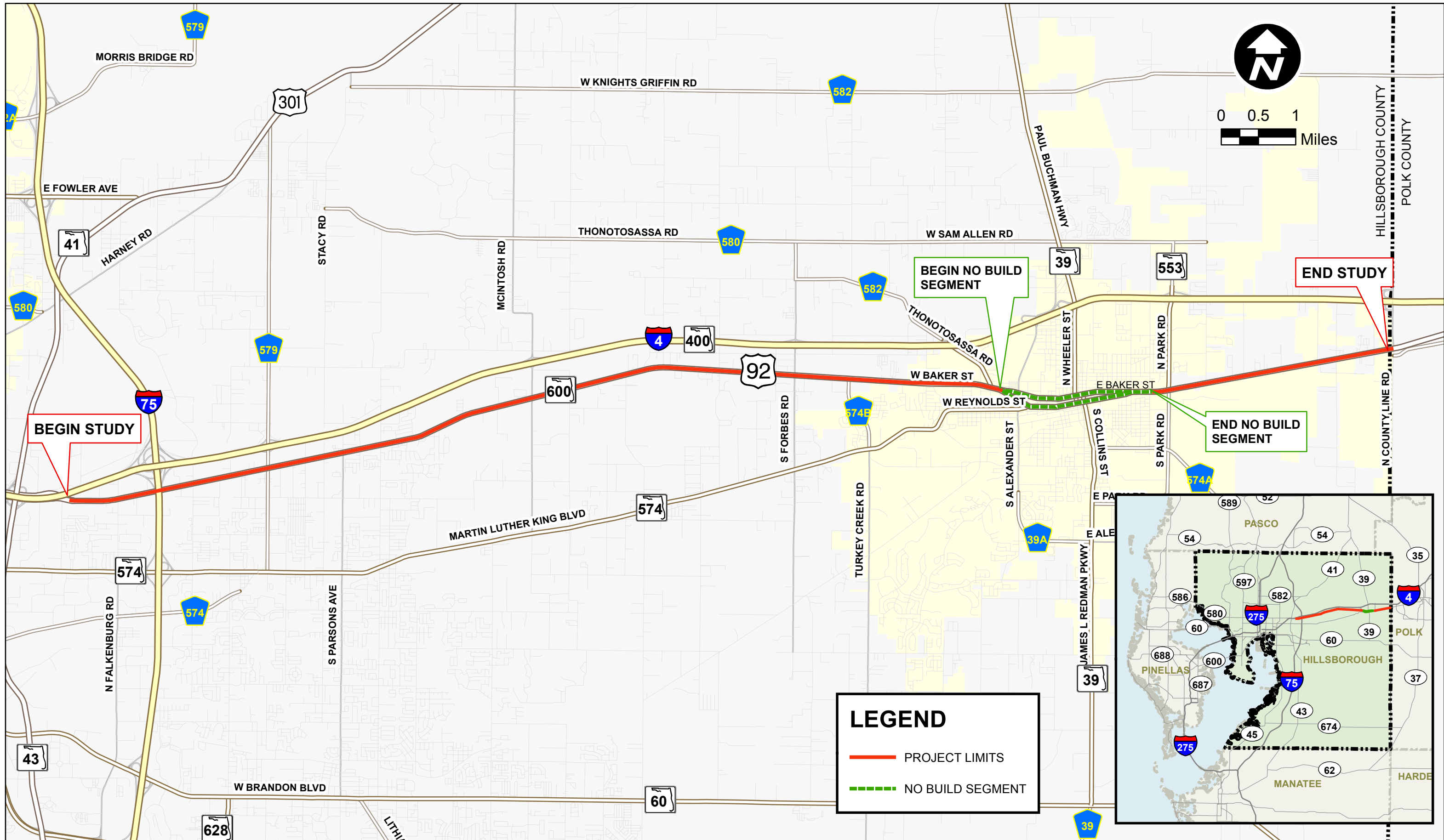
Segment 11 from Park Road to just east of County Line Road

The preferred build typical section for Segment 11 is Typical Section 5. It consists of two 12-foot travel lanes, a five-foot sidewalk, and a seven-foot buffered bike lane in each direction separated by a 40-foot median with eight-foot inside shoulders. The design speed is 50 mph and the typical section is shown in Figure 5-6. A 24-foot border and a 24-foot clear zone are provided along both sides of the roadway. This four-lane typical section requires a minimum of 136 feet of right-of-way. A design variation would be required for border width. The typical section complies with clear zone criteria so no design variation or exception would be required for clear zone.

The preferred build alignment for Segment 11 from Park Road to County Line Road follows the preferred alignment from the original PD&E Study and is a north alignment.

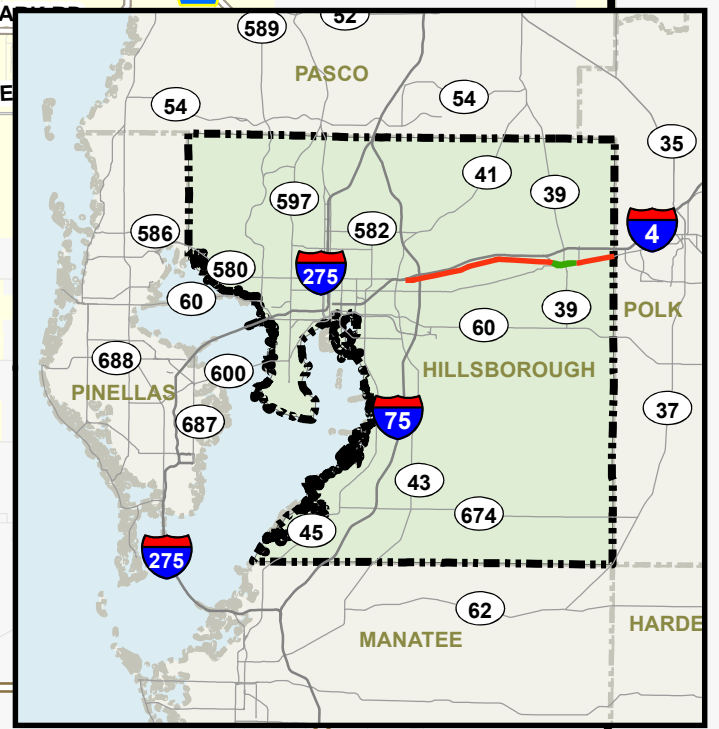
1.5 Description of the Proposed Action

FDOT, District Seven, conducted a re-evaluation of a PD&E Study regarding the proposed widening of SR 600 (US 92) in Hillsborough County that was originally completed in March 1994. The limits of this project on US 92 are from east of I-4 to east of County Line Road, which is a distance of approximately 18.1 miles. The location and limits of this study are shown in the project location map as Figure 1-1.



LEGEND

- PROJECT LIMITS
- - - NO BUILD SEGMENT



The proposed action includes capacity improvements consisting of widening US 92 as well as intersection improvements and bicycle and pedestrian facilities. The project was divided into 11 evaluation segments based on changes in land use and the proposed typical section in comparison with the land use and typical sections from the original PD&E Study. The evaluation segment limits are shown in Figure 1-2. Five different typical section alternatives are preferred for the project in addition to the No-Action Alternative which is preferred for the portion of the project that passes through Plant City from Mobley Street to west of Park Road. The five typical section alternatives are listed below and the proposed action for each evaluation segment is described in Table 1-1.

Typical Section 1 - Typical section 1 is a suburban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 17-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks and five-foot tie down widths on both sides of the road. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph.

Typical Section 2 - Typical Section 2 is a suburban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 40.5-foot median with eight-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. This typical section complies with the FDOT minimum design speed of 45 mph but would require a design variation if the roadway is expanded to six lanes in the future.

Typical Section 3 - Typical Section 3 is a high speed suburban roadway with two 12-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 54-foot median with eight-foot inside shoulders. Type E curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 29-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph.

Typical Section 4 - Typical Section 4 is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 22-foot median. Type E curb and gutter is along the inside and Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A minimum 12-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph.

Typical Section 5 - Typical Section 5 is a high speed suburban roadway two 12-foot travel lanes, a five-foot sidewalk, and a seven-foot buffered bike lane in each direction separated by a 40-foot median

with eight-foot inside shoulders with a design speed of 50 mph. A 24-foot border and a 24-foot clear zone are provided along both sides of the roadway. This four-lane typical section requires a minimum of 136 feet of right-of-way. A design variation would be required for border width. The typical section complies with clear zone criteria so no design variation or exception would be required for clear zone.

**Table 1-1
Proposed Actions by Evaluation Segment**

Evaluation Segment	Portion of Segment	Build Alternative
1	Garden Lane to west of I-75 & east of I-75 to west of Mango Road	Typical Section 1
	Just west of I-75 to Just east of I-75	Typical Section 2
2	All	Typical Section 1
3	All	Typical Section 1
4	All	Typical Section 1
5	All	Typical Section 3
6	All	Typical Section 3
7	All	Typical Section 3
8	All	Typical Section 3
9	East of Bethlehem Road to Edwards Street	Typical Section 3
	Edwards Street to Thonotosassa Road	Typical Section 4
10	All	No-Action
11	All	Typical Section 5

Section 2.0

Existing Conditions

The existing conditions for US 92 within the project limits were identified from GIS data, available as-built construction plans, FDOT Roadway Characteristics Inventory, straight-line diagrams (SLD), right-of-way maps, previous studies, and field reviews conducted by the project team. The discussion of the existing conditions addresses the limits of the Build alternatives from Garden Lane to Mobley Street and from west of Park Road to east of County Line Road.

2.1 Typical Sections

The existing typical sections throughout the study area vary. The existing typical section for US 92 from Garden Lane to Thonotosassa Road is generally a two-lane undivided rural roadway with 12-foot-wide travel lanes and paved outside shoulders. The paved shoulders are typically five feet wide. Stormwater is collected in swales along the outside of the roadway. Sidewalks or boardwalks have been added along one or both sides of the roadway. No designated bicycle facilities are provided. The existing roadway typical section for US 92 from Garden Lane to Thonotosassa Road is shown in Figure 2-1.

From Thonotosassa Road to Mobley Street, the roadway is in transition and consists of two 12-foot-wide eastbound lanes and two 12-foot-wide westbound lanes, of which the outside westbound lane transitions to a right turn at Thonotosassa Road. The existing roadway typical section for US 92 from Thonotosassa Road to Mobley Street is shown in Figure 2-2.

From North Gordon Street to Park Road, the US 92 existing typical section is a four-lane divided urban roadway with an 18-foot-wide raised grassed median and concrete curb and gutter on both the inside and outside of the roadway. There is a five-foot sidewalk along the north side of the road. The existing roadway typical section for US 92 from North Gordon Street to Park Road is shown in Figure 2-3.

From east of Park Road to east of County Line Road, US 92 is a rural facility with two 12-foot-wide lanes and grass shoulders and drainage ditches on both sides. The existing roadway typical section for US 92 east of Park Road to County Line Road is shown in Figure 2-4.

2.2 Roadway Right-of-Way

The existing right-of-way width information for US 92 was obtained from the Hillsborough County Property Appraiser maps and existing available right-of-way maps. The right-of-way width varies along the corridor but is typically 80 feet in width. The right-of-way width for US 92 from Garden Lane to approximately 1,200 feet east of Garden Lane transitions from 120 feet to 80 feet in width. It remains 80 feet in width through most of the remainder of the Build portion of the corridor except where intersection improvements have been made or where developments have been constructed. Existing right-of-way

for US 92 within the Build segments of the project limits is also shown in the preliminary concept plans located in Appendix B.

2.3 Roadway Classification

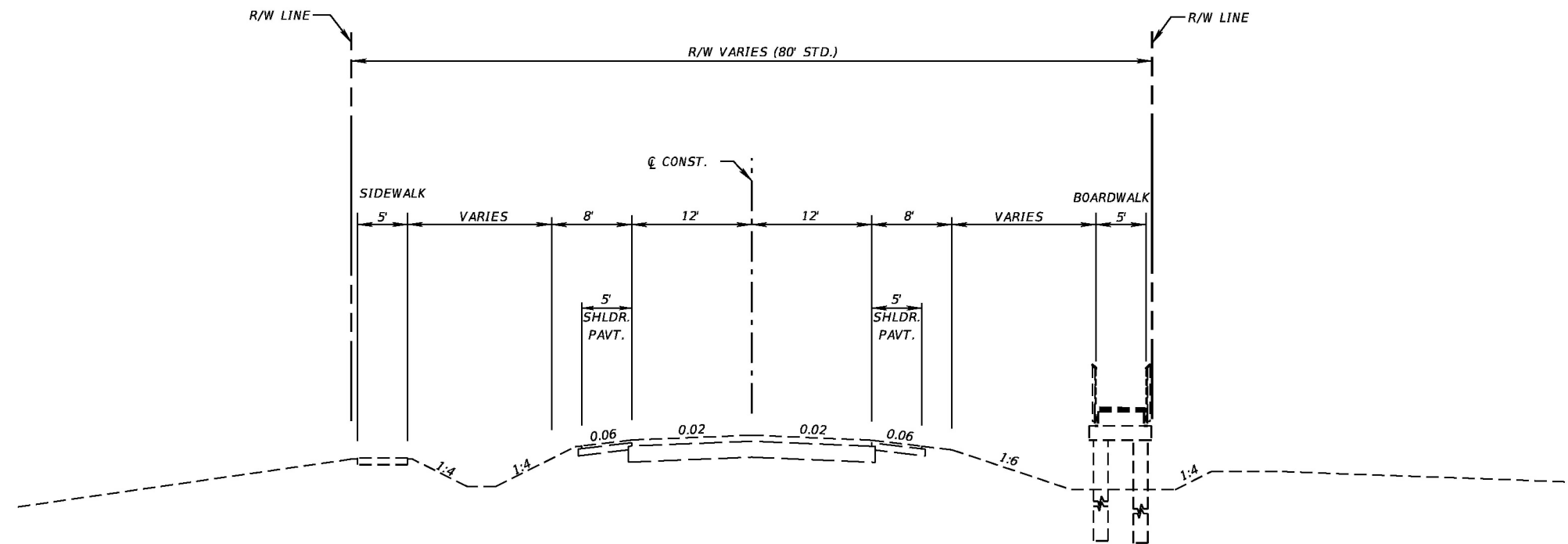
Currently, US 92 is designated as SR 600 on the State Highway System and is functionally classified by FDOT as an Urban Principle Arterial Other within the project study area. US 92 through the study area is not a designated highway on the Strategic Intermodal System. US 92 is designated as an evacuation route by the State Emergency Response Team, Florida Division of Emergency Management. US 92 is designated as Access Management Classification 5 from Garden Lane to Mobley Street, Access Management Classification 7 from Mobley Street to east of Park Road, and Access Management Classification 5 from east of Park Road to County Line Road.

2.4 Existing Land Use

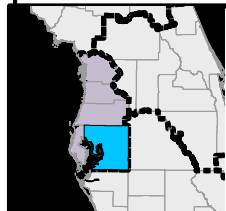
Existing parcel data in the form of GIS shapefiles from Hillsborough County and FDOT right-of-way maps were used to determine the property lines within the project area. These property lines are shown in the preliminary concept plans located in Appendix B.

The widening of US 92 is located within unincorporated Hillsborough County and the City of Plant City. Existing land use is a mix of primarily commercial and low, medium, and high density residential from the beginning of the project to North Kingsway Road with sporadic institutional, agricultural, industrial, wetlands, forest, and recreational lands. Figures 2-5 and 2-6 show the existing land use for the western portion of the project. From North Kingsway Road to North Turkey Creek Road, the existing land use consists of forest, agricultural, wetlands, and open lands as well as low and medium density residential with sporadic high density residential, industrial, and commercial uses. Figures 2-6 and 2-7 depict existing land use for this portion of the project. From North Turkey Creek Road to North County Line Road, the existing land use includes a mix of commercial and industrial uses as well as low, medium, and high density residential, forest, agricultural, wetlands, institutional, recreational, and open lands. Figures 2-7 and 2-8 show the existing land use for the eastern portion of the project.

The Hillsborough County Adopted 2025 Future Land Use Map shows the planned land use for this corridor as primarily community and urban mixed-use as well as low, medium, and high density residential uses from the beginning of the project to North Kingsway Road. Figures 2-9 and 2-10 depict the future land use for the western portion of the project. Future land use from North Kingsway Road to North Turkey Creek Road includes suburban and neighborhood mixed-uses and low and medium density residential. Figures 2-10 and 2-11 show the future land use for this portion of the project. From North Turkey Creek Road to North County Line Road, the Hillsborough County Adopted 2025 Future Land Use Map and the Plant City Adopted 2025 Future Land Use Map show a mix of light and heavy industrial as well as commercial; natural preservation; and low, medium, and high density residential uses. Figures 2-11 and 2-12 show the future land use for the eastern portion of the project.



US 92 FROM GARDEN LANE TO THONOTOSASSA ROAD
 EXISTING 2 LANE RURAL WITH SIDEWALK OR BOARDWALK
 DESIGN SPEED = 45 MPH

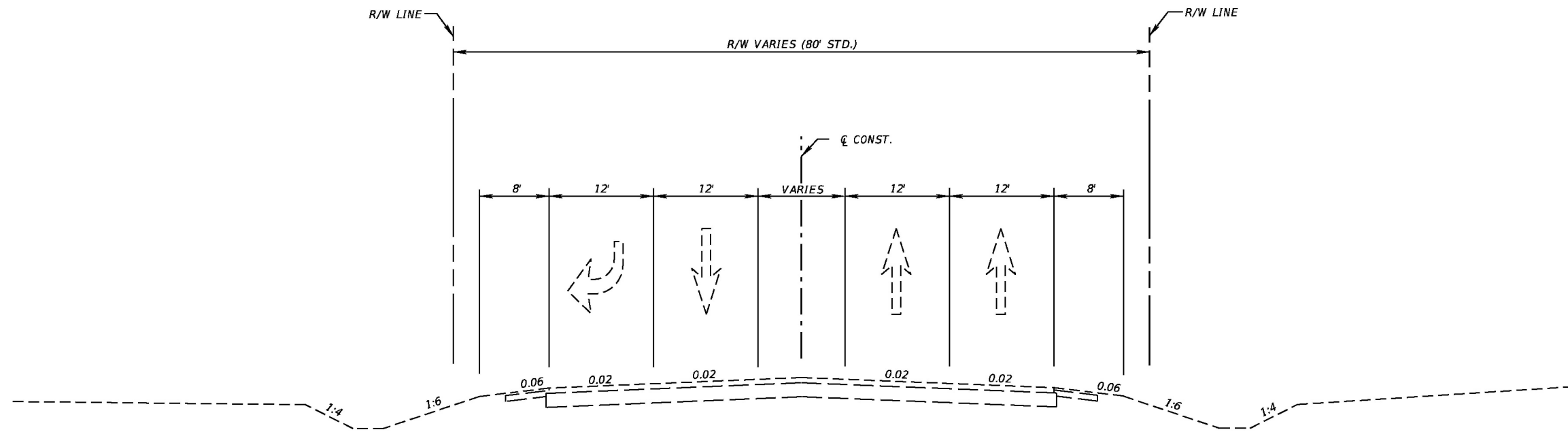


Florida Department
 of Transportation
 District 7

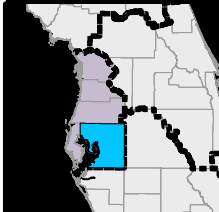
US 92 PD&E Study Re-evaluation
 from East of I-4 to East of County Line Road
 Hillsborough County, Florida
 Work Program Item Segment No: 435749-1

**TYPICAL SECTION
 EXISTING TWO LANE RURAL
 GARDEN LANE TO THONOTOSASSA ROAD**

Figure
2-1



FROM EAST OF THONOTOSASSA ROAD TO MOBLEY STREET
 EXISTING 4 LANE RURAL
 DESIGN SPEED = 45 MPH

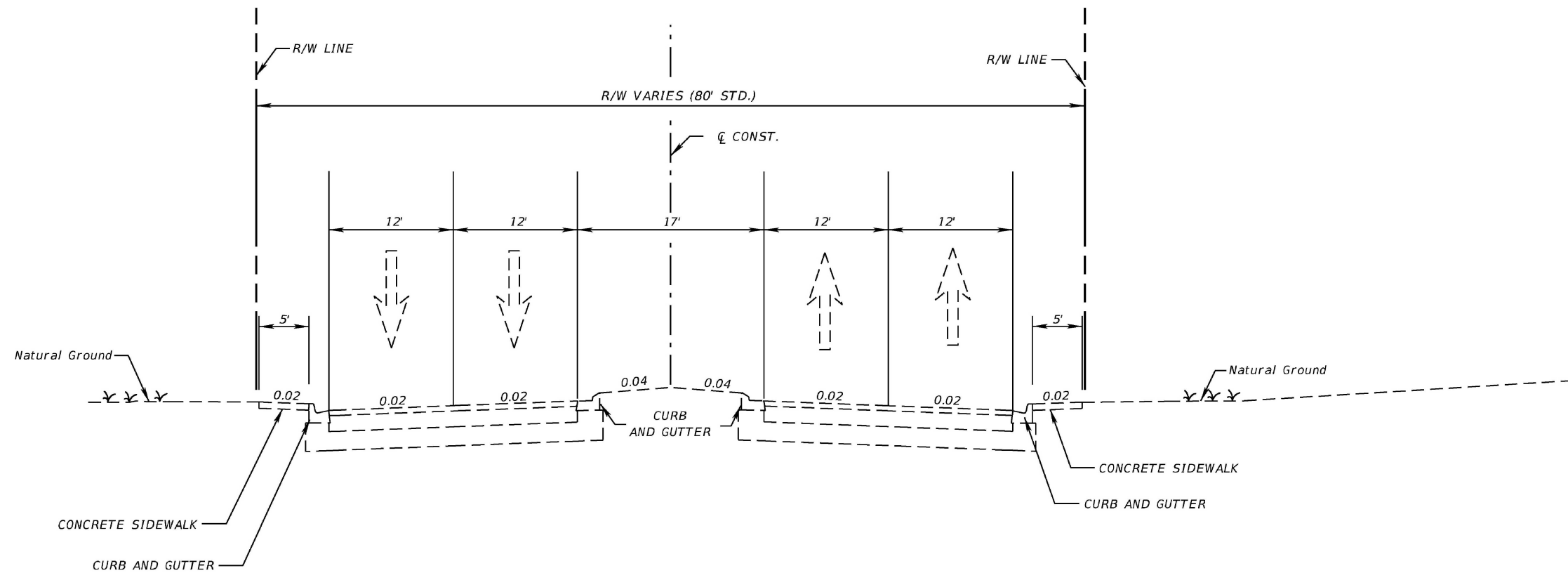


Florida Department
 of Transportation
 District 7

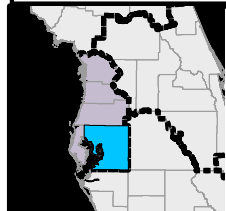
US 92 PD&E Study Re-evaluation
from East of I-4 to East of County Line Road
Hillsborough County, Florida
 Work Program Item Segment No: 435749-1

**TYPICAL SECTION
 EXISTING FOUR LANE RURAL
 THONOTOSASSA ROAD TO MOBLEY STREET**

Figure
2-2



US 92 FROM NORTH GORDON STREET TO PARK ROAD
 EXISTING 4 LANE URBAN
 DESIGN SPEED = 45 MPH



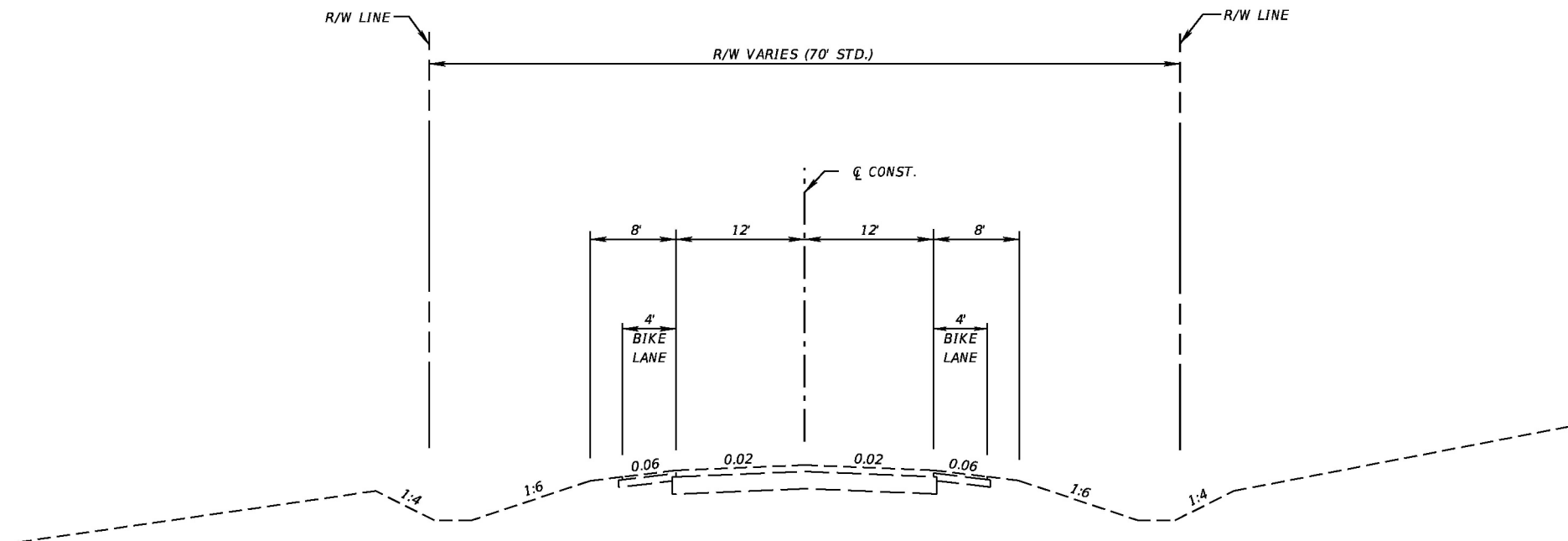
Florida Department
 of Transportation
 District 7

US 92 PD&E Study Re-evaluation
 from East of I-4 to East of County Line Road
 Hillsborough County, Florida

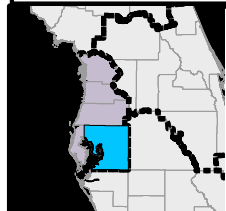
Work Program Item Segment No: 435749-1

TYPICAL SECTION
EXISTING FOUR LANE URBAN
US 92 FROM NORTH GORDON STREET TO PARK ROAD

Figure
 2-3



US 92 EAST OF PARK ROAD TO EAST OF COUNTY LINE ROAD
 EXISTING 2 LANE RURAL
 DESIGN SPEED = 45 MPH



Florida Department
 of Transportation
 District 7

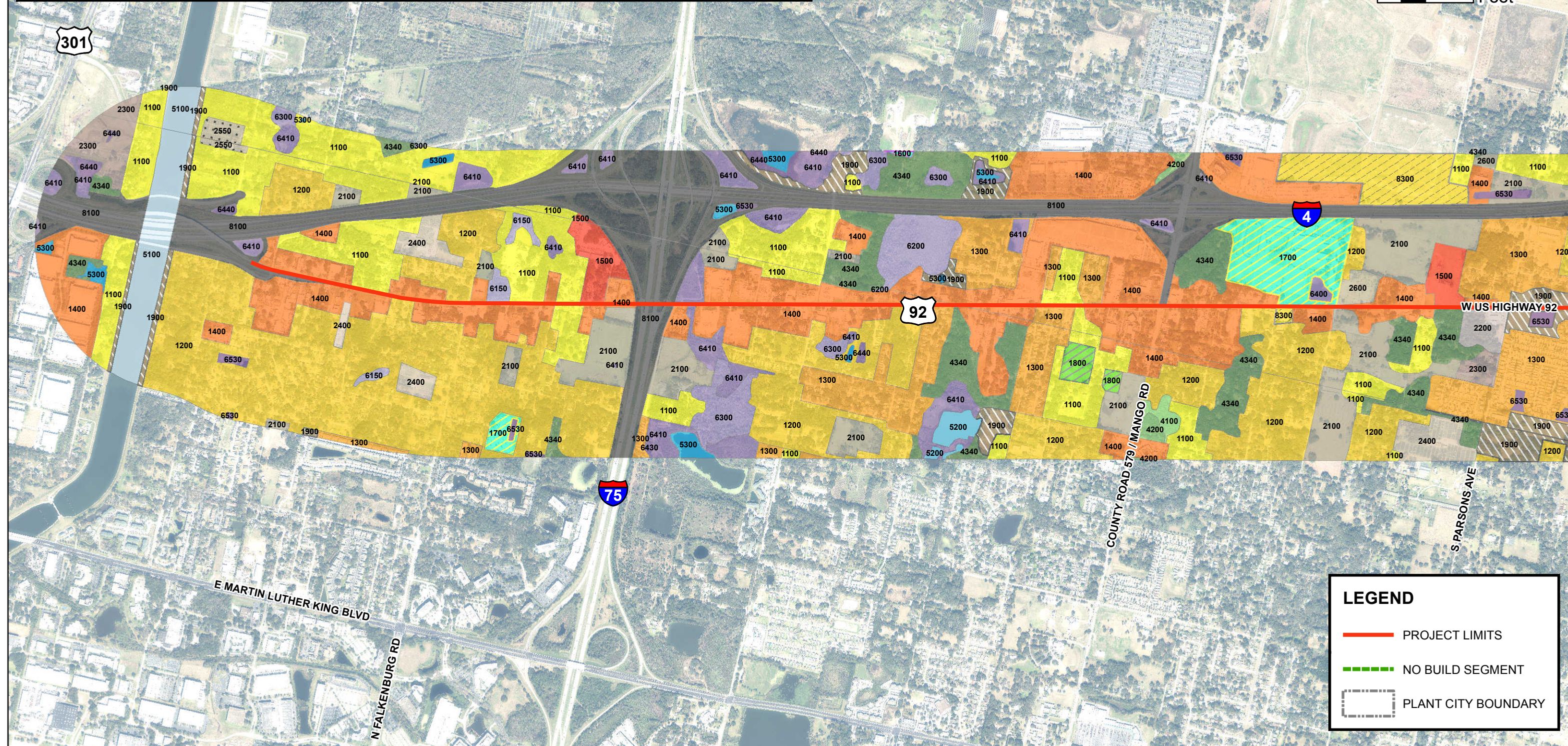
US 92 PD&E Study Re-evaluation
 from East of I-4 to East of County Line Road
 Hillsborough County, Florida

Work Program Item Segment No: 435749-1

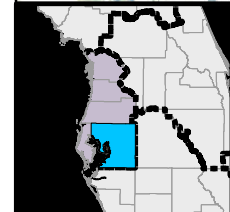
**TYPICAL SECTION
 EXISTING TWO LANE RURAL
 US 92 EAST OF PARK RD TO EAST OF COUNTY LINE ROAD**

Figure
2-4

EXISTING LAND USE			
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1200, RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	2140, ROW CROPS	4340, HARDWOOD CONIFER MIXED	6410, FRESHWATER MARSHES
1300, RESIDENTIAL HIGH DENSITY	2200, TREE CROPS	5100, STREAMS AND WATERWAYS	6430, WET PRAIRIES
1400, COMMERCIAL AND SERVICES	2300, FEEDING OPERATIONS	5200, LAKES	6440, EMERGENT AQUATIC VEGETATION
1500, INDUSTRIAL	2400, NURSERIES AND VINEYARDS	5300, RESERVOIRS	6530, INTERMITTENT PONDS
1600, EXTRACTIVE	2550, TROPICAL FISH FARMS	6110, BAY SWAMPS	7400, DISTURBED LAND
1700, INSTITUTIONAL	2600, OTHER OPEN LANDS <RURAL>	6150, STREAM AND LAKE SWAMPS (BOTTOMLAND)	8100, TRANSPORTATION
1800, RECREATIONAL	3200, SHRUB AND BRUSHLAND	6200, WETLAND CONIFEROUS FORESTS	8200, COMMUNICATIONS
1900, OPEN LAND	4100, UPLAND CONIFEROUS FOREST	6300, WETLAND FORESTED MIXED	8300, UTILITIES



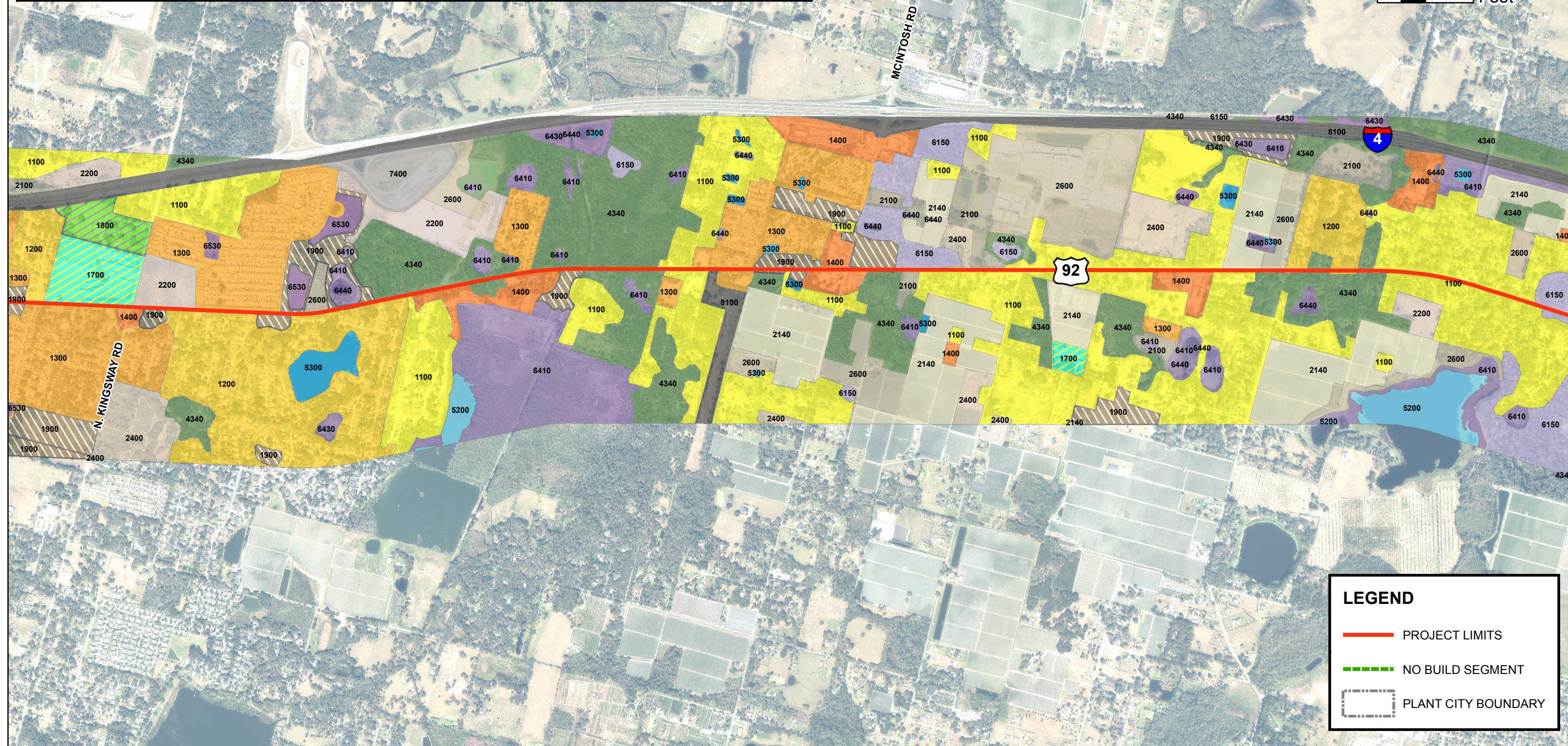
LEGEND	
	PROJECT LIMITS
	NO BUILD SEGMENT
	PLANT CITY BOUNDARY



EXISTING LAND USE			
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1200, RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	2140, ROW CROPS	4340, HARDWOOD CONIFER MIXED	6410, FRESHWATER MARSHES
1300, RESIDENTIAL HIGH DENSITY	2200, TREE CROPS	5100, STREAMS AND WATERWAYS	6430, WET PRAIRIES
1400, COMMERCIAL AND SERVICES	2300, FEEDING OPERATIONS	5200, LAKES	6440, EMERGENT AQUATIC VEGETATION
1500, INDUSTRIAL	2400, NURSERIES AND VINEYARDS	5300, RESERVOIRS	6530, INTERMITTENT PONDS
1600, EXTRACTIVE	2550, TROPICAL FISH FARMS	6110, BAY SWAMPS	7400, DISTURBED LAND
1700, INSTITUTIONAL	2600, OTHER OPEN LANDS <RURAL>	6150, STREAM AND LAKE SWAMPS (BOTTOMLAND)	8100, TRANSPORTATION
1800, RECREATIONAL	3200, SHRUB AND BRUSHLAND	6200, WETLAND CONIFEROUS FORESTS	8200, COMMUNICATIONS
1900, OPEN LAND	4100, UPLAND CONIFEROUS FOREST	6300, WETLAND FORESTED MIXED	8300, UTILITIES

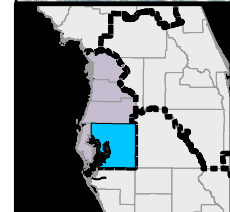


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Feet

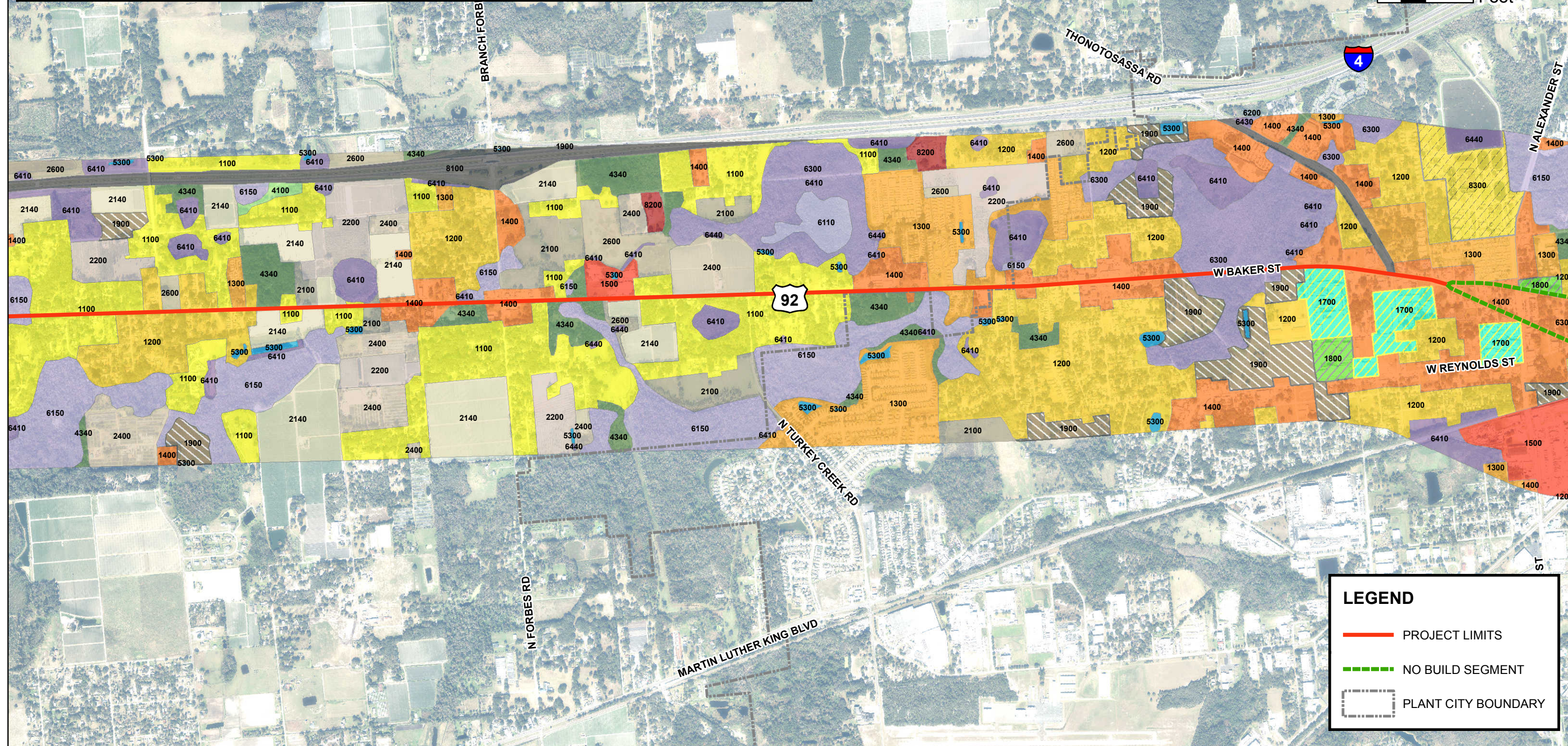
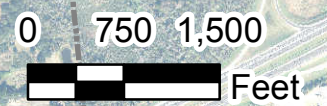


LEGEND

- PROJECT LIMITS
- - - NO BUILD SEGMENT
- PLANT CITY BOUNDARY

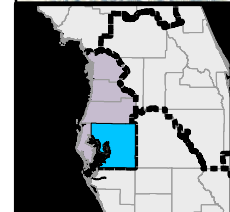


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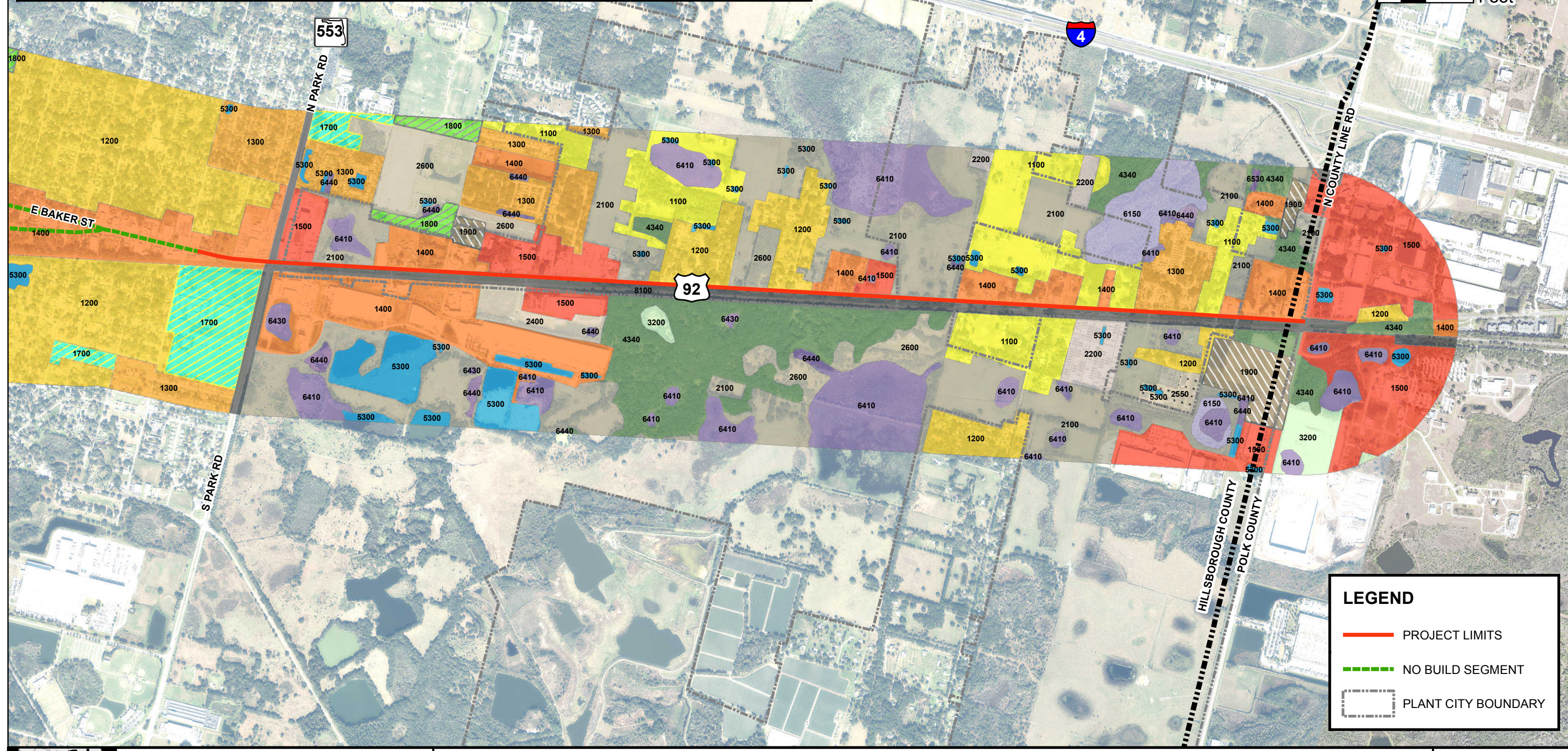
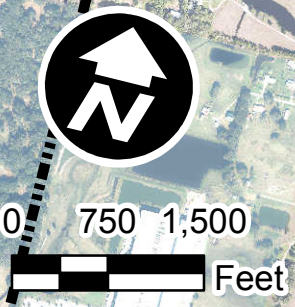


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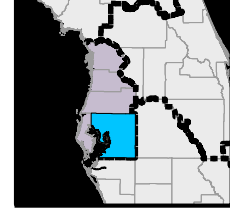
- PROJECT LIMITS
- - - NO BUILD SEGMENT
- PLANT CITY BOUNDARY





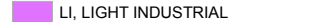





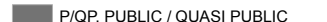



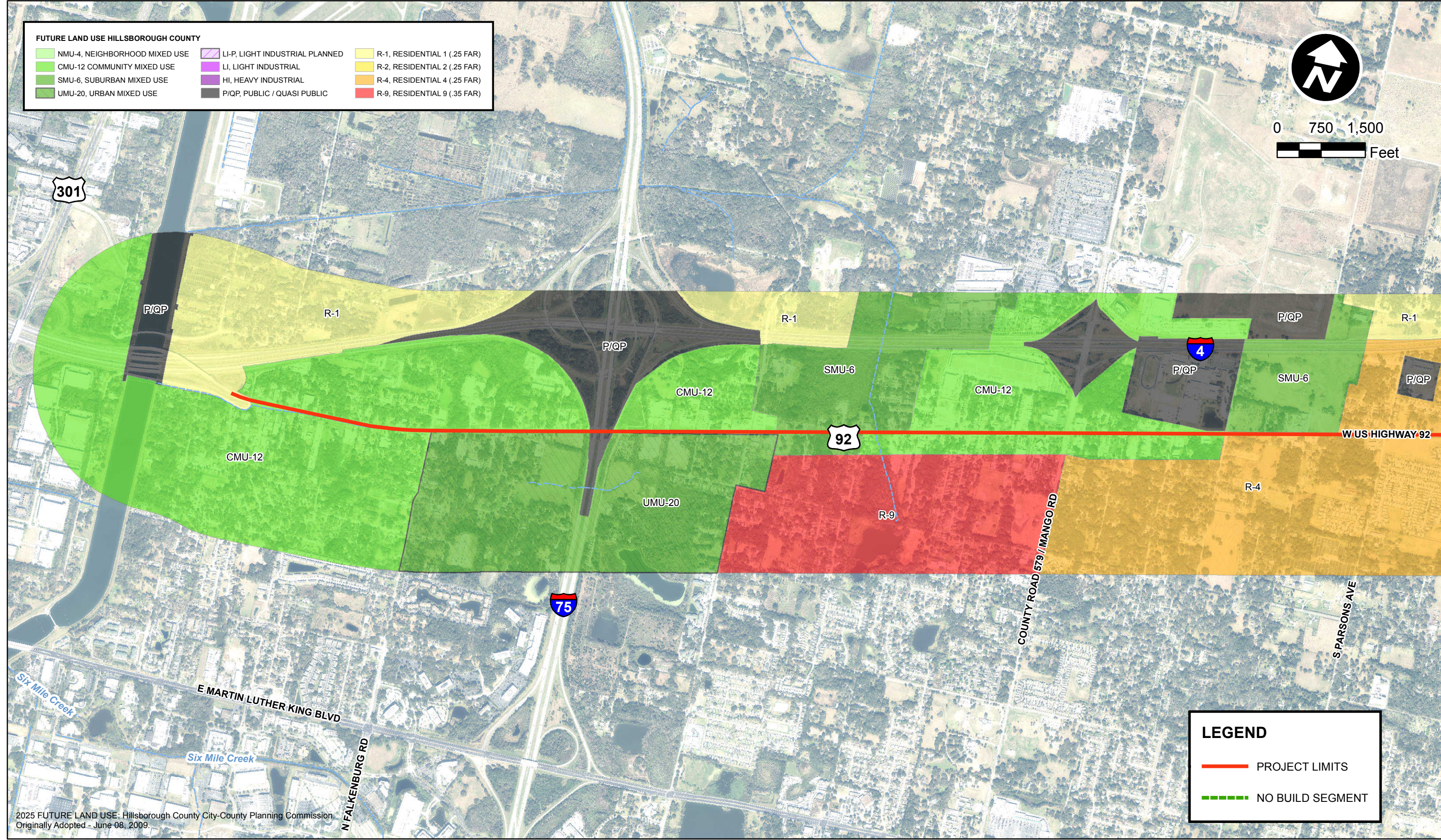
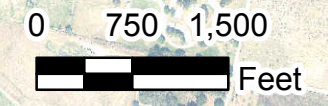
EXISTING LAND USE			
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1900, OPEN LAND	4100, UPLAND CONIFEROUS FOREST	6300, WETLAND FORESTED MIXED	8300, UTILITIES





LEGEND	
	PROJECT LIMITS
	NO BUILD SEGMENT
	PLANT CITY BOUNDARY

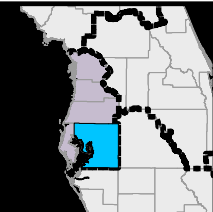


FUTURE LAND USE HILLSBOROUGH COUNTY					
	NMU-4, NEIGHBORHOOD MIXED USE		LI-P, LIGHT INDUSTRIAL PLANNED		R-1, RESIDENTIAL 1 (.25 FAR)
	CMU-12 COMMUNITY MIXED USE		LI, LIGHT INDUSTRIAL		R-2, RESIDENTIAL 2 (.25 FAR)
	SMU-6, SUBURBAN MIXED USE		HI, HEAVY INDUSTRIAL		R-4, RESIDENTIAL 4 (.25 FAR)
	UMU-20, URBAN MIXED USE		P/QP, PUBLIC / QUASI PUBLIC		R-9, RESIDENTIAL 9 (.35 FAR)



LEGEND	
	PROJECT LIMITS
	NO BUILD SEGMENT





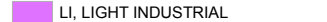





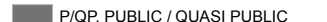

2025 FUTURE LAND USE: Hillsborough County City-County Planning Commission. Originally Adopted - June 08, 2009.

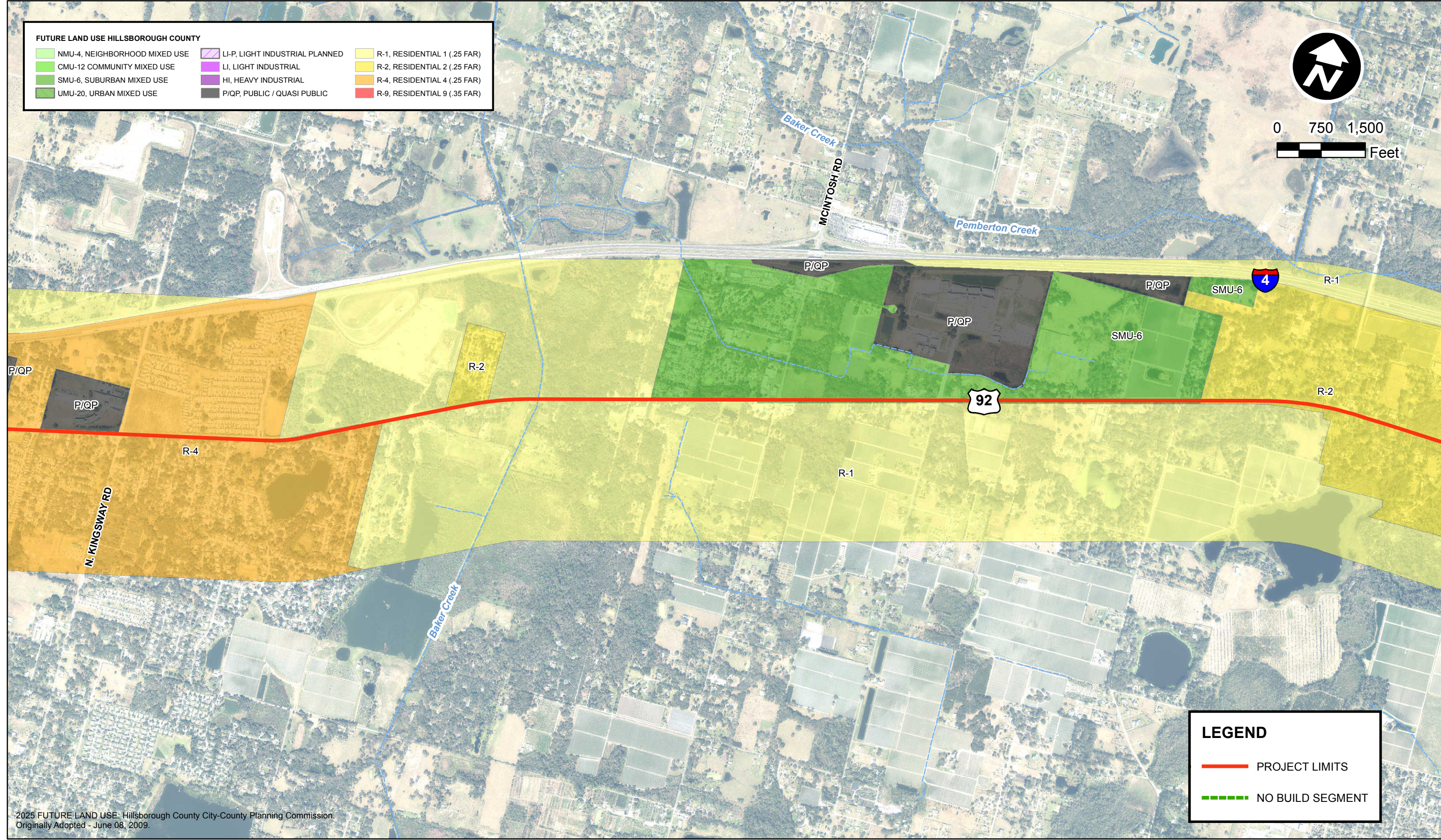
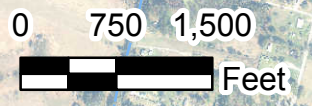




US 92 PD&E Study Re-evaluation
 from East of I-4 to East of County Line Road
 Hillsborough County, Florida
 Work Program Item Segment No: 435749-1

FUTURE LAND USE MAP 1
 (HILLSBOROUGH COUNTY 2025 AND PLANT CITY 2025)

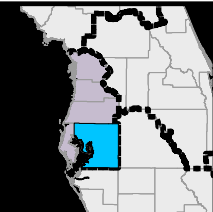
Figure
 2-9

FUTURE LAND USE HILLSBOROUGH COUNTY					
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	CMU-12 COMMUNITY MIXED USE		LI, LIGHT INDUSTRIAL		R-2, RESIDENTIAL 2 (.25 FAR)
	SMU-6, SUBURBAN MIXED USE		HI, HEAVY INDUSTRIAL		R-4, RESIDENTIAL 4 (.25 FAR)
	UMU-20, URBAN MIXED USE		P/QP, PUBLIC / QUASI PUBLIC		R-9, RESIDENTIAL 9 (.35 FAR)



LEGEND	
	PROJECT LIMITS
	NO BUILD SEGMENT

2025 FUTURE LAND USE: Hillsborough County City-County Planning Commission.
Originally Adopted - June 08, 2009.

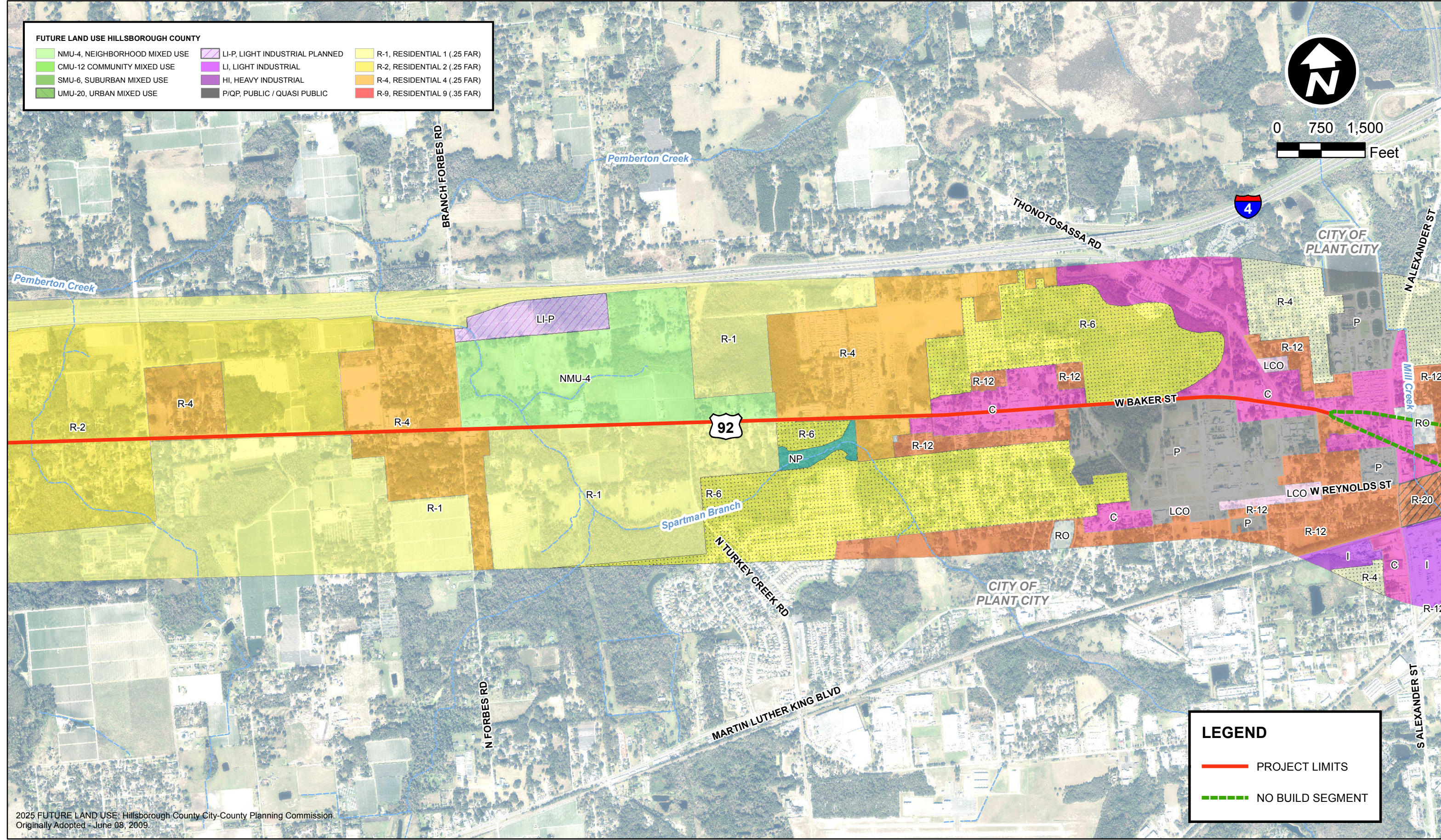
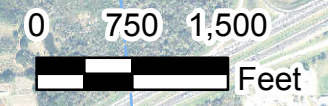


US 92 PD&E Study Re-evaluation
 from East of I-4 to East of County Line Road
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FUTURE LAND USE MAP 2
 (HILLSBOROUGH COUNTY 2025 AND PLANT CITY 2025)

Figure
2-10

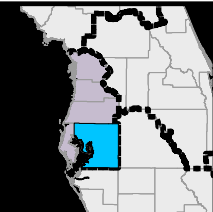
FUTURE LAND USE HILLSBOROUGH COUNTY		
	NMU-4, NEIGHBORHOOD MIXED USE	
	R-1, RESIDENTIAL 1 (.25 FAR)	
	CMU-12 COMMUNITY MIXED USE	
	R-2, RESIDENTIAL 2 (.25 FAR)	
	SMU-6, SUBURBAN MIXED USE	
	R-4, RESIDENTIAL 4 (.25 FAR)	
	UMU-20, URBAN MIXED USE	
	LI-P, LIGHT INDUSTRIAL PLANNED	
	LI, LIGHT INDUSTRIAL	
	HI, HEAVY INDUSTRIAL	
	P/QP, PUBLIC / QUASI PUBLIC	
	R-9, RESIDENTIAL 9 (.35 FAR)	



LEGEND

- PROJECT LIMITS
- NO BUILD SEGMENT

2025 FUTURE LAND USE: Hillsborough County City-County Planning Commission.
Originally Adopted - June 08, 2009.

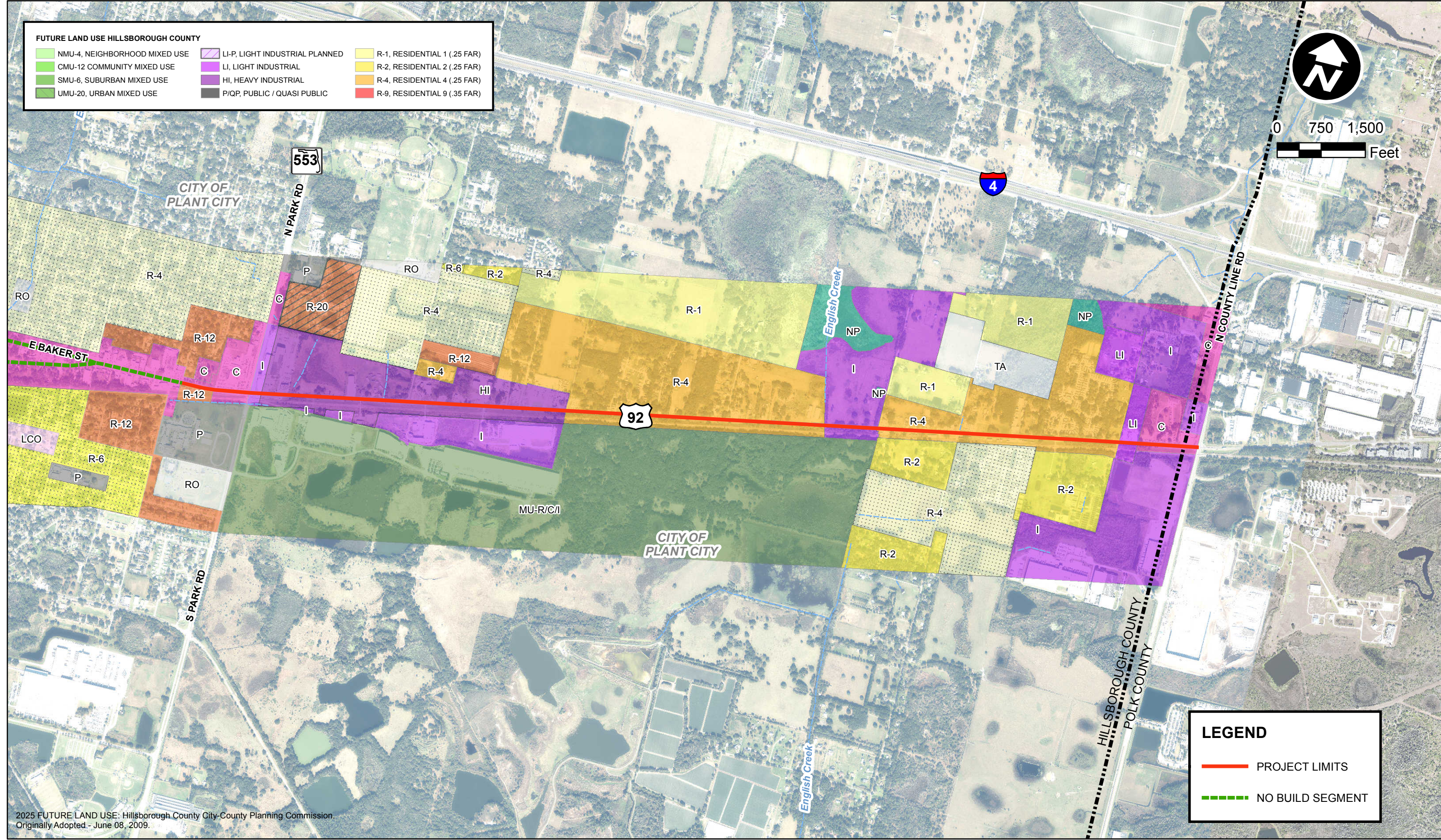
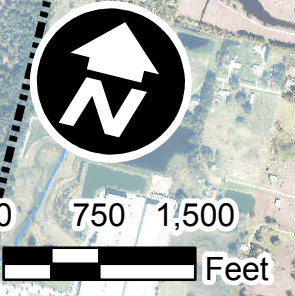


US 92 PD&E Study Re-evaluation
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FUTURE LAND USE MAP 3
(HILLSBOROUGH COUNTY 2025 AND PLANT CITY 2025)

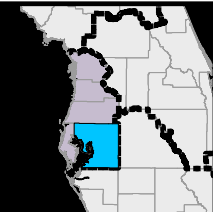
Figure
2-11

FUTURE LAND USE HILLSBOROUGH COUNTY					
	NMU-4, NEIGHBORHOOD MIXED USE		LI-P, LIGHT INDUSTRIAL PLANNED		R-1, RESIDENTIAL 1 (.25 FAR)
	CMU-12 COMMUNITY MIXED USE		LI, LIGHT INDUSTRIAL		R-2, RESIDENTIAL 2 (.25 FAR)
	SMU-6, SUBURBAN MIXED USE		HI, HEAVY INDUSTRIAL		R-4, RESIDENTIAL 4 (.25 FAR)
	UMU-20, URBAN MIXED USE		P/QP, PUBLIC / QUASI PUBLIC		R-9, RESIDENTIAL 9 (.35 FAR)



LEGEND	
	PROJECT LIMITS
	NO BUILD SEGMENT

2025 FUTURE LAND USE: Hillsborough County City-County Planning Commission. Originally Adopted - June 08, 2009.



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FUTURE LAND USE MAP 4
 (HILLSBOROUGH COUNTY 2025 AND PLANT CITY 2025)

Figure
2-12

2.5 Horizontal and Vertical Alignment

The existing horizontal and vertical alignment of US 92 was determined by reviewing the FDOT SLDs and available topographic information. Within the project limits, the US 92 horizontal alignment consists of ten tangent segments connected by six horizontal curves and a deflection, as detailed in Table 2-1 below.

**Table 2-1
Existing Horizontal Alignment of US 92**

Feature	Roadway Bearing	PC MP	PI MP	PT MP	Degree of Curve	Deflection and Direction	Curve Radius	Curve length	Super-elevation (ft./ft.)
Tangent	N 65° 40' 38" E								
Curve 1		6.664	6.704	6.745	1° 30'	11° 50' 40" LT	3820'	427.68	0.031
Tangent	N 77° 31' 18" E								
Deflection			10.23			0° 01' 00" RT			
Tangent	N 77° 30' 18" E								
Curve 2		11.18		11.31	2° 00'	13° 49' 00" RT	2865'	686.4	0.048
Tangent	N 63° 41' 18" E								
Curve 3		11.837		12.05	1° 00'	11° 29' 00" LT	5730'	1145.76	0.025
Tangent	N 75° 10' 18" E								
Deflection			13.45			0° 01' 00" RT			
Tangent	N 75° 00' 48" E								
Curve 4		14.387		14.72	1° 00'	17° 43' 00" LT	5730'	1768.8	0.025
Tangent	N 87° 16' 12" E								
Curve 5		18.099		18.29	0° 17'	2° 50' 00" LT	20222'	997.92	NC
Tangent	N 89° 53' 48" E								
Curve 6		18.808		18.93	2° 00'	12° 19' 00" RT	2865'	617.76	0.034
Tangent	N 77° 47' 12" E								
No-Action Area									
Tangent	N 78° 54' 04" E								

(1) – Stationing referenced to FDOT Straight Line Diagram (Roadway ID 14010000).

The existing grade of US 92 is generally flat with isolated areas of rolling terrain typical of the region. At the beginning of the project near the intersection of Garden Lane, there is a low point as the departure from the bridge over I-4 to the west is touching down before the natural grade takes US 92 up at a little over 2% to a crest at Pickron Lane. The terrain varies between 1.5% and 0.3% down to a low point under the I-75 overpass. The existing grade remains relatively flat prior to climbing at 1.5% to a high point west of Williams Road and then generally down grade at 0.5% to a sag point east of Mobile Villa Drive. Between Mobile Villa Drive and North Parson Avenue, there is rolling terrain with a low point at Pine Street and a high point at Kennedy Drive east of Mango Road. Grades though this section vary from 3.7% to 0.4%. Proceeding east, the existing grade is relatively flat with a gradual upgrade to a crest at Heidi Road and then down to a sag point west of Shangri La Drive. The grade is gradual up to a crest

east of Old Darby Street and then flat all the way to Turkey Creek Road. From there the existing grade trends upward increasing from 0.3% to 1.2% to a crest located at Whitehurst Road. The grade then rolls between 1.5% and 1.3% with a low point west of Edwards Street and a high point at the intersection with Thonotosassa Road. Beginning west of Park Road, the existing grade climbs at 0.5% to plateau at the Park Road intersection. Then it remains relatively flat with no grades larger than 0.5% all the way to County Line Road.

2.6 Pedestrian Accommodations

Sidewalk and boardwalk improvements have been made along US 92 from Garden Lane to Thonotosassa Road to the extent that a continuous sidewalk or boardwalk has been provided on either the north or south side of the roadway. No pedestrian facilities are provided between Thonotosassa Road and Mobley Street and between Park Road and County Line Road. Table 2-2 provides the location of the pedestrian facilities relative to the north or south side of US 92 and the type of pedestrian facility that exists between Garden Lane and Thonotosassa Road.

2.7 Bicycle Facilities

Currently, no designated bicycle lanes are provided along US 92 from Garden Lane to Thonotosassa Road and from Park Road and County Line Road. The paved shoulders can accommodate bicyclists. A segment of US 92 from Thonotosassa Road to Mobley Street has curb and gutter with no bicycle lanes and a segment with two-foot paved shoulders.

2.8 Lighting

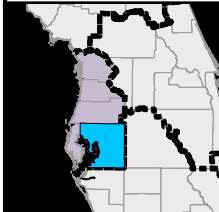
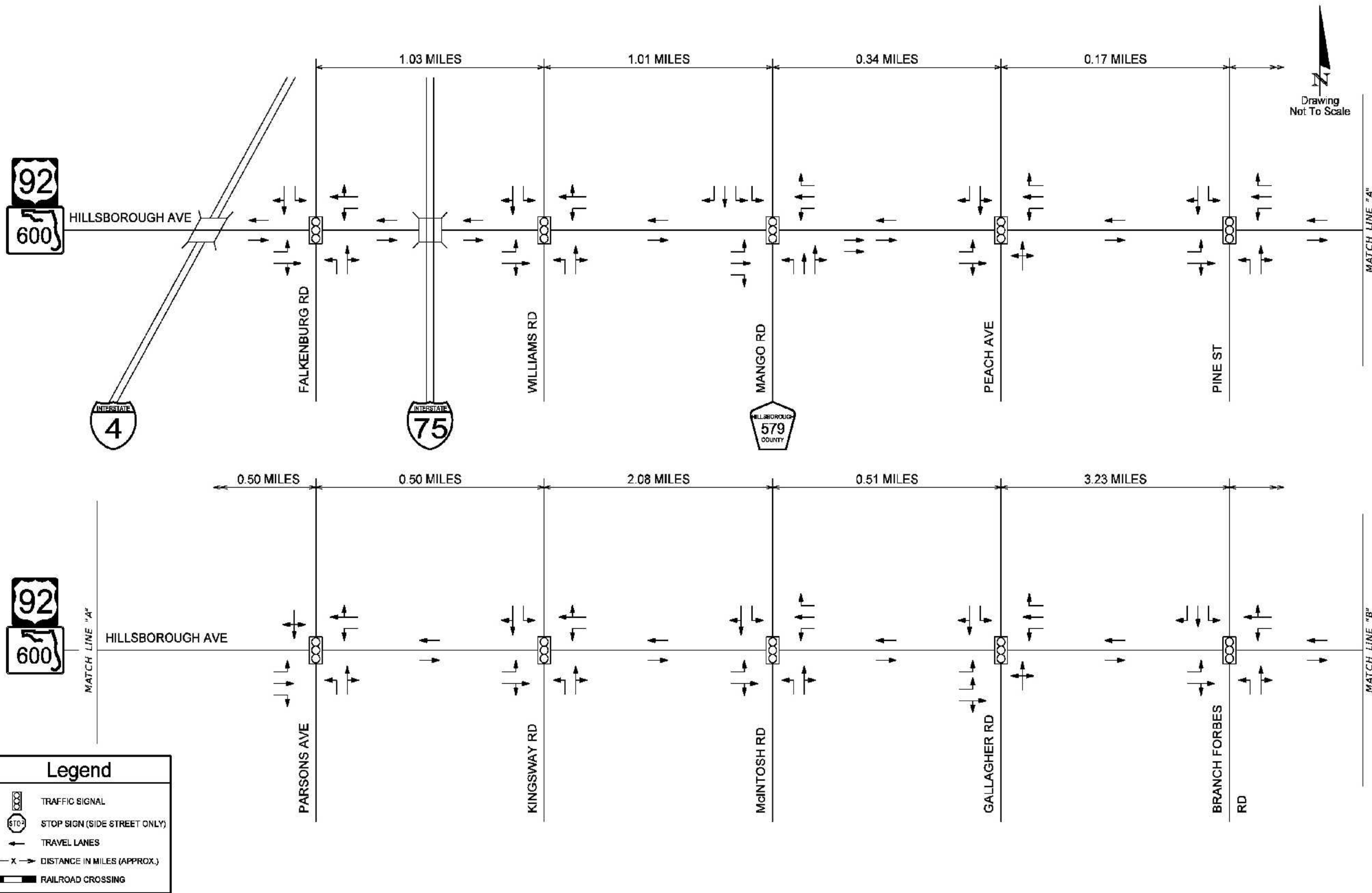
There is no continuous roadway lighting along US 92 from Garden Lane to Thonotosassa Road and from Park Road to County Line Road. From Thonotosassa Road to Mobley Street, limited roadway lighting is provided and limited lighting is provided at the Park Road intersection and at the County Line Road intersection.

2.9 Intersection Layout

There are 15 existing signalized intersections and one existing flashing beacon intersection along US 92 within the project Build limits. These are located at Falkenburg Road, Williams Road, Mango Road, Peach Avenue, Pine Street, North Parsons Avenue, Kingsway Road, McIntosh Road, Gallagher Road, Branch Forbes Road, Turkey Creek Road, Whitehurst Road/Walter Drive (flashing beacon), Thonotosassa Road/Lemon Street, Maryland Avenue (west of Park Road), Park Road, and County Line Road. Figures 2-13 and 2-14 show the existing lane configurations for the signalized intersections on US 92.

**Table 2-2
Existing Pedestrian Facilities**

Pedestrian Facilities Limits	Location Relative to Roadway	Type of Pedestrian Facilities
Garden Lane to Mango Road	South	Primarily concrete sidewalk with short segments of wood boardwalk interspersed
Mango Road to North Parson Avenue	North	Primarily concrete sidewalk with short segments of boardwalk interspersed
North Parson Avenue to Kings Highway	North and South	Concrete sidewalk
Kings Highway to 800 feet East of Crow Wing Drive	South	Concrete sidewalk
1,400 feet West of Crow Wing Drive to 320 feet East of Crow Wing Drive	North	Concrete sidewalk
320 feet East of Crow Wing Drive to McIntosh Road	South	Primarily wood boardwalk with short segments of concrete sidewalk interspersed
McIntosh Road to Turkey Creek Road	North	Primarily concrete with short segments of wood boardwalk interspersed
Turkey Creek Road to Thonotosassa Road	South	Primarily concrete sidewalk with short segments of wood boardwalk interspersed

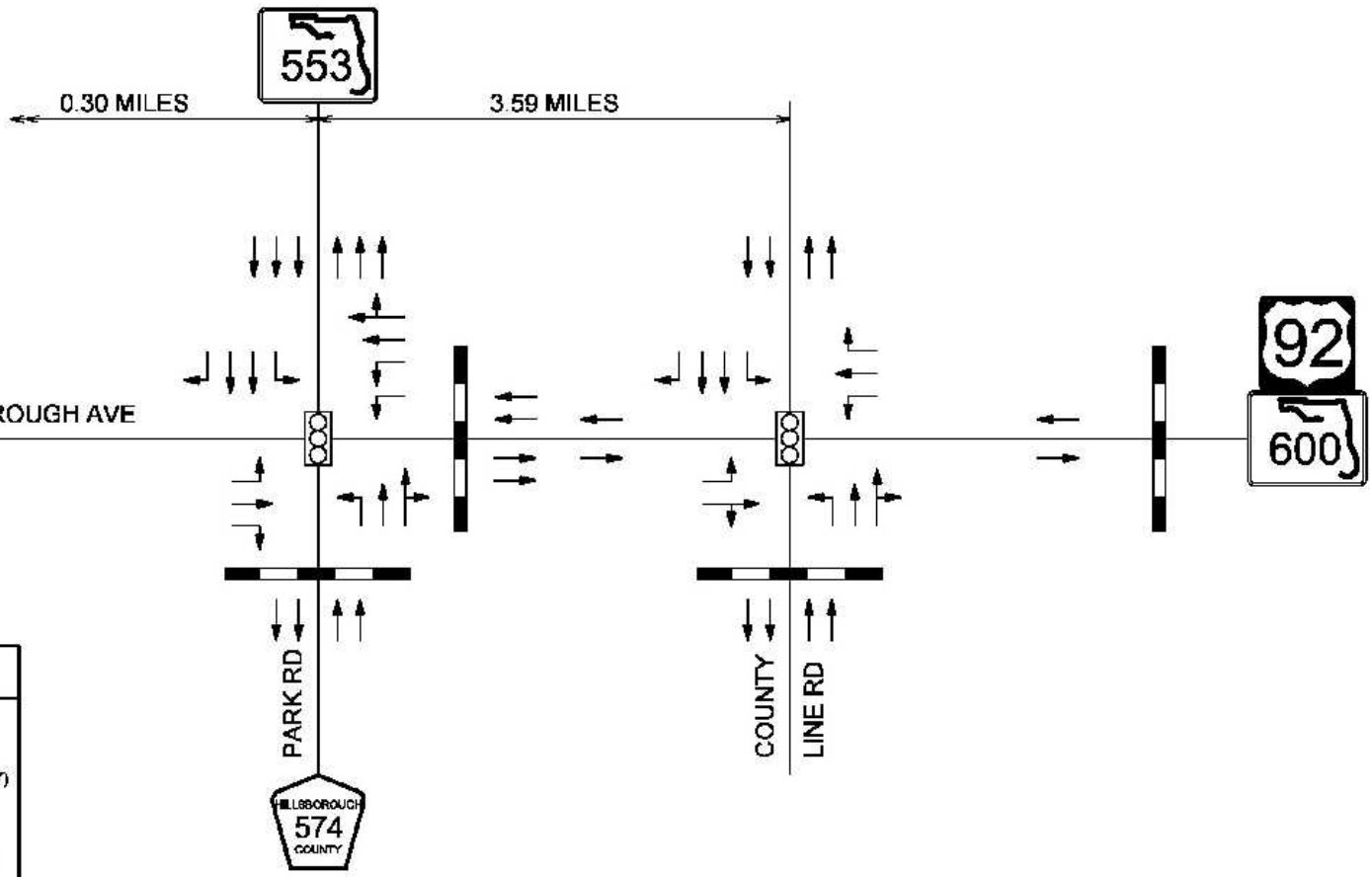
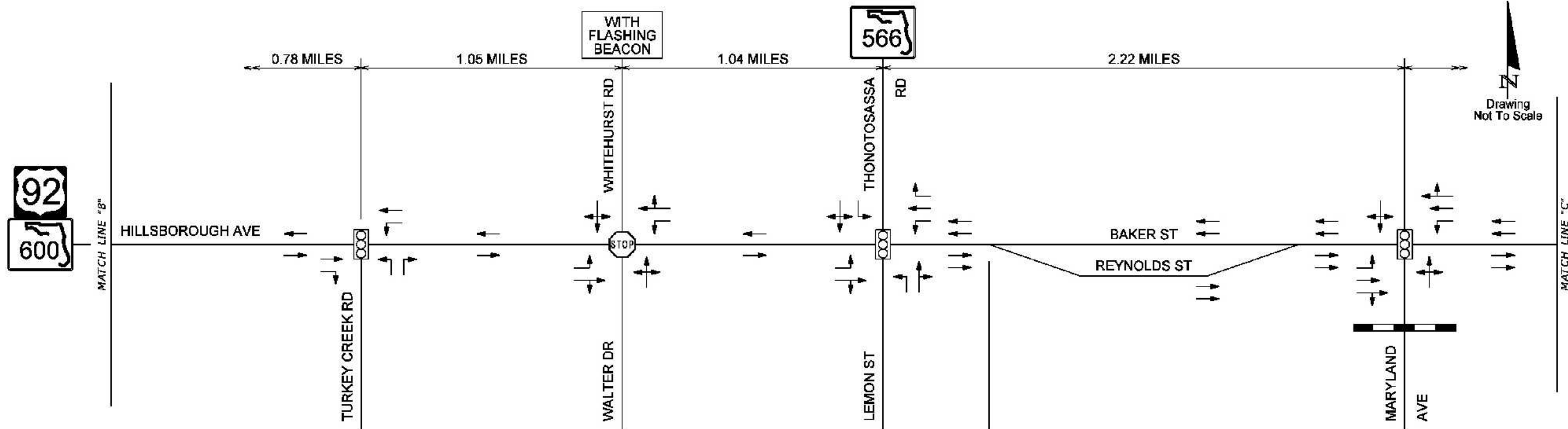


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District 7

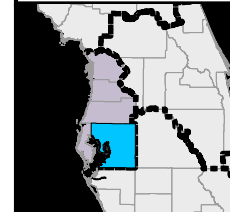
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 Hillsborough County, Florida
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EXISTING BUILD LANE GEOMETRY
US 92 - EAST OF I-4 TO BRANCH FORBES ROAD

Figure
2-13



Legend	
	TRAFFIC SIGNAL
	STOP SIGN (SIDE STREET ONLY)
	TRAVEL LANES
	DISTANCE IN MILES (APPROX.)
	RAILROAD CROSSING



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District 7

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EXISTING BUILD LANE GEOMETRY
US 92 - TURKEY CREEK ROAD TO COUNTY LINE ROAD

Figure
2-14

2.10 Traffic Signals

The 15 existing signalized intersections and one existing flashing beacon intersection along US 92 within the project Build limits are identified in Section 2.9, Intersection Layout, and the locations of each intersection are shown in Figures 2-13 and 2-14. Details of the existing signal timings for the signalized intersections are documented in the Final *US 92 Design Traffic Technical Memorandum* (DTTM) (American Consulting Engineers of Florida, LLC, May 2017).

2.11 Design and Posted Speed

The existing posted speeds vary from 35 mph to 55 mph. Approaching the project from the west, US 92 is posted at 50 mph from Garden Lane to east of Parsons Avenue. The posted speed limit then increases to 55 mph between Parsons Avenue and Castlewood Road. Between Castlewood Road and Gallagher Road, the posted speed drops to 45 mph before increasing to 55 mph east of Gallagher Road. There is another drop to 45 mph between Tanner Road and Pemberton Creek with the 55 mph speed limit continuing west of the creek crossing. Just before Sugar Creek Drive, the posted speed drops to 45 mph to east of Mobley Street. The posted speed is 45 mph west of Park Road and then it increases again to 55 mph east of Park Road. The posted speed limit remains 55 mph through the remainder of the project to County Line Road and beyond the project limits to the east.

Several meetings were held with FDOT staff to determine the appropriate design speed to be used for development of the preliminary concept plans for this project. The first meeting was held on May 4, 2015, and alignment, typical section alternatives, and design speeds were discussed. A second meeting was held on January 19, 2016. Speed studies were also conducted at several locations along the corridor. The results of these meetings were that a 45 mph design speed would be utilized from Garden Lane to east of Crow Wing Drive, a 50 mph design speed would be utilized from east of Crow Wing Drive to Edwards Street, and a 45 mph design speed would be utilized from Edwards Street to Mobley Street. Through the Park Road intersection, a 45 mph design speed would be utilized. From east of Park Road to County Line Road, a 50 mph design speed would be utilized.

2.12 Railroad Crossings

The project includes four CSX railroad crossings located along US 92 within the project limits. This includes three grade crossings on US 92 and one grade crossing on Park Road. In addition to these railroad crossings, there are seven side street and private road crossings adjacent to the south side of US 92 that will not be impacted by the proposed improvements evaluated as a part of this project. CSX has also identified a railroad crossing at East Mahoney Street (624410Y), but this roadway is currently closed and does not operate as a grade crossing. Table 2.3 summarizes the characteristics and locations of the existing four railroad crossings identified on the project. Table 2-3 summarizes the characteristics of the existing railroad crossings on the project.

**Table 2-3
Summary of Railroad Crossings**

Railroad Crossing	Crossing Location			
	Baker Street/ US 92	Reynolds St/ US 92	CR 574A/ Park Road	US 92 east of Park Road
National Grade Crossing No.	624409E	624411F	624313P	624312H
US 92 Milepost	20.48	20.48	21.52	21.58
PD&E Study Segment ID	Segment 10 (No Build)	Segment 10 (No Build)	Segment 11	Segment 11
Railroad Milepost	822.91	823.02	860.09	860.09
Type of Crossing	Public	Public	Public	Public
Safety Index Rating	1908	800	71	1504
Crossing Surface	Concrete	Concrete	Concrete & Rubber	Concrete
Traffic Control Equipment	Pavement Markings, 2 Bells, 2 Flashing Pairs, 2 Quad Gates	Pavement Markings, 2 Bells, 2 Flashing Pairs, 2 Quad Gates	Pavement Markings, 2 Bells, 2 Over Traffic Cantilevered Flashing Lights, 26 Signal Lenses, 2 Quad Gates	Pavement Markings, 1 Bell, 2 Over Traffic Cantilevered Flashing Lights, 16 Signal Lenses, 2 Quad Gates
Maintained by	State	State	County	State
Average No. of Trains (per day)	5	5	7	11
Average Speed (mph)	20-25 mph	20-25 mph	74-79 mph	1-10 mph

2.13 Drainage System Inventory

The project is under the jurisdiction of Southwest Florida Water Management District (SWFWMD) and traverses three major confining watersheds: Tampa Bay, Hillsborough River, and Alafia River. These watersheds are further divided into 14 sub-basins, each with its own Water Body Identification (WBID) number:

- WBID 1518: East Canal
- WBID 1531: Wiggins Prairie Drain
- WBID 1536B: Sixmile Creek
- WBID 1536C: Tampa Bypass Canal Tributary
- WBID 1542: Pemberton Creek
- WBID 1542A: Mill Creek
- WBID 1547: Seffner Canal

-
- WBID 1552: English Creek
 - WBID 1560: Intermittent Stream
 - WBID 1561: Spartman Branch
 - WBID 1564: Hamilton Branch
 - WBID 1565: Moore Lake Drain
 - WBID 1568: Howell Branch
 - WBID 1576: Mango Drain

Both Sixmile Creek (WBID 1536B) and Mango Drain (WBID 1576) are verified as impaired for nutrients on the current Florida Department of Environmental Protection (FDEP) 303(d) list.

The topography of the project area is steep and elevations range from a high of 150 feet to a low of 10 feet NAVD 88. There are 21 existing cross drains and four existing bridge culverts within the project limits allowing for conveyance of offsite and onsite runoff to the Alafia and Hillsborough rivers. The size and geometry of all cross drains and bridges have been verified from the FDOT SLDs and one-foot LiDAR contours. A summary of the existing cross drains and bridges is provided in Table 2-4.

**Table 2-4
Summary of Existing Cross Drains and Bridges**

Structure Number	FDOT Milepost *	Description
CD-01	7.791	Single 6'X4' CBC
Bridge-01 (#100024)	8.531	Length 42'
CD-02	9.629	Single 24" RCP
CD-03	10.470	Single 24" RCP
CD-04	11.034	Single 30" RCP
CD-05	11.344	Single 2'X2' CBC
Bridge-02 (#100025)	12.055	Length 47'
CD-06	12.628	Single 48" RCP
CD-07	13.558	Single 6'X4' CBC
CD-08	14.093	Single 24" RCP
CD-09	14.169	Single 3'X3' CBC
Bridge-03 (#100097)	15.012	Length 26'
CD-10	15.387	Single 2'X2' CBC
CD-11	15.956	Single 24" RCP
CD-12	16.363	Single 36" RCP
Bridge-04 (#100098)	16.623	Length 26'
CD-13	17.016	Single 4'X2' CBC
CD-14	17.719	Single 36" RCP
CD-15	18.579	Single 6'X4' CBC
CD-16	21.663	Single 5'X2' CBC
CD-17	21.963	Single 5'X2' CBC
CD-18	22.505	Single 5'X3' CBC
CD-19	22.931	Single 5'X3' CBC
CD-20	23.384	Double 6'X4' CBC
CD-21	24.214	Single 4'X2' CBC

2.14 Location Hydraulics

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) for the study area. The relevant and most current FIRM panel numbers are 12057C0240H, 12057C0245H, 12057C0385H, 12057C0263H, 12057C0264H, 12057C0268H, 12057C0269H, 12057C0288H, and 12057C0290H dated August 28, 2008, and 12057C0380J dated September 27, 2013, for Hillsborough County, Florida.

The majority of the project is designated Zone 'X' which means those areas have a 0.2% probability of flooding every year (500-year floodplain). Some parts (mostly stream and waterbody crossings) are in the Zone 'AE' which have a 1% probability of flooding every year (100-year floodplain) and where predicted flood water elevations have been established.

The FDOT, District Seven, Maintenance office has indicated that there have been flooding issues during every summer at East 702 Reynolds/Baker US 92, East 11730 US 92, East 11309 US 92, East 10604 Black Dairy Road, and East 9715 US 92. A Drainage Complaint Investigation Report was also conducted by the Department in December 2015. Hillsborough County reported flooding complaints from several property owners along the south side of US 92 between Darby Lake Street and Baker Creek.

2.15 Traffic Data

The Final DTTM prepared for this project includes information on the existing roadway conditions, future roadway conditions, and proposed improvements needed to adequately serve future design year 2040 traffic volumes on US 92.

2.15.1 Design Characteristics

The design hour traffic factors recommended for the US 92 project area include a standard K factor of 9.0% per the *Project Traffic Forecasting Handbook* along US 92 and all the side streets. The recommended D-factor along the US 92 study corridor is 59.60% based on the 72-hour classification counts conducted. Recommended daily truck percentages (T_{24}) along the corridor based on the 72-hour classification counts are 7% west of Falkenburg Road, 9.0% west of McIntosh Road, and 14.9% east of County Line Road. For the existing and future analysis along the side streets, Design Hour Truck (DHT) will be used based on the AM and PM peak hour turning movement counts. DHT for US 92 is assumed to be half of T_{24} rounded up to the nearest percent. Information on DHT for side streets is provided in the DTTM. A Peak Hour Factor of 0.95 has been used in the existing and future analysis for the study.

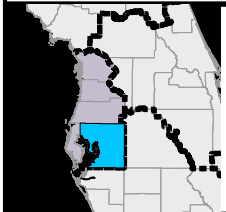
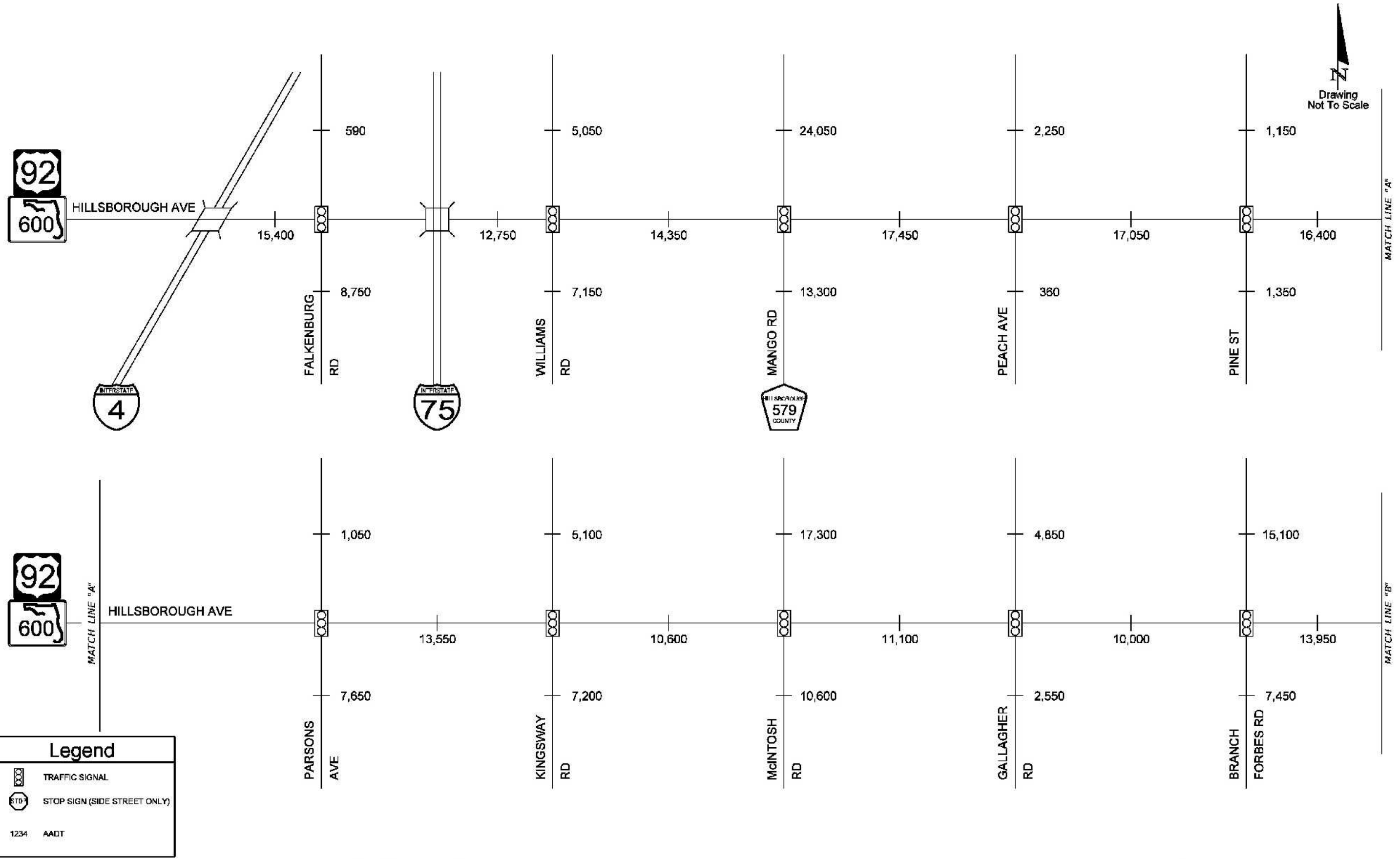
Table 2-5 shows the recommended K, D, and T Factors along US 92.

Table 2-5
Recommended K, D, T Factors Along US 92

US 92	Standard K	D	Daily Truck (T24)	Design Hour Truck (DHT)
West of Falkenburg Road	9.00%	59.60%	7.0%	4.0%
West of McIntosh Road			9.0%	5.0%
East of County Line Road			14.9%	7.0%

2.15.2 Existing Traffic Volumes

Existing year (2015) Annual Average Daily Traffic (AADT) volumes are shown in Figures 2-15 and 2-16. The existing year (2015) AM and PM Peak Hour Volumes are shown in Figures 2-17 and 2-18.

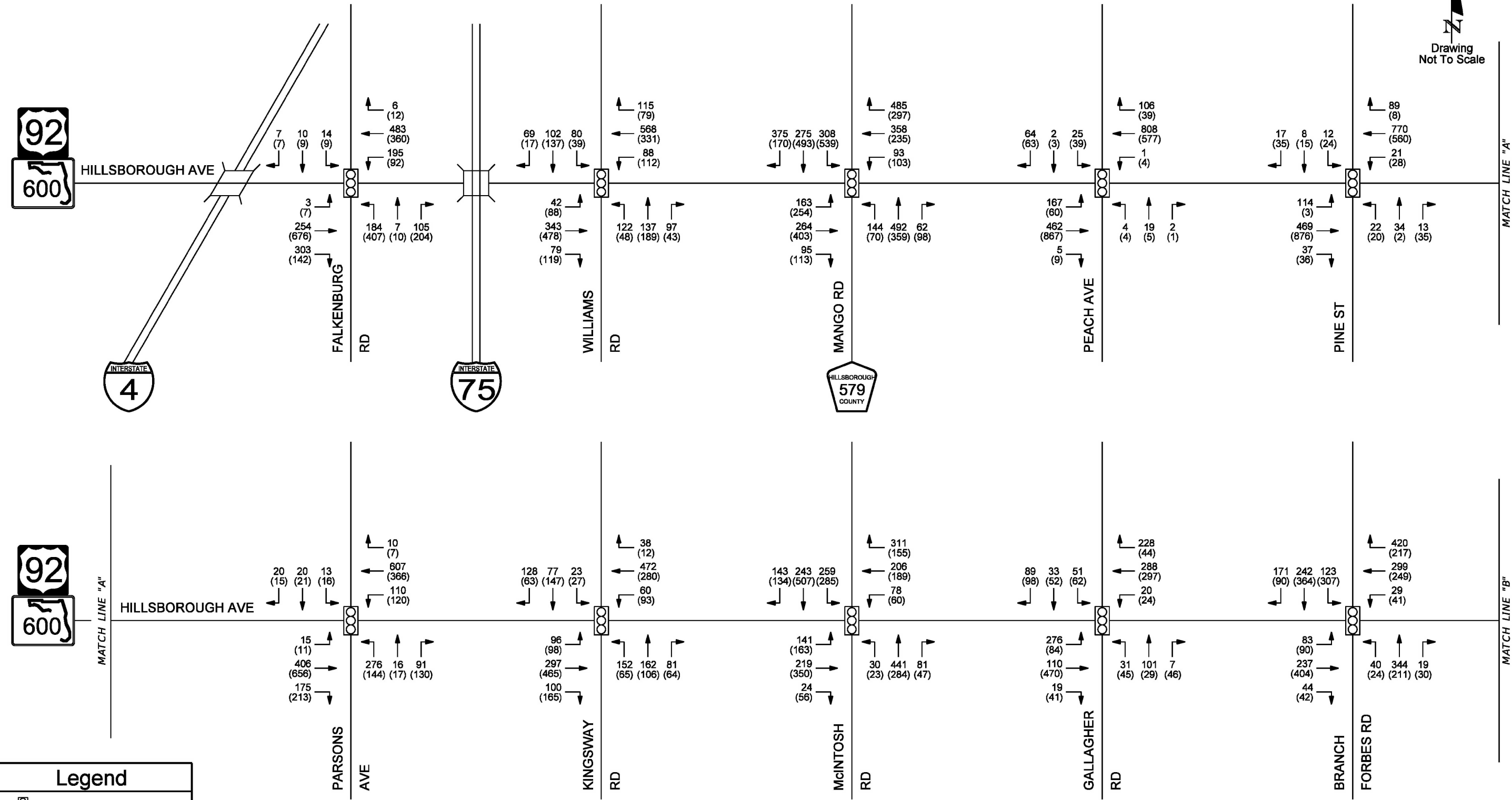
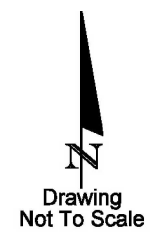


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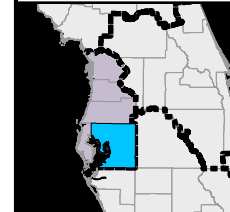
EXISTING YEAR (2015) AADT
US 92 - EAST OF I-4 TO BRANCH FORBES ROAD

Figure
2-15



Legend

- TRAFFIC SIGNAL
- STOP SIGN (SIDE STREET ONLY)
- 1234 AM PEAK HOUR VOLUME
1234 PM PEAK HOUR VOLUME



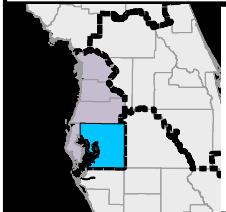
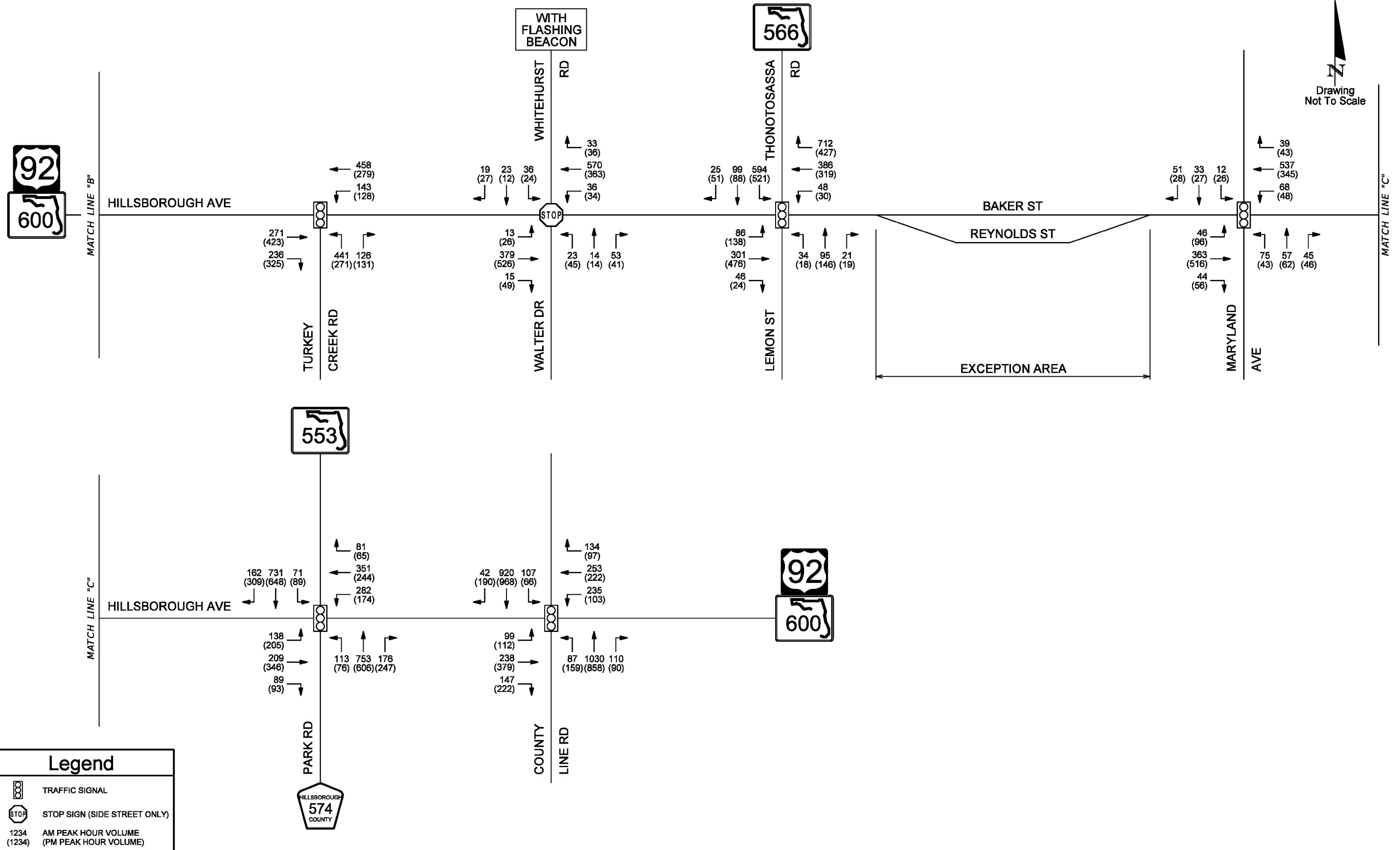
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**EXISTING YEAR AM and PM
PEAK HOUR TRAFFIC VOLUMES (A)**

**Figure
2-17**



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**EXISTING YEAR (2015) AM and PM
PEAK HOUR TRAFFIC VOLUMES (B)**

Figure
2-18

2.15.3 Existing Year (2015) Intersection Level of Service Analysis

Existing year (2015) lane geometry and existing AM and PM peak hour traffic volumes, along with signal timing plans obtained from Hillsborough County; Plant City; and FDOT, District Seven, with phasing verified from the field, were used for the existing analysis. The existing signal timing plans have been included in the Draft DTTM. The acceptable Level of Service (LOS) standard for the existing condition in the study corridor of US 92 in the urbanized area within the entire study limits is LOS D based on the Planning Boundaries for LOS standards for Hillsborough County and Page 123 of the 2013 FDOT Quality/LOS Handbook. SYNCHRO Version 8.0 (Build 805) (SYNCHRO) was used as the analysis tool within the study limits. Signalized intersection LOS was estimated from SYNCHRO software. The latest Highway Capacity Software (HCS) Version 6.65 was used for the un-signalized intersection. Existing year (2015) LOS and control delay results for all of the study intersections are summarized in Table 2-6. Existing LOS analysis details (HCS output worksheets from SYNCHRO) are provided in Draft DTTM.

**Table 2-6
Existing Year (2015) AM/PM Intersection Delay and LOS**

Intersection	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
US 92 at Falkenburg Road (signalized)	25.9/45.4	C/D
US 92 at Williams Road (signalized)	21.2/23.0	C/C
US 92 at Mango Road (signalized)	43.4/49.6	D/D
US 92 at Peach Avenue (signalized)	5.7/20.7	A/C
US 92 at Pine Street (signalized)	18.9/12.8	B/B
US 92 at Parsons Avenue (signalized)	30.6/18.5	C/B
US 92 at Kingsway Road (signalized)	26.9/24.4	C/C
US 92 at McIntosh Road (signalized)	49.6/98.7	D/F
US 92 at Gallagher Road (signalized)	37.4/34.8	D/C
US 92 at Branch Forbes Road (signalized)	28.3/26.3	C/C
US 92 at Turkey Creek Road (signalized)	51.4/13.6	D/B
US 92 at Whitehurst Road/Walter Drive ⁽¹⁾ (un-signalized)	37.7/33.2	E/D
US 92 at SR 566/Thonotosassa Road/Lemon Street (signalized)	34.4/43.2	C/D
US 92 at Maryland Avenue (signalized)	15.9/15.3	B/B
US 92 at SR 553/Park Road (signalized)	53.7/48.1	D/D
US 92 at County Line Road (signalized)	61.1/76.5	E/E

(1) *Un-signalized Intersection – Delay/LOS along worst minor approach.*

Based on the existing analysis, all of the study intersections operate at an acceptable LOS during both peak periods with the exception of the intersections at McIntosh Road and County Line Road which do not operate at an acceptable LOS during one or both peak periods. Also, the intersection at Whitehurst Road/Walter Drive does not operate at an acceptable LOS during the AM peak period.

2.16 Existing Year (2015) Roadway Segment Analysis

SYNCHRO was used as the roadway segment analysis tool for US 92 between Falkenburg Road and County Line Road. The existing year (2015) roadway segment LOS analyses were conducted for US 92 using the estimated existing year (2015) AM and PM peak hour volumes. For the roadway segment analysis, the free flow speed was assumed to be the posted speed limit which varies between 45 mph and 55 mph with the exception of the section of US 92 between Baker Street and Reynolds Street through downtown Plant City where the posted speed limits vary between 30 mph to 35 mph. The arterial class for US 92 was established to be Class I by SYNCHRO software. The existing roadway segment LOS results for the eastbound and westbound directions of US 92 are summarized in Tables 2-7 and 2-8. The roadway segment analysis SYNCHRO outputs are provided in the Final DTTM.

**Table 2-7
Existing Year 2015 AM/PM EB Roadway Segment Speed and LOS**

Roadway	Segment	Existing Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 EB	Falkenburg Road to Williams Road	1.03	42.3/43.0	A/A
	Williams Road to Mango Road	1.01	35.1/30.3	B/C
	Mango Road to Peach Avenue	0.34	32.6/31.7	C/C
	Peach Avenue to Pine Street	0.17	26.7/20.6	D/E
	Pine Street to Parsons Avenue	0.50	31.2/36.5	C/B
	Parsons Avenue to Kingsway Road	0.50	32.2/34.1	C/B
	Kingsway Road to McIntosh Road	2.08	42.4/45.9	A/A
	McIntosh Road to Gallagher Road	0.51	32.7/23.8	C/D
	Gallagher Road to Branch Forbes Road	3.23	51.6/50.8	A/A
	Branch Forbes Road to Turkey Creek Road	0.78	47.2/45.9	A/A
	Turkey Creek Road to SR 566/Thonotosassa Road/Lemon Street	2.09	37.4/35.1	B/B
	East of SR 566/Thonotosassa Road/Lemon Street	-	-	-
	West of Maryland Avenue	-	34.5/34.4	B/B
	Maryland Avenue to SR 553/Park Road	0.30	15.2/15.1	F/F
	SR 553/Park Road to County Line Road	3.59	34.3/37.7	B/B

**Table 2-8
Existing Year 2015 AM/PM WB Roadway Segment Speed and LOS**

Roadway	Segment	Existing Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 WB	County Line Road to SR 553/Park Road	3.59	47.5/47.5	A/A
	SR 553/Park Road to Maryland Avenue	0.30	25.7/26.2	D/D
	West of Maryland Avenue	-	-	-
	East of SR 566/Thonotosassa Road/Lemon Street	-	28.6/29.3	C/C
	SR 566/Thonotosassa Road/Lemon Street to Turkey Creek Road	2.09	46.2/46.9	A/A
	Turkey Creek Road to Branch Forbes Road	0.78	31.9/41.8	C/B
	Branch Forbes Road to Gallagher Road	3.23	47.7/47.8	A/A
	Gallagher Road to McIntosh Road	0.51	23.3/30.8	D/C
	McIntosh Road to Kingsway Road	2.08	47.4/51.0	A/A
	Kingsway Road to Parsons Avenue	0.50	35.5/38.8	B/B
	Parsons Avenue to Pine Street	0.50	24.7/42.4	D/A
	Pine Street to Peach Avenue	0.17	27.1/18.3	C/E
	Peach Avenue to Mango Road	0.34	22.5/15.8	D/F
	Mango Road to Williams Road	1.01	38.8/40.1	B/B
	Williams Road to Falkenburg Road	1.03	40.0/41.1	B/B

2.17 Crash Data and Safety Analysis

Crash data along US 92 within the project limits was obtained from the FDOT for the most recent five-year (2009 through 2013) period. There was a total of 1,209 crashes reported within the project limits during the five-year period, which involved 1,017 injuries and 14 fatalities. Table 2-9 summarizes the five-year crash history along the study corridor. As a part of the analysis, the number of crashes that occurred at night was also summarized. The crash rate was calculated and compared to statewide crash rates for similar roadway segments. Statewide crash rates obtained from FDOT are included in the Final DTTM along with the crash data information.

**Table 2-9
Summary of Crash Analysis Along US 92**

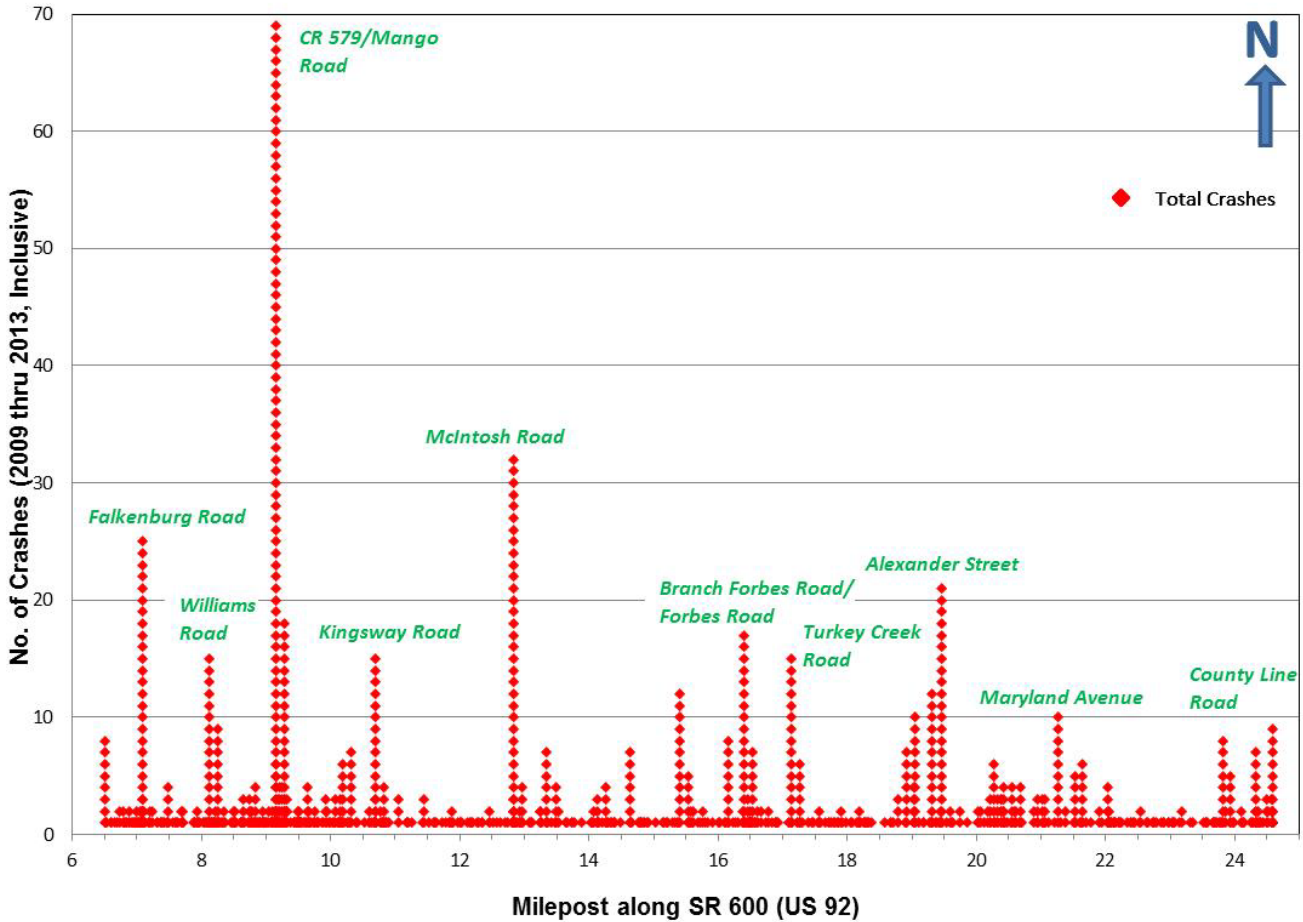
US 92 from East of I-4 (MP 6.498) to County Line Road (MP 24.593) in Hillsborough County	Year					Five Year Total
	2009	2010	2011	2012	2013	
Fatal Crashes	5	2	3	3	1	14
Injury Crashes	116	101	116	114	158	605
Property Damage Only Crashes	110	91	96	113	180	590
Total Crashes	231	194	215	230	339	1209
Night-time crashes	83	69	74	77	110	413
<i>Average Crash Rate with Average AADT of 10,200</i>						3.59
<i>Statewide 5-Year Average Crash Rate for Urban Segments*</i>						2.629

**Obtained from FDOT – District Seven*

The previous table shows that the average crash rate over the entire length of the US 92 study corridor is 3.59, which is higher than the statewide five-year average crash rate of 2.629 for two to three lane, two-way undivided suburban segments. Approximately 34% of the total crashes along US 92 are night-time crashes. FDOT District is working with the Central Office on the directive for lighting crosswalks at signalized intersections in certain high crash corridors within the D7 limits. Per the District 7 Traffic Design office, lighting in this project corridor will be provided at the crosswalks, marked or unmarked and the adjacent curb cut ramps on each corner at all signalized intersections, by construction project FP ID 439829-2-52-01.

The distribution of crashes by mile post is shown in Figure 2-19. The plot indicates that the majority of the crashes occurred at Falkenburg Road, Williams Road, Mango Road, Kingsway Road, McIntosh Road, Branch Forbes Road/Forbes Road, Turkey Creek Road, Alexander Street, Maryland Avenue, and County Line Road.

Figure 2-19
Distribution of Crashes (2009-2013) by Milepost
US 92 from East of I-4 to East of County Line Road

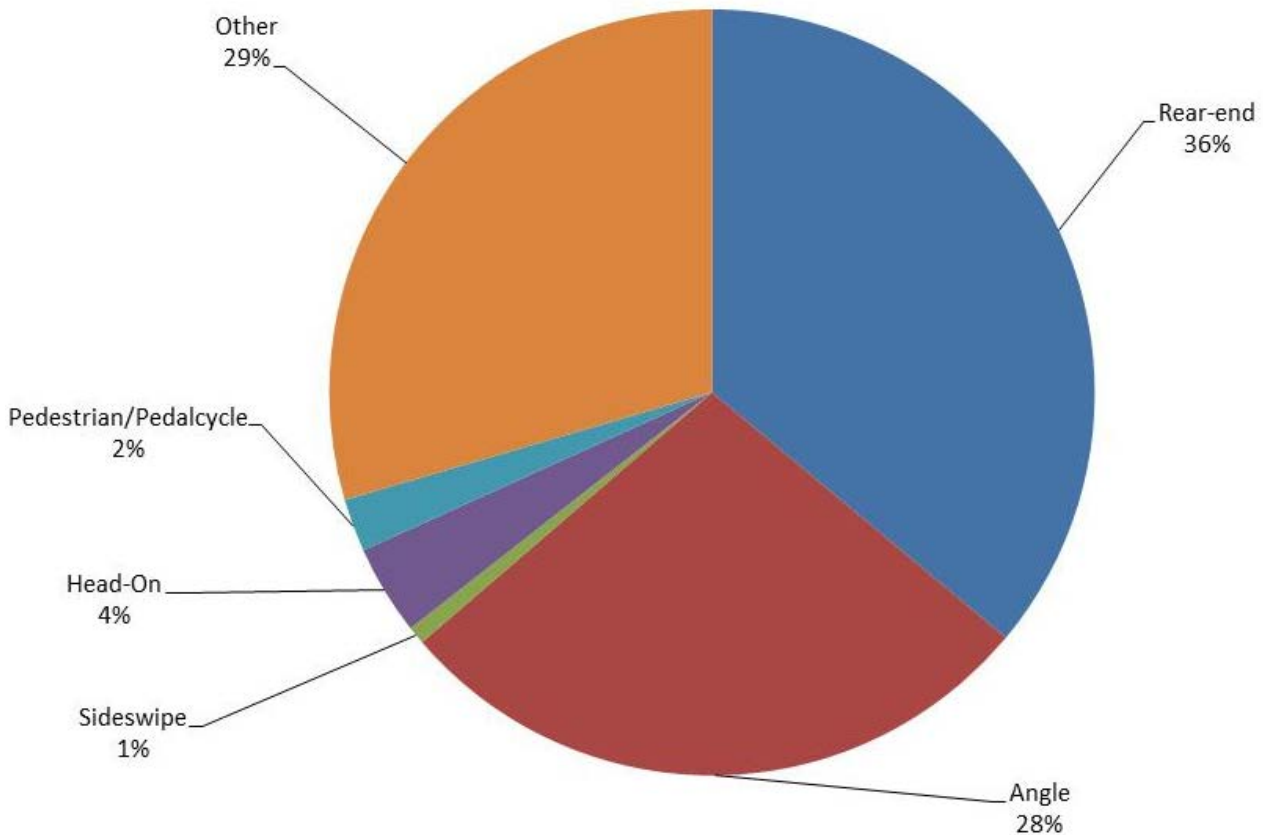


The breakdown by crash type of total crashes within the study limits for the last available five years along US 92 is shown in Table 2-10 and Figure 2-20. Overall rear-end crashes accounted for 36 percent of the total crashes, angle crashes accounted for 28 percent, head-on crashes accounted for four percent, crashes involving pedestrians and bicycles accounted for two percent, sideswipe crashes accounted for one percent, and the remaining 29 percent of the crashes were other crash types.

Table 2-10
Summary of Crash Analysis Along US 92 by Crash Type

Crash Type	Year					Total	Percentage	Average Per Year
	2009	2010	2011	2012	2013			
Rear-end	78	82	80	80	116	436	36.1	87.2
Angle	65	46	57	53	113	334	27.6	66.8
Sideswipe	4	6	0	0	0	10	0.8	2.0
Head-On	11	7	8	10	10	46	3.8	9.2
Pedestrian/Bicycle	7	0	9	6	6	28	2.3	5.6
Other	66	53	61	81	94	355	29.4	71.0
Total	231	194	215	230	339	1209	100.0	

Figure 2-20
Crash Types Along US 92
From East of I-4 to East of County Line Road



There were 28 crashes involving a pedestrian or a bicycle, the impact type for the majority of these crashes that occurred were listed as unknown from the report provided by FDOT. Pedestrian and bicycle safety will be enhanced by providing sidewalks and bike lanes along the entire Build project corridor. Pedestrian crosswalks, pedestrian ramps, and pedestrian signals will be provided for all approaches per FDOT standards as a part of the design for the widening project. Also, crosswalks will be provided for all approaches at all un-signalized intersections per FDOT standards for the widening project. These are intended to help reduce pedestrian/bicycle crashes as well as facilitate their mobility along the study corridor.

2.18 Utilities

Eighteen Utility Agency/Owners (UAOs) have been identified within the project area through the Sunshine 811 Design Ticket and utility coordination efforts. Table 2-11 identifies the UAOs contacted and a description of their facilities located on the project. Please see the separately prepared project Utility Assessment Package for additional information on potential project implementation impacts to utilities.

**Table 2-11
Existing Utilities in the Study Area**

Utility Company	Facility	Description
AT&T Corporation	Communications	Two 2-inch PVC conduit along the west side of Mango Road. One 6-inch Steel casing crossing US 92 at Mango Road.
Bright House Networks	Coax Cable & Fiber	No Response
Florida Public Utilities	Gas	No Response
City of Lakeland-Electric	Electric	No facilities located within Hillsborough County. Facilities are east of County Line Road.
City of Lakeland-Water/Wastewater	Water/Sewer	No facilities located within Hillsborough County. Facilities are east of County Line Road.
City of Plant City	Water/Sewer	The City maintains water mains ranging in size from 2-inch to 12-inch, 8-inch to 10-inch sanitary sewer mains, and 12-inch to 20-inch reclaimed water mains within the project limits.
Florida Gas Transmission	Transmission Gas	6-inch gas main crossing US 92 along east side of Falkenburg Road 26-inch gas main crossing US 92 along west side of Tanner Road 18-inch gas main crossing US 92 just west of Moores Lake Road 30-inch & 36-inch gas main crossing US 92 just east of Whitelaw Road 4-inch gas main crossing US 92 at N Wilder Road
FPL FiberNet	Communications	Maintains underground Fiber along US 92 from Edmond Ct to Branch Forbes Road and from Fletcher Lane to Whitehurst Road.
Hillsborough County Utilities	Water/Sewer	Maintains a water mains ranging in size from 6-inch to 12-inch along both side of US 92 from I-75 to Darby Lake Street. The County also maintains a 4-inch force main primarily along the north side of US 92 from Black Dairy Road to N Kingsway Rd.
Kinder Morgan/CFP	Transmission Gas	6-inch and 10-inch high pressure jet fuel line along the south side of US 92 in CSX ROW from Park Road to County Line Rd.
Level 3 Communications	Communications	Maintains a buried fiber crossing at US 92 and I-4 and a buried fiber along US 92 from SR 39 to County Line Road.
MCI	Communications	No Facilities
Tampa Electric Cooperative	Electric	Overhead distribution lines located along both sides of US 92 for the limits of the project. 69 kV transmission line crossing US 92 at Mango Road, which continues along the north side of US 92 to Peach Avenue. 69 kV transmission line along the north side of US 92 from Walter Dr. to N Woodrow Wilson St.
Tampa Water/Sewer Department	Water/Sewer	No Facilities
TECO Peoples Gas	Gas	Maintains a 6-inch gas main crossing of US 92 at Pine Street.
TW Telecom	Coax Cable & Fiber	No Response
Frontier Communications	Communications	Maintains buried facilities along both sides of US 92 for the limits of the project. Facilities include smaller distribution systems and larger duct systems intermittently along the 19-mile corridor.
XO Communications	Communications	No Facilities

2.19 Soils and Geotechnical Data

A *Final Geotechnical Technical Memorandum* (Tierra, Inc., April 2017) was prepared for the US 92 PD&E Study Re-evaluation and is contained in the project files. In addition, a *Geotechnical Services Report* (Professional Services Industries, Inc., November 1993) was prepared for the original PD&E Study and is contained in the project files. Based upon the USDA-NRCS Soil Survey for Hillsborough County, sandy soils to depths of 80 inches below the natural ground surface are reported along the majority of the project corridor. In general, these sandy soils are suitable for supporting proposed roadway embankments after proper subgrade preparation and removal of unsuitable materials.

Areas along the project corridor where clay, muck, and/or groundwater conditions may impact the project are detailed below.

SHALLOW GROUNDWATER

The Seasonal High Groundwater Table (SHGWT) for the soil units is reported to range from about two feet above the predevelopment natural grade to depths greater than six feet below the predevelopment natural grade within the project limits. According to auger borings performed for the original PD&E Study, organic soils exist near the surface along the project between Turkey Creek Road and Mobley Street and between Gordon Street and Park Road. Muck was encountered to a depth of five feet at boring locations along these segments. In addition, auger borings between Falkenburg Road and Taylor Creek Road and between McIntosh Road and Turkey Creek Road revealed that clayey sands exist near the surface.

Roadway base to groundwater clearance will need to be evaluated to ensure that minimum separation between the base and the SHGWT is maintained or in order to determine if additional measures are required (e.g., black base, underdrains, etc.). In areas where the existing SHGWT is above grade, the SHGWT will have to be established during the design phase by the project biologist utilizing biological indicators.

NEAR SURFACE CLAYEY SOILS

Near-surface, plastic/clayey soils (A-2-6/A-6/A-7) were noted within approximately three feet of the natural ground surface along the project alignment. The following soil mapping units noted plastic/clayey soils (A-2-6/A-6/A-7) within a depth of approximately 36 inches of natural grade:

- Chobee Fine Sand (Unit 10)
- Eaton Fine Sand, Depressional (Unit 14)
- Felda Fine Sand (Unit 15)
- Kendrick Fine Sand, 2 to 5 Percent Slopes (Unit 23)

-
- Lochloosa-Micanopy Fine Sands, 0 to 5 Percent Slopes (Unit 26)
 - Haplaquents, Clayey (Unit 51)

Plastic soils have limitations related to base clearance and are also poorly drained. Separation between plastic clayey soils and the roadway pavement sections should be in accordance with FDOT Standard Indices 500 and 505. As the project progresses beyond the PD&E stage, additional geotechnical services would be performed to determine the impact these materials will have on the proposed design.

ORGANIC SOILS

Deposits of organic/muck (A-8) soils are reported within the USDA Soil Survey along the project alignment. The following soil mapping units noted organic/muck (A-8) soils within approximately one foot to three feet of the ground surface:

- Basinger, Holopaw, and Samsula Soils, Depressional (Unit 5)

Organic/muck (A-8) soil, if encountered during construction, should be removed in accordance with FDOT Standard Index 500 and replaced with backfill in accordance with Index 505. As the project progresses beyond the PD&E phase, delineation of the reported organic soils will be required to determine the impact of the organic soils on the proposed design. Additional geotechnical services would be performed to identify the vertical and horizontal limits of the encountered organic soils within the project limits.

2.20 Aesthetic Features

There are no known unique aesthetic features along the corridor.

2.21 Existing Bridges

There are four concrete bridge culverts along US 92 within the project limits (Bridge Nos. 100024, 100025, 100097, and 100098). These culverts were originally built in 1930 and later widened in 1943. The bridge culverts use three-beam guardrail on the roadway approaches that overlap and connect to a two horizontal rail system with vertical W-beam support posts within the limits of the bridge culvert. These W-beam support posts are mounted to the outside face of the culvert headwalls and wing walls. Currently, the sidewalk is located on the south side of bridge culverts 100024 and 100025 and then switches to the north side of culverts 100097 and 100098. These sidewalks use timber boardwalks as they approach the bridge culverts and convert to a concrete slab pedestrian bridge supported on concrete piles at the culverts.

These bridge culverts were last inspected in June 2013 and were assessed sufficiency ratings ranging from 90.3 to 95.4 as can be seen in Table 2-12. The health index values for three of the four bridge culverts range from 72.92 to 75.33 while Bridge Culvert 100098 was given a health index value of 49.40.

**Table 2-12
Existing Structures**

Bridge Box Culverts						
Bridge #	Begin Location (MP)	End Location (MP)	Bridge Length (ft)	Sufficiency Rating	Health Index	Inspection Recommendations
100024	8.527	8.535	42	90.3	74.37	Repair spall/exposed rebar in slab of Spans 1 and 2, clear channel vegetation, repair erosion at NE slope near wingwall
100025	12.050	12.059	47	94.7	75.33	Remove graffiti from asphalt (Span 1) and sidewalk (Span 2), repair joint sealant in valley curbs over Interior Wall 2
100097	15.009	15.014	26	95.4	72.92	Repair delamination on bottom of slab at south side of span and remove graffiti
100098	16.620	16.625	26	94.8	49.40	Repair erosion on NE bank near channel and at end of wingwall, remove tree from channel south of bridge

Section 3.0

Planning Phase/Corridor Analysis

The original US 92 PD&E Study from east of I-4 to east of County Line Road in Hillsborough County, Florida, was approved by the Federal Highway Administration (FHWA) on March 24, 1994. The study generally recommended four and six lane Build Alternatives from east of I-4 to Mobley Street and from Park Road to County Line Road. However, the No-Build Alternative was selected for the segment between Mobley Street and Park Road with the exception of improving one section of Baker Street where it was recommended for conversion to an urban section between Mobley Street and Whitehall Street. It is noted that sidewalk and drainage improvements have since been made to the section of Baker Street between Mobley Street and Whitehall Street which meet the intent of the original PD&E Study recommendation for this segment of the project. Therefore, the recommendation for this segment remains the No-Build Alternative.

Due to a change in design standards and existing conditions, the proposed project's PD&E Study has been re-evaluated. The No-Build Alternative between Mobley Street and Park Road remains as the preferred build alternative. With the exception of the re-evaluation's cultural resource assessment survey that evaluated historic resources located between Mobley Street and Park Road, the PD&E Study Re-evaluation addressed the area from east of I-4 to Mobley Street and from just west of Park Road to just east of County Line Road. Proposed intersection improvements at Park Road and at County Line Road necessitate the extension of the Build segment between Park Road and County Line Road to include a tie in to the existing roadway along US 92 to the west of Park Road and to the east of County Line Road.

3.1 Need for the Project

As identified in the original PD&E Study, the need for the project is based on capacity deficiencies, consistency with transportation plans, safety, and socioeconomic demand.

Capacity

The existing annual average daily traffic within the study limits varied between 10,000 and 21,350 vehicles per day (VPD) in year 2015. Based on the growth projected to occur within the corridor, US 92 is projected to have future traffic volumes ranging from approximately 18,100 VPD to 39,300 VPD within the project limits by year 2040, which would yield a LOS F for the corridor with the current roadway configuration. These volumes would exceed roadway capacity at the adopted standards of LOS for US 92 within the project limits. The proposed widening to four lanes will allow US 92 to meet future travel demand at an acceptable LOS D or better and continue to serve as an important regional arterial. Transportation Systems Management & Operations-type improvements will not adequately address future travel demand needs.

Transportation Planning

The segments of US 92 from US 301 to CR 579 and from Park Road to County Line Road have been identified as cost feasible projects in the Hillsborough County Metropolitan Planning Organization's (MPO's) Imagine 2040: Hillsborough Long Range Transportation Plan (LRTP).

Safety

Crash data along US 92 within the project limits was obtained from the FDOT for the most recent five-year (2009 through 2013) period. There were 1,209 crashes reported within the project limits during the five-year period which involved 1,017 injuries and 14 fatalities. As a part of the analysis, the number of crashes that occurred at night was also summarized. The crash rate was calculated and compared to the statewide crash rates for similar roadway segments.

The average crash rate over the entire length of the US 92 study corridor is 3.59, which is higher than the statewide five-year average crash rate of 2.629 for two to three lane, two-way undivided suburban segments. Approximately 34% of the total crashes along US 92 are night-time crashes. A review of the distribution of crashes by mile post indicates that the majority of the crashes occurred at Falkenburg Road, Williams Road, CR 579/Mango Road, Kingsway Road, McIntosh Road, Branch Forbes Road/Forbes Road, Turkey Creek Road, Alexander Street, Maryland Avenue, and County Line Road. Many of the crashes on US 92 are types that are associated with congestion. The proposed widening of US 92 and the addition of turn lanes at intersections is expected to improve safety along the corridor.

Socioeconomic Demand

The Hillsborough County MPO's 2040 LRTP socioeconomic projections estimate an employment increase of 56% and a population increase of 48% for Hillsborough County between year 2010 and year 2040. The population estimate for Hillsborough County is 1,229,226 for the year 2010 and 1,815,964 for future year 2040, and the countywide employment estimate is 711,400 for the year 2010 and 1,112,059 for future year 2040. As a result, traffic on US 92 is expected to increase due to projected population and employment growth both along the corridor and in the region.

Section 4.0

Project Design Standards

Design and construction criteria for the proposed improvements to US 92 must adhere to FDOT standards for the design of such roadways and also must comply with recommended standard practices as set forth in the following documents:

- Manual on Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways, State of Florida.
- Plans Preparation Manual, FDOT
- A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials (AASHTO)
- A Policy on the Design of Urban Highways and Arterial Streets, AASHTO
- Drainage Manual, FDOT
- Manual on Uniform Traffic Control Devices, FHWA
- Roadway and Traffic Design Standards, FDOT
- Highway Capacity Manual, Transportation Research Board
- Quality/Level of Service Handbook, FDOT

Table 4-1 includes the design criteria for the proposed roadway improvement alternatives. All criteria are subject to change and only the latest criteria will be used during the final design phase.

**Table 4-1
Roadway Design Criteria**

DESIGN ELEMENT	CRITERIA		SOURCE
Design Speed	45 mph	50 mph	PPM Table 1.9.1
Roadway Classification	Urban Principal Arterial	Urban Principal Arterial	SLD
Design Vehicle	WB-62FL	WB-62FL	PPM Section 1.12
Access Management	Class 5	Class 5	F.S. 14-97.003
Connection Spacing	245 ft.	440 ft.	PPM Table 1.8.2
Median Opening Spacing Directional	660 ft.	660 ft.	PPM Table 1.8.2
Median Opening Spacing Full	1320 ft.	2640 ft.	PPM Table 1.8.2
Signal Spacing	1320 ft.	2640 ft.	PPM Table 1.8.2
A. Typical Section			
Number of Lanes	4	4	Typical Section
Minimum Lane Width	11	12	PPM Table 2.1.1
Bike Lane	7' Buffered Bike Lane	6.5 ft.	PPM Table 2.1.2, 8.4.1
Sidewalk Width	5 ft. with utility strip / 6 ft. without utility strip	5 ft. with utility strip / 6 ft. without utility strip	PPM Section 8.3.1
Minimum Median Width	22 ft.	30 ft.	PPM Table 2.2.1 PPM Section 2.16.4
Median Shoulder Width	8 ft.	8 ft.	PPM Table 2.3.2
Roadway Cross Slope (Inside Lane)	0.02	0.02	PPM Figure 2.1.1
Roadway Cross Slope (Outside Lane)	0.03	0.03	
Border	12 ft.	29 ft.	PPM Table 2.5.2 PPM Section 2.16.7
Roadside Slopes			PPM Table 4.2.4
Front Slope	1:2	1:6	
Back Slope	1:2	1:3	
Transverse Slope	1:4	1:4	
Driveway Grades			FDOT Standard Index 515
Commercial	10%	10%	
Residential	28%	28%	
Max Breakover w/o Transition	14%	14%	
B. Horizontal Geometry			
Maximum Superelevation	0.05	0.05	PPM Section 2.9 PPM Section 2.16.10
Minimum Superelevation Transition Length	100 ft.	100 ft.	PPM Table 2.9.3
Superelevation Transition Slope Rate	1:200	1:200	PPM Table 2.9.3
Superelevation Transition On Tangent	80%	80%	PPM Section 2.9
On Curve	20%	20%	
Maximum Deflection (no curve)	1°00'00" (with C&G) 0°45'00" (without C&G)	1°00'00" (with C&G) 0°45'00" (without C&G)	PPM Table 2.8.1a
Minimum Stopping Sight Distance	360 ft.	425 ft.	PPM Table 2.7.1
Maximum Curvature	8°15'	2°35'	PPM Table 2.8.3 PPM Table 2.9.1 PPM Figure 2.16.3
Maximum Curvature Using Normal Cross Slope	2°45'	R = 8337'	PPM Table 2.8.4 PPM Table 2.9.1

DESIGN ELEMENT	CRITERIA		SOURCE
B. Horizontal Geometry			
Length of Horizontal Curve Desirable Minimum	15V = 675 ft.	15V = 750 ft.	PPM Table 2.8.2a
	400 ft.	400 ft.	PPM Table 2.8.2a
C. Vertical Geometry			
Maximum Grade	6%	6%	PPM Table 2.6.1 PPM Section 2.16.8
Minimum Grade	0.30%	0.30%	PPM Table 2.6.4
Minimum Distance Between VPI's	250 ft.	250 ft.	PPM Table 2.6.4
Maximum Change in Grade (No Vertical Curve)	0.70%	0.60%	PPM Table 2.6.2
Minimum Crest Vertical Curve	K=98	K=136	PPM Table 2.8.5
Minimum Length	3V = 135 ft.	300 ft.	PPM Table 2.8.5
Minimum Sag Vertical Curve	K=79	K=96	PPM Table 2.8.6
Minimum Length (3V)	3V = 135 ft.	200 ft.	PPM Table 2.8.6
Base Clearance Above Base Clearance Water Elevation	1 ft. w/ M _r Reduction	1 ft. w/ M _r Reduction	PPM Table 2.6.3
D. Turn Lanes & Queue Length			
Queue Length Minimum	50 ft.	50 ft.	PPM Section 2.13.2
Total Deceleration Distance	L = 185 ft.	L = 240 ft.	Standard Index 301
Clearance Distance	L1 = 85 ft.	L1 = 105 ft.	Standard Index 301
Brake to Stop Distance	L2 = 100 ft.	L2 = 135 ft.	Standard Index 301
Taper Length (Single Left)	Δ = 50 ft.	Δ = 50 ft.	Standard Index 301
Taper Length (Dual Left)	Δ = 100 ft.	Δ = 100 ft.	Standard Index 301
E. Roadway Clearance and Offsets			
Vertical Clearance Overhead Sign Structures	17 ft. 6 in.	17 ft. 6 in.	PPM Table 2.10.2
Vertical Clearance to Overpasses	16 ft. 0 in.	16 ft. 0 in.	PPM Section 2.10
Vertical Clearance Signals	17 ft. 6 in.	17 ft. 6 in.	PPM Table 2.10.2
Clear Zone	24 ft.	24 ft.	PPM Table 4.2.1
Light Pole Offset	4ft. from Face of Curb	20 ft. from travel lane 14 ft. from auxiliary lane	PPM Table 4.2.3
Utility Offset	4ft. from Face of Curb	Outside of clear zone	PPM Table 4.2.3
Signal Pole Offset	4ft. from Face of Curb	Outside of clear zone	PPM Table 4.2.3
Trees Offset	4ft. from Face of Curb	Outside of clear zone	PPM Table 4.2.3
Bridge Piers and Abutments	For outside, the greater of 16ft. from edge of travel or 4ft. from face of curb. For median, the greater of 16ft. from edge of travel lane or 6ft. from edge of traffic lane (auxiliary lane)	Outside of clear zone	PPM Table 4.2.3
Other Obstacles Offset	4ft. from Face of Curb	Outside of clear zone	PPM Table 4.2.3

Section 5.0

Alternatives Alignment Analysis

The objective of the alternatives alignment analysis process was to identify technically and environmentally sound alternatives to provide a safe transportation facility that meets the purpose and need of the project, is acceptable to the community, minimizes impacts on the environment, and is cost effective. The process results in the selection of a preferred alternative that can be advanced to the design phase. This section summarizes the alternatives considered for this project.

Three alternatives were evaluated to determine if they can meet the purpose and need of this project. These alternatives include the following:

- Transportation Systems Management and Operations (TSMO) alternatives
- Multimodal alternatives
- Build alternatives

In conducting the alternatives analysis, a full range of typical section, intersection, and alignment alternatives were first developed to meet the identified capacity needs. These alternatives were developed with consideration of future traffic needs, input from the public, input from local governments, and standard engineering practice, including compliance with requirements of the Americans with Disabilities Act (ADA).

5.1 Transportation Systems Management and Operations

TSMO alternatives involve improvements designed to maximize the utilization and efficiency of the existing facility through improved system and demand management. The various TSMO options generally include traffic signal and intersection improvements, access management, and transit improvements. The additional capacity required to meet the projected traffic volumes along US 92 in the design year cannot be provided solely through the implementation of TSMO improvements; however, the TSMO strategies of traffic signal and intersection improvements and access management are included as part of the Build alternatives for the corridor.

5.2 Multi-Modal Alternatives

Based on the projected traffic demand, there are no standalone multi-modal alternatives that would meet the purpose and need for the project. In a meeting with the city of Plant City on June 6, 2016 FDOT recommended that transit plans within the city limits be reviewed to determine existing transit services throughout the project corridor. A review of the Hillsborough Area Regional Transit Authority (HART) Transit Guide determined that there are no transit services provided along the US 92 corridor

within the project limits. A telephone conversation with Steve Feigenbaum, HART Director of Service Development, also confirmed that HART does not serve Plant City or the project area (See Appendix C, US 92 - HART Existing and Planned Transit email summary of telephone conversation dated March 23, 2016). Mr. Feigenbaum also stated that HART does not have any current plans to provide transit service along the US 92 corridor in the future.

The proposed improvements to US 92 will create opportunities to include pedestrian and bicycle facilities along the project corridor. All Build alternatives will provide continuous five-foot sidewalks along both sides of the roadway. Additionally, seven-foot buffered bike lanes would be provided in each direction adjacent to the outside travel lanes. Pedestrian features will be designed and constructed in accordance with applicable current design standards.

5.3 Roadway Widening Alternatives

In conducting the alternatives analysis for the PD&E Study re-evaluation, consideration was given to changed conditions that may result in a change in the preferred build alternative from the original PD&E Study. As an example, changes in existing land use from the date of the original study (1994) to current existing land use would warrant consideration of alignment alternatives to minimize impacts to existing land use. Also, changes from the 1994 design standards to current design standards, changes in proposed design speeds, and changes in projected traffic volumes have resulted in new typical sections being considered. All of the typical sections discussed below have been revised and updated from the original PD&E Study based on new design criteria and standards. The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix A.

5.3.1 Roadway Widening Alternatives Considered

The project was divided into evaluation segments based on changes in land use and the proposed typical section in comparison with the land use and typical sections from the original PD&E Study. The evaluation segment limits are shown in Figure 5-1. The preferred build typical sections, and the alignment alternatives considered (where applicable) are described below.

Segment 1 from east of I-4 (Garden Lane) to west of Mango Road

From Garden Lane to west of I-75 and from just east of I-75 to west of Mango Road, the preferred build typical section is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 17-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks and a five-foot additional width to provide for slope embankment connection to the existing grade at the edge of the road right-way. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT

minimum design speed of 45 mph. The preferred build typical section for Segment 1 is shown in Figure 5-2.

From just west of I-75 to just east of I-75, the preferred build typical section is constrained by the piers for I-75. The preferred build typical section under I-75 is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 40-foot six-inch median with eight-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. This typical section complies with the FDOT minimum design speed of 45 mph. This preferred build typical section is shown in Figure 5-3.

A review of the existing land use (based on 2015 aerial maps) in comparison with the 1994 land use (based on the original PD&E Study aerial concept plans) indicates that there has been little to no changes in land use from Garden Lane to west of Mango Road. Therefore, the preferred build alignment for Segment 1 from Garden Lane to west of Mango Road follows the preferred alignment from the original PD&E Study. From Garden Lane to Falkenburg Road, the preferred build alignment is a north alignment with right-of-way to be acquired from the north side of the roadway. From Falkenburg Road to just west of Mango Road, the alignment shifts to a south alignment with right-of-way to be acquired from the south side of the roadway.

Segment 2 from west of Mango Road to east Mango Road

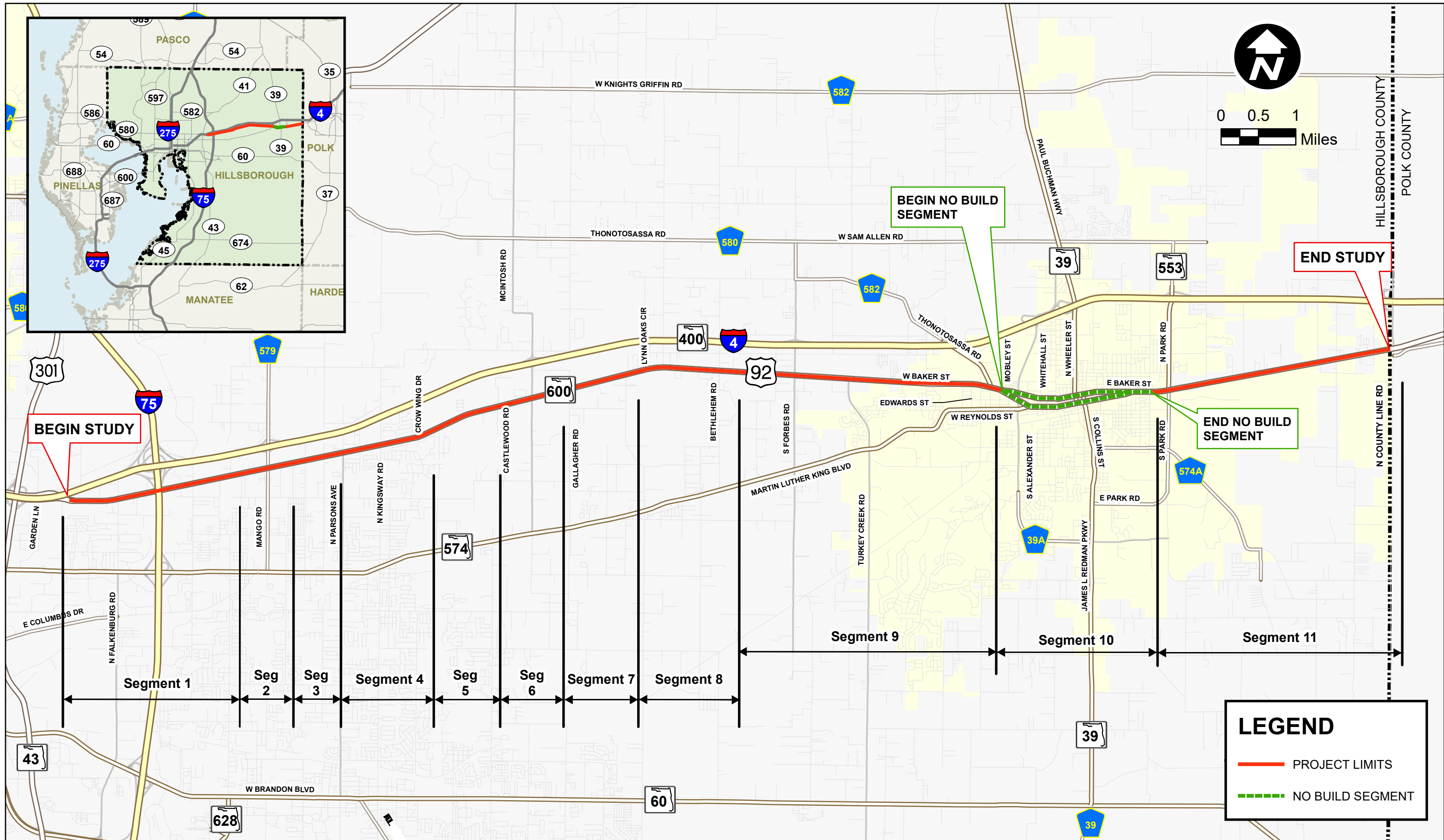
The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2.

The preferred alignment from the original PD&E Study for this area was a centered alignment. Due to additional development (First Freewill Baptist Church additions) which has occurred in the vicinity of the Mango Road intersection, north, centered, and south alignments were evaluated.

Segment 3 from east of Mango Road to North Parsons Avenue

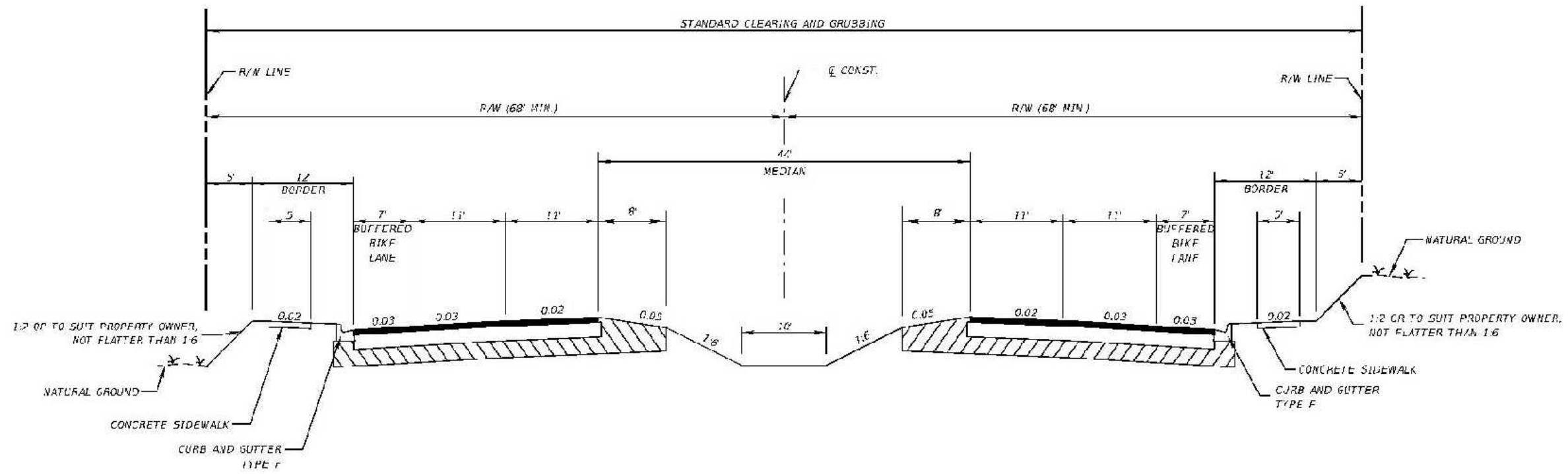
The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2.

A review of the existing land use (based on 2015 aerial maps) in comparison with the 1994 land use (based on the original PD&E Study aerial concept plans) indicates that there has been little to no changes in land use from east of Mango Road to North Parsons Avenue. Therefore, the preferred build alignment for Segment 3 from east of Mango Road to North Parsons Avenue follows the preferred alignment from the original PD&E Study and is a south alignment.

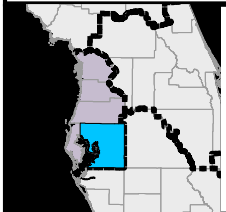


LEGEND

- PROJECT LIMITS
- - - NO BUILD SEGMENT



FROM EAST OF GARDEN LANE TO WEST OF I-75 - SEGMENT 1
 FROM EAST OF EAST OF I-75 TO WEST OF CR 579 - SEGMENT 1
 FROM WEST OF CR 579 TO EAST OF CR 579 - SEGMENT 2
 FROM EAST OF CR 579 TO NORTH PARSONS AVENUE - SEGMENT 3
 FROM NORTH PARSONS AVENUE TO EAST OF CROW WING DRIVE - SEGMENT 4
 DESIGN SPEED = 45 MPH

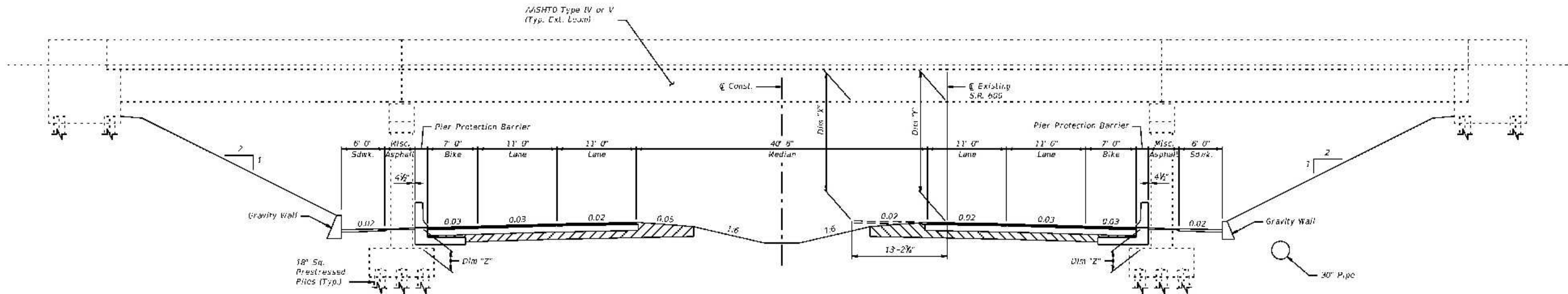


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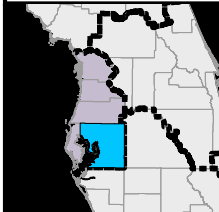
TYPICAL SECTION 1
PROPOSED FOUR LANE 45 MPH DESIGN SPEED
TYPICAL SECTION

Figure
5-2



UNDER I-75 BRIDGE
 FROM WEST OF I-75 TO EAST OF I-75 - SEGMENT 1
 DESIGN SPEED = 45 MPH

BRIDGE NO.	BRIDGE DATA TABLE			
	DIM "X" (ft.)	DIM "Y" (ft.)	DIM "Z" (ft.)	
			PIER 2	PIER 3
100414	10.275	18.500	4.135	3.135
100415	19.069	19.333	2.552	2.552
100422	17.673	17.938	2.745	2.245
100424	16.038	16.302	3.438	3.438



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TYPICAL SECTION 2
PROPOSED FOUR LANE 45 MPH DESIGN SPEED
TYPICAL SECTION UNDER I-75

Figure
5-3

Segment 4 from North Parsons Avenue to east of Crow Wing Drive

The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2. The preferred alignment from the original PD&E Study in this segment is a north alignment. Due to additional development which has occurred on the north side of the roadway (Burnett Middle School and The Hammocks at Kingsway subdivision), north and south alignments were evaluated from North Parsons Avenue to Crow Wing Drive.

Segment 5 from east of Crow Wing Drive to Castlewood Road

The preferred typical section for this segment is a high speed suburban roadway with two 12-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 54-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 29-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The preferred build typical section for Segment 5 is shown in Figure 5-4.

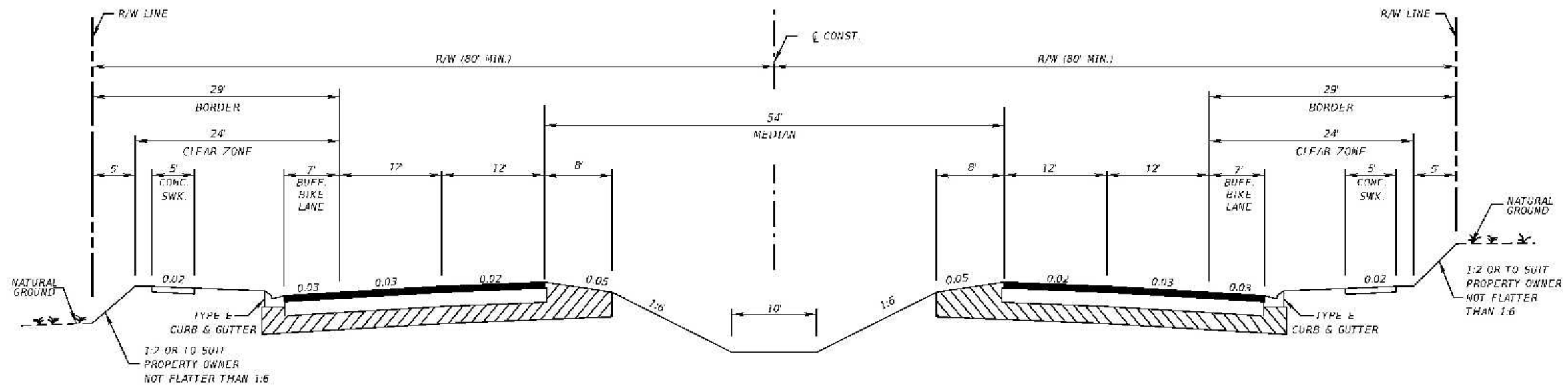
A review of the existing land use (based on 2015 aerial maps) in comparison with the 1994 land use (based on the original PD&E Study aerial concept plans) indicates that there has been little to no changes in land use from east of Crow Wing Drive to Castlewood Road. Therefore, the preferred build alignment for Segment 5 from east of Crow Wing Drive to Castlewood Road follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 6 from Castlewood Road to west of Gallagher Road

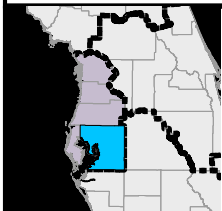
The preferred build typical section for this segment is the same as for Segment 5 and is shown in Figure 5-4. The preferred alignment from the original PD&E Study alignment in this segment was a north alignment. Due to additional development which has occurred in the vicinity of the McIntosh Road intersection (Independence Academy), north and south alignments were evaluated from Castlewood Road to west of Gallagher Road.

Segment 7 from west of Gallagher Road to Lynn Oaks Circle

The preferred build typical section for Segment 7 is the same as for Segment 5 and is shown in Figure 5-4. A review of the existing land use (based on 2015 aerial maps) in comparison with the 1994 land use (based on the original PD&E Study aerial concept plans) indicates that there has been little to no changes in land use from west of Gallagher Road to Lynn Oaks Circle. Therefore, the preferred build alignment for Segment 7 from west of Gallagher Road to Lynn Oaks Circle follows the preferred alignment from the original PD&E Study and is a south alignment.



FROM EAST OF CROW WING DRIVE TO CASTLEWOOD ROAD - SEGMENT 5
 FROM CASTLEWOOD ROAD TO WEST OF GALLAGHER ROAD - SEGMENT 6
 FROM WEST OF GALLAGHER ROAD TO LYNN OAKS CIRCLE - SEGMENT 7
 FROM LYNN OAKS CIRCLE TO EAST OF BETHLEHEM ROAD - SEGMENT 8
 FROM EAST OF BETHLEHEM ROAD TO EDWARDS STREET - SEGMENT 9
 DESIGN SPEED = 50 MPH



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TYPICAL SECTION 3
PROPOSED FOUR LANE 50 MPH DESIGN SPEED
TYPICAL SECTION

Figure
5-4

Segment 8 from Lynn Oaks Circle to east of Bethlehem Road

The preferred build typical section for Segment 8 is the same as for Segment 5 and is shown in Figure 5-4. Due to a reduction in the preferred build typical section width in comparison with the typical section width in the original PD&E Study, north, centered, and south alignments were evaluated from Lynn Oaks Circle to east of Bethlehem Road.

The preferred build alignment for Segment 8 from Lynn Oaks Circle to east of Bethlehem Road follows the preferred alignment from the original PD&E Study and is a centered alignment.

Segment 9 from east of Bethlehem Road to Mobley Street

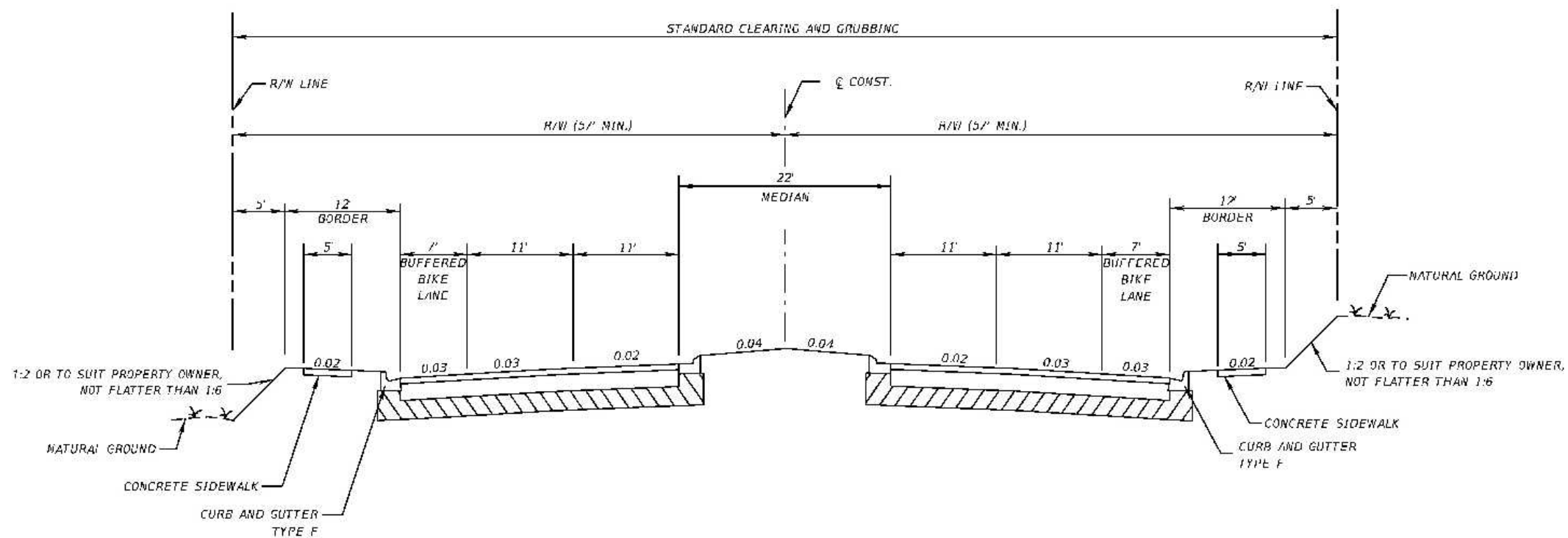
Segment 9 was further divided into several portions. The preferred build typical section for the portion of Segment 9 from east of Bethlehem Road to Edwards Street is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build typical section for the portion of Segment 9 from Edwards Street to Mobley Street is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 22-foot median. Type E curb and gutter is along the inside and Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A minimum 12-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 9 from Edwards Street to Mobley Street is shown in Figure 5-5.

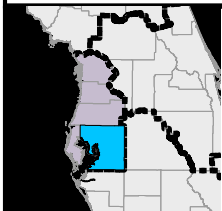
The preferred build alignment for Segment 9 from east of Bethlehem Road to Woodrow Wilson follows the preferred alignment from the original PD&E Study and is a south alignment from east of Bethlehem Road to Turkey Creek Road and then transitions to a north alignment from Turkey Creek Road to Woodrow Wilson Street. From Woodrow Wilson Street to Mobley Street, the preferred build alignment is a centered alignment due to geometric constraints at the Thonotosassa Road intersection and the Baker Street (US 92) intersection.

Segment 10 from Mobley Street to west of Park Road

The preferred alternative for this segment from the original 1994 PD&E Study is No-Build with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted from a rural to urban roadway in order to provide sidewalks. Improvements have been completed in this section of the roadway which meet the intent of the original 1994 PD&E Study recommendation for this segment of the project. Due to the addition of turn lanes at the Park Road intersection, a transitional widening is required from Maryland Avenue to Park Road. From Mobley Street to Maryland Avenue, the preferred build alternative for this segment is the No-Build Alternative. From Maryland Avenue to Park Road, the preferred build alternative is a transitional widening.



FROM EDWARDS STREET TO MOBLEY STREET - SEGMENT 9
 DESIGN SPEED = 45 MPH



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TYPICAL SECTION 4
PROPOSED FOUR LANE 45 MPH DESIGN SPEED
EDWARDS STREET TO MOBLEY STREET

Figure
5-5

Segment 10 from Mobley Street to west of Park Road

The preferred alternative for this segment from the original 1994 PD&E Study is No-Build with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted from a rural to urban roadway in order to provide sidewalks. Improvements have been completed in this section of the roadway which meet the intent of the original 1994 PD&E Study recommendation for this segment of the project. Due to the addition of turn lanes at the Park Road intersection, a transitional widening is required from Maryland Avenue to Park Road. From Mobley Street to Maryland Avenue, the preferred build alternative for this segment is the No-Build Alternative. From Maryland Avenue to Park Road, the preferred build alternative is a transitional widening.

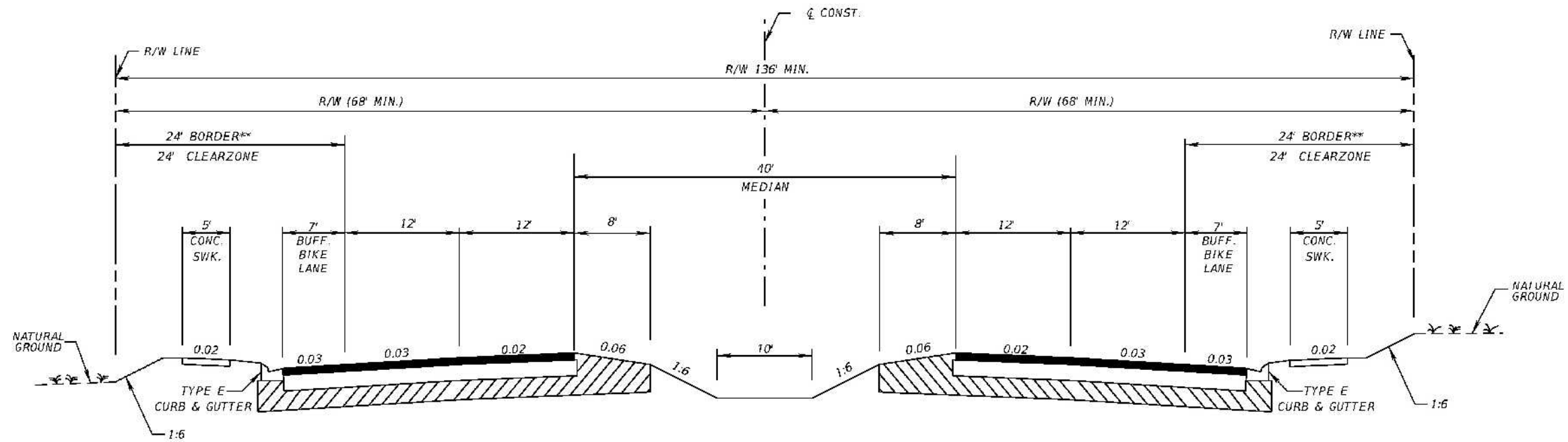
Segment 11 from west of Park Road to just east of County Line Road

The preferred build typical section for Segment 11 consists of two 12-foot travel lanes, a five-foot sidewalk, and a seven-foot buffered bike lane in each direction separated by a 40-foot median with eight-foot inside shoulders with a design speed of 50 mph and is shown in Figure 5-6. A 24-foot border and a 24-foot clear zone are provided along both sides of the roadway. This four-lane typical section requires a minimum of 136 feet of right-of-way. A design variation would be required for border width. The typical section complies with clear zone criteria so no design variation or exception would be required for clear zone.

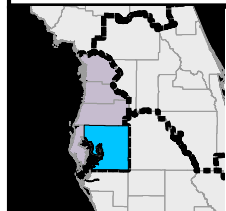
The preferred build alignment for Segment 11 from Park Road to County Line Road follows the preferred alignment from the original PD&E Study and is a north alignment.

5.3.2 Right-of-Way and Construction Cost Estimates

Table 5-1 provides the estimated costs for the roadway widening alternatives. The cost estimates include estimates for roadway, stormwater management facilities (SMFs) and floodplain compensation sites (FPCs) right-of-way and roadway, SMFs and FPCs construction costs. The total estimated cost for each alignment is also provided which includes the design, wetland mitigation, road, SMF and FPC right-of-way, roadway, SMF and FPC construction costs and construction engineering and construction costs.



FROM PARK ROAD TO COUNTY LINE ROAD - SEGMENT 11
 DESIGN SPEED = 50 MPH



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TYPICAL SECTION 5
PROPOSED FOUR LANE 50 MPH DESIGN SPEED
PARK ROAD TO COUNTY LINE ROAD

Figure
5-6

**Table 5-1
Roadway Widening Alternatives Estimated Costs**

Evaluation Segment	Segment Limits		Alignment	Estimated Costs		
	From	To		Road, SMFs and FPCs Right-of-Way	Road, SMFs and FPCs Construction	Total
Segment 1	Garden Lane	West of Mango Road	Original PD&E	\$34,518,000	\$16,450,000	\$54,360,000
Segment 2	West of Mango Road	East Mango Road	North	\$12,704,000	\$5,460,000	\$19,256,000
			Center	\$13,803,000	\$5,460,000	\$20,355,000
			South	\$11,403,000	\$5,460,000	\$17,955,000
Segment 3	East of Mango Road	North Parsons Avenue	Original PD&E	\$7,462,000	\$5,040,00	\$13,510,000
Segment 4	North Parsons Avenue	East of Crow Wing Drive	North	\$11,847,000	\$9,870,000	\$23,883,000
			South	\$11,852,100	\$9,870,000	\$23,903,000
Segment 5	East of Crow Wing Drive	Castlewood Road	Original PD&E	\$11,381,000	\$6,480,000	\$19,178,000
Segment 6	Castlewood Road	West of Gallagher Road	North	\$10,574,000	\$6,192,000	\$18,196,000
			South	\$10,473,000	\$6,192,000	\$17,945,000
Segment 7	West of Gallagher Road	Lynn Oaks Circle	Original PD&E	\$12,804,100	\$8,640,000	\$23,172,000
Segment 8	Lynn Oaks Circle	East of Bethlehem Road	North	\$20,772,000	\$10,368,000	\$33,543,000
			Center	\$21,972,000	\$10,368,000	\$34,728,000
			South	\$20,606,000	\$10,368,000	\$33,273,000
Segment 9	East of Bethlehem Road	Mobley Street	Original PD&E	\$61,305,000	\$44,910,000	\$116,202,000
Segment 10 ⁽¹⁾	Mobley Street	West of Park Road		\$0	\$0	\$0
Segment 11	West of Park Road	County Line Road	Original PD&E	\$46,423,000	\$25,344,000	\$76,859,000

Note: (1) Transitional costs from Maryland Avenue to Park road are included in Segment 11 costs.

5.3.3 Park Road and County Line Road Interchange Feasibility

An interchange feasibility analysis was conducted to consider feasibility of providing a grade separation at the intersections of US 92 with Park Road and County Line Road. A US 92 PD&E Study (435749-1) from I-4 to County Line Road – Park Road and County Line Road Interchanges Feasibility Analysis Memorandum, September 16, 2016, was prepared and is contained in the project files. Three grade separated interchanges were developed for each intersection and compared with the at grade intersection alternative.

Traffic analysis on the new interchange configurations yielded that the grade separated interchange alternatives had reduced delay and increased level of service in comparison to the at grade options. The results of the traffic analysis are shown Table 5-2.

**Table 5-2
Design Year 2040 Build AM/PM Interchange Delay and LOS**

Intersection	Design Year At Grade		Design Year With Grade Separation	
	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
US 92 at SR 553/Park Road (signalized)	48.2/53.8	D/D	32.6/21.6	C/C
US 92 at County Line Road (signalized) ⁽¹⁾	56.3/57.9	E/E	55.3/50.4	E/D

(1) Traffic Volumes from Final Design Traffic Technical Memorandum for US 92 PD&E Study, FPID: 433558-1-22-01.

Based on the results of the 2040 build intersection analysis at versus the grade separation in the table above, the intersection of Park Road will operate at improved delay and LOS for both the AM and the PM peak hours with the grade separation due to the removal on the northbound and southbound through traffic phase from the signal. Also, the intersection of County Line Road will operate with minor improvement in the delay and LOS during the AM and PM peak periods with the removal on the northbound and southbound through traffic volumes.

An estimated cost for each of the alternatives was developed using roadway, wall and bridge areas and the latest LRE unit costs for construction components. Differences in temporary traffic control were not considered. Due to the magnitude of difference between the construction cost of the grade separated alternates as compared to the at grade intersection alternatives, and the similarities in right-of-way requirements of the grade separated intersection alternatives as compared to the at grade intersection alternatives the, the right-of-way costs were not determined. Table 5-3 summarizes the results of the cost estimates.

**Table 5-3
Approximate Construction and ROW Costs**

Intersection	At Grade	Alternative 1	Alternative 2	Alternative 3
Park Road Const.	\$1,690,000	\$27,870,000	\$42,240,000	\$34,620,000
Park Road ROW	\$14,349,000	\$13,270,000	\$21,951,000	\$14,763,000
Park Road Total	\$16,039,000	\$41,140,000	\$64,191,000	\$49,383,000
County Line Rd Const.	\$1,525,000	\$31,320,000	\$37,850,000	\$33,165,000
County Line Rd. Row	\$10,664,000	\$12,331,000	\$17,934,000	\$11,859,000
County Line Rd. Total	\$12,189,000	\$55,840,000	\$55,784,000	\$45,024,000

Based on the analysis, the grade separated interchanges offered relatively minor improvement in traffic operations at a significantly higher cost. The relatively modest increases in LOS do not warrant the significantly increased cost of construction.

5.3.4 Preliminary Drainage Evaluation

A Final Stormwater Management Facility Report (Inwood Consulting Engineers, Inc., May 2017) has been prepared to evaluate stormwater management requirements for this study. A separate Final Stormwater Management Facility Report (Technical Memo) (Inwood Consulting Engineers, Inc., May 2017) that includes backup documentation for the stormwater management facilities sizing and siting locations has also been prepared. In addition, a Final Location Hydraulic Report (Inwood Consulting Engineers, Inc., May 2017) was prepared for the project. All three of these documents are contained in the project files. Basin Maps plans showing the locations of recommended stormwater management ponds and floodplain compensation ponds are in the Final Stormwater Management Facility (Technical Memo) located within the project files.

5.3.4.1 Design Criteria

The design of the stormwater management facilities for the project is governed by the rules set forth by the SWFWMD and FDOT. Water treatment and attenuation requirements will comply with the guidelines as defined in Chapter 40D-4 of the Florida Administrative Code and the SWFWMD Environmental Resource Permit Information Manual.

Wet detention and dry retention SMFs will provide for water quality improvements as well as water quantity attenuation for the project runoff. The SMFs are preliminarily sized for the most conservative typical section for each segment. Criteria for water quality and water quantity treatment and detention SMFs configuration for the project are summarized below.

Water quality treatment will be provided for one inch over the Directly Connected Impervious Areas (DCIA) or one-half inch over DCIA for wet detention and dry retention SMFs, respectively. An outfall control structure shall be designed to drawdown a maximum of one-half inch of the detention volume in 24 hours. The project traverses 14 WBIDs (1518: East Canal, 1531: Wiggins Prairie Drain, 1536B: Sixmile Creek, 1536C: Tampa Bypass Canal Tributary, 1542: Pemberton Creek, 1542A: Mill Creek,

1547: Seffner Canal, 1552: English Creek, 1560: Intermittent Stream, 1561: Spartman Branch, 1564: Hamilton Branch, 1565: Moore Lake Drain, 1568: Howell Branch, and 1576: Mango Drain), which are located in the Hillsborough River Basin, Alafia River Basin, and Coastal Hillsborough Bay Tributary Basin. Both Sixmile Creek (WBID 1536B) and Mango Drain (WBID 1576) are verified as impaired for nutrients on the current FDEP 303(d) list. Therefore, a pre-versus post pollutant loading analysis has been performed for this re-evaluation that complies with FDEP's March 2010 draft Stormwater Quality Applicant's Handbook or any subsequent updates or revisions. None of the proposed basins discharge to an Outstanding Florida Water; therefore, no additional treatment is required.

Detention SMFs Configuration – The proposed SMFs would have a minimum area of 0.5 acre and 100 feet minimum width for linear areas in excess of 200 feet in length (measured at the control elevation). The SMFs are likely to include a 20-foot minimum maintenance berm width, minimum 1:4 (vertical:horizontal) for SMF side slopes and tie up/down slopes to existing ground, and a minimum one-foot freeboard from the inside maintenance berm to the Design High Water stage.

5.3.4.2 Proposed Stormwater Management

Stormwater runoff will be routed to proposed SMFs for water quality treatment and attenuation purposes. The SMFs were sized to accommodate the road widening with the assumption that runoff from offsite areas would be drained separately from the onsite roadway runoff. A total of 22 roadway drainage basins have been created for analyzing SMF sizes which follow the same existing drainage pattern and outfall location. One SMF alternative for each basin has been analyzed.

The SMFs have been sized to accommodate the required treatment and attenuation volumes due to the proposed project improvements. The SMF sizing analysis assumes that all SMFs will be designed using the wet detention and dry retention SMF design criteria. A 20% upsize in the required SMF right-of-way area has been applied for all of the SMFs to account for preliminary parameters, such as the estimated seasonal high water (ESHW) elevations and ground elevations. The following parameters were considered in the sizing of potential SMF sites:

- Hydrologic and hydraulic factors, such as existing ground elevation, soil types, estimated seasonal high water, stormwater conveyance feasibility, allowable hydraulic grade line
- Environmental resource impacts, including impacts to cultural resources, wetlands and threatened or endangered species
- Floodplain impacts
- Major utility conflict potential
- Estimated right-of-way acquisition costs
- Contamination/Hazardous materials contamination involvement

Table 5 4 provides a summary of the proposed basin limits.

**Table 5-4
Summary of Proposed Drainage Basins**

Basin	From Station	To Station	Basin Area (ac.)	Related SMF	Outfall Location
1	111+74.53	132+65.74	10.60	SMF 1	Tampa Bypass Canal
2	132+65.74	192+99.56	22.42	SMF 2	Kennedy Hill Creek
3	192+99.56	215+52.65	10.67	SMF 3	Kennedy Hill Creek
4	215+52.65	258+99.50	17.50	SMF 4	Kennedy Hill Creek
5	258+99.50	295+48.35	13.18	SMF 5	Mango Lake
6	295+48.35	337+31.20	14.73	SMF 6	Lake Thonotosassa
7A	337+31.20	375+40.00	16.20	SMF 7A	Lake Thonotosassa
7B	375+40.00	402+84.19	12.46	SMF 7B	Lake Thonotosassa
8	402+84.19	443+55.27	19.81	SMF 8	Lake Thonotosassa
9	443+55.27	500+09.74	25.22	SMF 9	Lake Thonotosassa
10	500+09.74	530+97.14	13.34	SMF 10	Lake Thonotosassa
11	530+97.14	558+41.06	11.79	SMF 11	Lake Thonotosassa
12	558+41.06	571+27.34	5.44	SMF 12	Lake Thonotosassa
13	571+27.34	619+19.15	21.79	SMF 13	Lake Thonotosassa
14	619+19.15	643+70.00	11.77	SMF 14	Lake Thonotosassa
15	643+70.00	724+11.45	33.54	SMF 15	Lake Thonotosassa
16	724+11.45	768+37.95	17.95	SMF 16	CD-15
17	No-Action Area (No SMF)				
18	1024+91.42	1066+00.00	16.64	SMF 18	CD-16 & CD-17
19	1066+00.00	1097+00.00	13.34	SMF 19	English Creek
20	1097+00.00	1142+50.00	19.62	SMF 20	English Creek
21	1142+50.00	1186+74.28	17.60	SMF 21	CD-21

1. See concept plans in Appendix B

Please note that the SMF size recommendations are based on SMF sizes determined from preliminary data calculations, reasonable engineering judgment, and assumptions. SMF sizes and configurations may change during final design as more detailed information on SHGWT, wetland hydrologic information, and final roadway profiles become available. Please refer to Table 5-5 for a summary of SMF areas.

**Table 5-5
Summary of SMF Areas**

SMF Name	Basin Area (ac)	Basin Type	Req. Treat. + Att. Vol (ac-ft)	Prov. Treat. + Att. Vol (ac-ft)	Soil Type (ESHGW depth – ft.)	Pond Type	WBID No. & Impairment	SMF Right-of-Way Area (ac) (Including Access Easement)
SMF 1	10.60	Open	1.82	2.60	A/D (1 ft.)	Wet	1536B (Yes- DO, Chl-a)	3.81
SMF 2	22.42	Open	2.48	2.60	C/D (0.5 ft.)	Wet	1536C (No)	3.44
SMF 3	10.67	Open	1.18	1.20	B/D (0.5 ft.)	Wet	1536C (No)	4.19
SMF 4	17.50	Open	1.12	1.13	B/D (0.5 ft.)	Wet	1536C (No)	3.97
SMF 5	13.18	Open	1.45	1.83	A (6.6 ft.)	Dry	1576 (Yes- DO, Chl-a)	1.16
SMF 6	14.73	Open	2.44	3.40	A (6.6 ft.)	Dry	1547 (No)	1.69
SMF 7A	16.20	Closed	3.63	3.68	A (3.4 ft.)	Wet	1547 (No)	2.05
SMF 7B	12.46	Open	2.58	2.59	A (2.7 ft.)	Wet	1547 (No)	1.87
SMF 8	19.81	Open	2.73	2.76	A/D (1 ft.)	Wet	1547 (No)	4.74
SMF 9	25.22	Open	2.80	2.80	A/D (1 ft.)	Wet	1547 (No)	4.80
SMF 10	13.34	Open	2.63	2.66	A (6.6 ft.)	Dry	1542 (No)	1.45
SMF 11	11.79	Open	1.55	1.58	A (6.6 ft.)	Dry	1565 (No)	1.05
SMF 12	5.44	Open	0.79	0.80	A (6.6 ft.)	Dry	1565 (No)	0.71
SMF 13	21.79	Open	3.82	4.14	A/D (0.5 ft.)	Wet	1565 (No)	4.97
SMF 14	11.77	Open	1.18	1.62	B/D (0.5 ft.)	Wet	1561 (No)	2.40
SMF 15	33.53	Open	3.37	3.54	A/D (1 ft.)	Wet	1561 (No)	3.52
SMF 16	17.95	Open	2.38	2.39	A/D (2 ft.)	Wet	1542A (No)	2.48
SMF 17	No-Action Area (No SMF)							
SMF 18	16.64	Open	1.45	1.47	B/D (0.5 ft.)	Wet	1560 (No)	2.23
SMF 19	13.34	Open	1.14	1.15	A/D (0.5 ft.)	Wet	1552 (No)	2.34
SMF 20	19.62	Open	2.14	3.73	A/D (2 ft.)	Wet	1552 (No)	2.76
SMF 21	17.60	Open	1.37	1.37	A (2.8 ft.)	Wet	1531 (No)	1.35
Total								56.98

Each of the basins and SMFs are described below and the locations of the SMFs are shown on the basin maps contained in the *Final Stormwater Management Facility Report (Technical Memo)* (Inwood Consulting Engineers, Inc., May 2017) located within the project files.

SMF 1

Basin 1 is located between Station 111+74.53 and 132+65.74 within the Sixmile Creek watershed which is considered as an open basin. SMF 1 will serve as the treatment and attenuation SMF for Basin 1. The SMF has been sized based on an existing ground elevation at approximately 27 foot NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Myakka Fine Sand) with an estimated SHGWT depth of 1 foot below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 1 is 3.81 acres. This basin is located within the WBID 1536B which is impaired for nutrients; therefore, pollutant loading analysis has been performed.

SMF 2

Basin 2 is located between Station 132+65.74 and 192+99.56 within the Tampa Bypass Canal Tributary watershed which is considered as an open basin. SMF 2 will serve as the treatment and attenuation SMF for Basin 2. The SMF has been sized based on an existing ground elevation at approximately 25 feet NAVD (1-foot contours). The SMF is situated on HSG Type C/D soil (Eaton Mucky Sand) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 2 is 3.44 acres. This basin is located within the WBID 1536C which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 3

Basin 3 is located between Station 192+99.56 and 215+52.65 within the Tampa Bypass Canal Tributary watershed which is considered as an open basin. SMF 3 will serve as the treatment and attenuation SMF for Basin 3. The SMF has been sized based on an existing ground elevation at approximately 25 feet NAVD (1-foot contours). The SMF is situated on HSG Type B/D soil (St. Johns Fine Sand) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 3 is 4.19 acres. This basin is located within the WBID 1536C which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 4

Basin 4 is located between Station 215+52.65 and 258+99.50 within the Tampa Bypass Canal Tributary watershed which is considered as an open basin. SMF 4 will serve as the treatment and attenuation SMF for Basin 4. The SMF has been sized based on an existing ground elevation at approximately 25 feet NAVD (1-foot contours). The SMF is situated on HSG Type B/D soil (St. Johns Fine Sand) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 4 is 3.97 acres. This basin is located within the WBID 1536C which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 5

Basin 5 is located between Station 258+99.50 and 295+48.35 within the Mango Drain watershed which is considered as an open basin. SMF 5 will serve as the treatment and attenuation SMF for Basin 5. The SMF has been sized based on an existing ground elevation at approximately 73 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 6.6 feet below ground. Therefore, it is intended to be a dry retention SMF. The total required SMF right-of-way area for SMF 5 is 1.16 acres. This basin is located within the WBID 1576 which is impaired for nutrients; therefore, pollutant loading analysis has been performed.

SMF 6

Basin 6 is located between Station 295+48.35 and 337+31.20 within the Seffner Canal watershed which is considered as an open basin. SMF 6 will serve as the treatment and attenuation SMF for Basin 6. The SMF has been sized based on an existing ground elevation at approximately 79 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 6.6 feet below ground. Therefore, it is intended to be a dry retention SMF. The total required SMF right-of-way area for SMF 6 is 1.69 acres. This basin is located within the WBID 1547 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 7A

Basin 7A is located between Station 337+31.20 and 375+40.00 within the Seffner Canal watershed. The immediate outfall for this basin is Lake Shangri La. There is no natural outfall for this basin and hence considered a closed basin. A Drainage Complaint Investigation Report conducted by ICON for the Department in December 2015 referred to flooding within the Lake Shangri La community. A pump was installed by Hillsborough County, to alleviate the problem, which pumps excess runoff from Lake Shangri La to a ditch discharging to Baker Creek. Therefore, Baker Creek is the ultimate outfall for this basin.

SMF 7A will serve as the treatment and attenuation SMF for Basin 7A. The SMF has been sized based on an existing ground elevation at approximately 39 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 3.4 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 7A is 2.05 acres. This basin is located within the WBID 1547 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 7B

Basin 7B is located between Station 375+40.00 and 402+84.19 within the Seffner Canal watershed which also outfalls to Baker Creek, and is considered an open basin. SMF 7B will serve as the treatment and attenuation SMF for Basin 7B. The SMF has been sized based on an existing ground elevation at approximately 42 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Pomello Fine Sand) with an estimated SHGWT depth of 2.7 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 7B is 1.87 acres. This basin is located

within the WBID 1547 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 8

Basin 8 is located between Station 402+84.19 and 443+55.27 within the Seffner Canal watershed which is considered as an open basin. SMF 8 will serve as the treatment and attenuation SMF for Basin 8. The SMF has been sized based on an existing ground elevation at approximately 45 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Myakka Fine Sand) with an estimated SHGWT depth of 1 foot below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 8 is 4.74 acres. This basin is located within the WBID 1547 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 9

Basin 9 is located between Station 443+55.27 and 500+09.74 within the Seffner Canal watershed which is considered as an open basin. SMF 9 will serve as the treatment and attenuation SMF for Basin 9. The SMF has been sized based on an existing ground elevation at approximately 56 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Myakka Fine Sand) with an estimated SHGWT depth of 1 foot below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 9 is 4.8 acres. This basin is located within the WBID 1547 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 10

Basin 10 is located between Station 500+09.74 and 530+97.14 within the Pemberton Creek watershed which is considered as an open basin. SMF 10 will serve as the treatment and attenuation SMF for Basin 10. The SMF has been sized based on an existing ground elevation at approximately 70 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 6.6 feet below ground. Therefore, it is intended to be a dry retention SMF. The total required SMF right-of-way area for SMF 10 is 1.45 acres. This basin is located within the WBID 1542 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 11

Basin 11 is located between Station 530+97.14 and 558+41.06 within the Moore Lake Drain watershed which is considered as an open basin. SMF 11 will serve as the treatment and attenuation SMF for Basin 11. The SMF has been sized based on an existing ground elevation at approximately 83 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 6.6 feet below ground. Therefore, it is intended to be a dry retention SMF. The total required SMF right-of-way area for SMF 11 is 1.05 acres. This basin is located within the WBID 1565 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 12

Basin 12 is located between Station 558+41.06 and 571+27.34 within the Moore Lake Drain watershed which is considered as an open basin. SMF 12 will serve as the treatment and attenuation SMF for Basin 12. The SMF has been sized based on an existing ground elevation at approximately 85 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Lake Fine Sand) with an estimated SHGWT depth of 6.6 feet below ground. Therefore, it is intended to be a dry retention SMF. The total required SMF right-of-way area for SMF 12 is 0.71 acres. This basin is located within the WBID 1565 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 13

Basin 13 is located between Station 571+27.34 and 619+19.15 within the Moore Lake Drain watershed which is considered as an open basin. SMF 13 will serve as the treatment and attenuation SMF for Basin 13. The SMF has been sized based on an existing ground elevation at approximately 90 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Basinger, Holopaw, and Samsula Soils) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 13 is 4.97 acres. This basin is located within the WBID 1565 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 14

Basin 14 is located between Station 619+19.15 and 643+70.00 within the Spartman Branch watershed which is considered as an open basin. SMF 14 will serve as the treatment and attenuation SMF for Basin 14. The SMF has been sized based on an existing ground elevation at approximately 94 feet NAVD (1-foot contours). The SMF is situated on HSG Type B/D soil (St. Johns Fine Sand) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 14 is 2.4 acres. This basin is located within the WBID 1561 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 15

Basin 15 is located between Station 643+70.00 and 724+11.45 within the Spartman Branch watershed which is considered as an open basin. SMF 15 will serve as the treatment and attenuation SMF for Basin 15. The SMF has been sized based on an existing ground elevation at approximately 96 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Myakka Fine Sand) with an estimated SHGWT depth of 1 foot below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 15 is 3.52 acres. This basin is located within the WBID 1561 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 16

Basin 16 is located between Station 724+11.45 and 768+37.95 within the Spartman Branch watershed which is considered as an open basin. SMF 16 will serve as the treatment and attenuation SMF for

Basin 16. The SMF has been sized based on an existing ground elevation at approximately 111 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Seffner Fine Sand) with an estimated SHGWT depth of 2 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 16 is 2.48 acres. This basin is located within the WBID 1561 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 17

As this basin is in the No-Action segment, no SMF has been sized.

SMF 18

Basin 18 is located between Station 1024+91.42 and 1066+00.00 within the Intermittent Stream watershed which is considered as an open basin. SMF 18 will serve as the treatment and attenuation SMF for Basin 18. The SMF has been sized based on an existing ground elevation at approximately 138 feet NAVD (1-foot contours). The SMF is situated on HSG Type B/D soil (St. Johns Fine Sand) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 18 is 2.23 acres. This basin is located within the WBID 1560 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 19

Basin 19 is located between Station 1066+00.00 and 1097+00.00 within the English Creek watershed which is considered as an open basin. SMF 19 will serve as the treatment and attenuation SMF for Basin 19. The SMF has been sized based on an existing ground elevation at approximately 142 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Basinger, Holopaw, and Samsula Soils) with an estimated SHGWT depth of 0.5 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 19 is 2.34 acres. This basin is located within the WBID 1552 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 20

Basin 20 is located between Station 1097+00.00 and 1142+50.00 within the English Creek watershed which is considered as an open basin. SMF 20 will serve as the treatment and attenuation SMF for Basin 20. The SMF has been sized based on an existing ground elevation at approximately 140 feet NAVD (1-foot contours). The SMF is situated on HSG Type A/D soil (Seffner Fine Sand) with an estimated SHGWT depth of 2 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 20 is 2.76 acres. This basin is located within the WBID 1552 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

SMF 21

Basin 21 is located between Station 1142+50.00 and 1186+74.28 within the Wiggins Prairie Drain watershed which is considered as an open basin. SMF 21 will serve as the treatment and attenuation

SMF for Basin 21. The SMF has been sized based on an existing ground elevation at approximately 141 feet NAVD (1-foot contours). The SMF is situated on HSG Type A soil (Zolfo Fine Sand) with an estimated SHGWT depth of 2.8 feet below ground. Therefore, it is intended to be a wet detention SMF. The total required SMF right-of-way area for SMF 21 is 1.35 acres. This basin is located within the WBID 1531 which is not impaired for nutrients; therefore, pollutant loading analysis is not required.

5.3.5 Location Hydraulics Report

According to FEMA, the relevant FIRM panel numbers are 12057C0240H, 12057C0245H, 12057C0385H, 12057C0263H, 12057C0264H, 12057C0268H, 12057C0269H, 12057C0288H, and 12057C0290H dated August 28, 2008, and 12057C0380J dated September 27, 2013 for Hillsborough County, Florida. The majority of the project is designated Zone 'X' which means those areas have a 0.2% probability of flooding every year (500-year floodplain). Some parts (mostly stream and waterbody crossings) are in Zone 'AE' which have a 1% probability of flooding every year (100-year floodplain) and where predicted flood water elevations have been established.

General comments relating to floodplains include the fact that any development within the 100-year floodplain has the potential for placing citizens and property at risk of flooding and producing changes in floodplain elevations and plan view extent. Development, such as roadways, housing developments, strip malls, and other commercial facilities, within floodplains increases the potential for flooding by limiting flood storage capacity and exposing people and property to flood hazards. Development also reduces vegetated buffers that protect water quality and destroys important habitats for fish and wildlife. The area surrounding the proposed roadway widening project has and will continue to experience growth.

Per FDOT, whenever it is determined that the proposed project will involve a regulatory floodway, the District Drainage Engineer, or designee, must work with local agencies and FEMA, as required, to ensure the project is developed consistent with local floodway plans and floodplain management programs. A "No-Rise" certification will be required for any anticipated impacts to regulatory floodways and will be obtained during the design phase of this project. There is one regulatory floodway underneath Bridge No. 100025 and another one along the Spartman Branch stream (Bridge No. 100098).

Any floodplain impacts will be mitigated with offsite floodplain compensation sites or cut ditch sections on a cup for cup basis. From the available data, an approximate FPC has been calculated (Table 5-6). Within the project limits and right-of-way, 16 FPC segments have been identified which are impacted by the 100-year floodplain (Zone AE). Length and width are measured using the alignment chain and typical sections, respectively. Depth of impact has been calculated from the difference between the floodplain elevation and existing ground elevation or SHGWT elevation depending on the type of soil. It was concluded that the project will impact approximately 57.33 acres of floodplain area based on the most conservative roadway alternative. The locations of the FPC sites are also shown on the basin maps contained in the *Final Stormwater Management Facility Report (Technical Memo)* (Inwood Consulting Engineers, Inc., May 2017) located within the project files.

**Table 5-6
Summary Floodplain Compensation Areas**

FPC Name	Basin Area (ac)	Basin Type	Req. Treat. + Att. Vol (ac-ft)	Prov. Treat. + Att. Vol (ac-ft)	Soil Type (ESHGW depth – ft.)	Pond Type	WBID No. & Impairment	FPC Right-of-Way Area (ac) (Including Access Easement)
FPC-1A	N/A	N/A	N/A	N/A	A/D (1 ft.)	Dry	N/A	1.29
FPC-1B	N/A	N/A	N/A	N/A	C/D (0.5 ft.)	Dry	N/A	0.06
FPC-2	N/A	N/A	N/A	N/A	A (3.4 ft.)	Dry	N/A	8.18
FPC-3	N/A	N/A	N/A	N/A	A/D (1 ft.)	Dry	N/A	2.30
FPC-4	N/A	N/A	N/A	N/A	A (3.4 ft.)	Dry	N/A	1.45
FPC-5	N/A	N/A	N/A	N/A	B/D (1 ft.)	Dry	N/A	3.76
FPC-6/7	N/A	N/A	N/A	N/A	A/D (2 ft.)	Dry	N/A	1.42
FPC-8	N/A	N/A	N/A	N/A	A (6.6 ft.)	Dry	N/A	0.72
FPC-9	N/A	N/A	N/A	N/A	A (6.6 ft.)	Dry	N/A	6.52
FPC-10	N/A	N/A	N/A	N/A	B/D (0.5 ft.)	Dry	N/A	1.44
FPC-11	N/A	N/A	N/A	N/A	A (1.7 ft.)	Dry	N/A	5.30
FPC-12	N/A	N/A	N/A	N/A	A/D (2 ft.)	Dry	N/A	8.09
FPC-14	N/A	N/A	N/A	N/A	A (2.8 ft.)	Dry	N/A	16.80
Total								57.33

**The areas are based on 1-ft depth for compensation.*

***Impacts to floodplain areas associated with FPC 13 & 15 do not require R/W acquisition due to the minor encroachment. Those impacts will be compensated for within the FDOT R/W.*

Replacement drainage structures for this project are limited to hydraulically equivalent structures. The limitations to the hydraulic equivalency being proposed are basically due to restrictions imposed by the geometrics of design, existing development, cost feasibility, or practicability. An alternative encroachment location is not considered in this category since it defeats the project purpose or is economically unfeasible. Since flooding conditions in the project area are inherent in the topography or are a result of other outside contributing sources, and there is no practical alternative to totally eradicate flood impacts or even reduce them in any significant amount, existing flooding will continue but not be increased. The proposed structure will be hydraulically equivalent to or greater than the existing structure, and backwater surface elevations are not expected to increase. As a result, the project will not affect existing flood heights or floodplain limits. This project will not result in any new or increased adverse environmental impacts. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

5.3.6 Utilities

There are 18 UAOs that have been identified on the project from our Sunshine 811 design ticket and preliminary utility coordination. Tampa Electric Company (TEC) maintains overhead distribution lines primarily along the north side of US 92 for the limits of the project. TEC also maintains transmission facilities from Mango Road to the power substation located on the southeast corner of US 92 and Peach Avenue. Hillsborough County Utilities and City of Plant City provide the drinking water and sewer services along the corridor. Existing telephone and related communication are provided by Bright House Networks, Level 3 Communications, TW Telecom, AT&T, and FPL FiberNet. The majority of the communication lines are aerial and attached to the either TEC's or AT&T's pole line. There are also numerous buried service drops throughout the project. Fuel and natural gas services are provided by TECO's People Gas (TECO), Florida Gas Transmission (FGT), and Kinder Morgan/Central Florida Pipeline. TECO maintains a six-inch PE gas main along the east side of Pine Street. Kinder Morgan has a six-inch high pressure jet fuel line and a 10-inch gasoline line along the south side of US 92 from Park Road to County Line Road. FGT has a number of US 92 crossings along the project including six-inch gas main at Falkenburg Road, a 26-inch gas main along the east side of I-75, an 18-inch gas main just west of Moores Lake Road, a 30-inch and 36-inch gas main crossing located adjacent to the Hay Exchange business, and a four-inch gas main located along the south side of US 92 from CR 553 to North Wilder Road. Frontier Communications maintains buried facilities along both sides of US 92 for the limits of the project. Facilities include smaller distribution systems and larger duct systems intermittently along the 19-mile corridor.

Close coordination with the UAOs on the project will be undertaken during the project's future design phase to allow for appropriate planning by the companies and identify any major impacts with the proposed improvements.

5.3.7 Traffic Control Concepts

The maintenance of traffic during the construction of the proposed improvements will be designed to minimize impacts to motorists using US 92 as well as maintaining access to residents and business owners living and working adjacent to the roadway. Existing pedestrian and bicycle facilities will also be maintained to preserve bicycle and pedestrian access and connectivity throughout the construction process. As with most projects, the relationship between the existing conditions and the proposed improvements plays a major role in determining the maintenance of traffic scheme that will be used.

In general, guidance on converting two lanes to four lanes divided, urban from the FDOT Design Standard (Series Index 600) will be followed. It is envisioned that the roadway improvements will be constructed in three phases as noted in the following:

Phase I - Two-lane, two-way traffic would be maintained along the existing US 92 corridor. If necessary, temporary pavement of sufficient width will be provided to accommodate the two-lane, two-way traffic. The two lanes of the other half of the preferred build typical section will then be constructed without friction course.

Phase II - Traffic would then be rerouted to Phase I pavement and the second half of the preferred build typical section will be constructed.

Phase III – Traffic would then be rerouted to the Phase II pavement and friction course applied to the Phase I pavement.

Throughout all phases, the contractor will be required to maintain access to local streets and properties.

5.3.8 Bicycle and Pedestrian Accommodations

As part of the proposed roadway improvements, pedestrians and bicyclists will be accommodated through the Build portion of the project area. Currently, no bicycle lanes exist on US 92 within the Build portion of the project limits other than paved shoulders along the side of the existing roadway. All Build alternatives will provide a continuous five-foot sidewalk on both sides of the road through the Build project limits. Pedestrian features will be designed and constructed in accordance with applicable current design standards. All Build alternatives considered for this project will provide bicycle accommodations.

5.3.9 Multi-modal Accommodations

A review of the HART Transit Guide determined that there are no transit services provided along the US 92 corridor within the project limits. A telephone conversation with Steve Feigenbaum, HART Director of Service Development, also confirmed that HART does not serve Plant City or the project area at this time (See Appendix C, US 92 - HART Existing and Planned Transit email summary of telephone conversation dated March 23, 2016). Mr. Feigenbaum also stated that HART does not have any current plans to provide transit service along the US 92 corridor in the future.

The proposed improvements to US 92 will create opportunities to include pedestrian and bicycle facilities along the project corridor. All Build alternatives will provide continuous five-foot sidewalks along both sides of the roadway. Additionally, seven-foot buffered bike lanes will be provided in each direction adjacent to the outside travel lanes. Pedestrian features will be designed and constructed in accordance with applicable current design standards.

5.3.10 Access Management

The existing undivided facility provides unrestricted access from the side street connections. There are a number of median turn lanes to accommodate access to the developments along the north and south sides of the roadway as well as side streets. The access management plan has been developed based on Access Class 5 standards. An Access Class 5 roadway utilizes raised medians to provide separation between travel lanes and to restrict the number of median openings. The minimum median opening spacing allowed under Access Class 5 criteria is 660 feet for directional openings and 1,320 feet (design speed = 45 mph) for full and signalized openings. For design speed greater than 45 mph, minimum spacing for directional openings remains at 660 feet and increases to 2,640 feet for full and signalized openings. Table 5-7 identifies the locations of the proposed median openings. Additionally, the concept plans in Appendix B depict the proposed access management plan.

**Table 5-7
Access Management Plan - Proposed Median Openings**

US 92 PD&E Study From I-4 (SR 400) to County Line Rd Last Update: 9/27/16 Access Management							Rule 14-97									
							Access Class 5	Signal	Full	Directional						
							PS ≤ 45 mph	1,320	1,320	660						
							10% Deviation	1,188	1,188	594						
							PS > 45 mph	2,640	2,640	1,320						
							10% Deviation	2,376	2,376	1,188						
Median Opening #	Approx. Station	Distance From Previous Opening	Median Opening Type	Signal	North Side Road/Connection	South Side Road/Connection	Directional Openings		Full Openings		Traffic Signal		Existing Access Class	Proposed Posted Speed		
							Distance from Previous Opening	Meets Std or % Deviation	Distance from Previous Opening	Meets Std or % Deviation	Distance from Previous Opening	Meets Std or % Deviation				
1	98+35	-	Full		Eureka Springs Rd	Garden Ln										
2	107+39	904	Dual Directional		Patio Products Manufacturing	Drive Pro Auto Sales	904	Meets								
3	116+64	925	Full		Baptist Church Rd	Mike's Park-N-Sell	925	Meets	1829	Meets						
4	129+89	1325	Full-Signal	Yes	N Falkenburg Rd	N Falkenburg Rd			1325	Meets						
5	138+00	811	Dual Directional		SurvTech Solutions Inc	Mary's Miracle Lane	811	Meets								
6	150+58	1258	Full		Carmack Rd	Lot Access	1,258	Meets	2069	Meets						
7	165+80	1522	Full		Utility Access	Torrissi and Sons			1522	Meets						
8	174+55	875	Dual Directional		Anna Dr	McLeod Dr	875	Meets								
9	183+63	908	Full-Signal	Yes	Williams Rd	Williams Rd	908	Meets	1783	Meets	5374	Meets				
10	202+92	1929	Full		Brook Motel	Mobile Villa Dr			1929	Meets						
11	211+48	856	EB Directional		Black Dairy Rd	Americare Ambulance	856	Meets								
12	221+30	982	WB Directional		Used Car Lot	Mobile Drive	1,838	Meets					5	45		
13	228+29	699	Full		Atticus Ln	Lot Access	699	Meets	2,537	Meets						
14	237+77	948	Full-Signal	Yes	Mango Rd	Mango Rd			948	28.18%	5,414	Meets				
15	246+93	916	Dual Directional		Residential Access	Kennedy Hills Dr	916	Meets								
16	255+96	903	Full-Signal	Yes	Armwood High School	Peach Ave	903	Meets	1,819	Meets	1,819	Meets				
17	264+84	888	Full-Signal	Yes	Pine St	Pine St			888	32.73%	888	32.73%				
18	278+40	1356	Full		N Taylor Rd	N Taylor Rd			1,356	Meets						
19	292+04	1364	Full-Signal	Yes	N Parsons Ave	N Parsons Ave			1,364	Meets	2,720	Meets				
20	304+48	1244	Full		Brinwood Dr	Parsons Pointe St			1,244	Meets						
21	319+45	1497	Full-Signal	Yes	N Kingsway Rd	N Kingsway Rd			1,497	Meets	2,741	Meets				
22	327+64	819	Full		N/A	Heidi Rd			819	37.95%						
23	343+30	1566	Full		Crow Wing Dr	N/A			1,566	Meets						
24	362+52	1922	Full		N/A	Old Darby Street			1,922	27.20%						
25	382+48	1996	Dual Directional		Pasadena Dr	N/A	1,996	Meets								
26	406+75	2427	Full		Castlewood Rd	Castlewood Rd	2,427	Meets	4,423	Meets						
27	432+18	2543	Full-Signal	Yes	McIntosh Rd	McIntosh Rd			2,543	Meets	11,273	Meets				
28	442+18	1000	Full		Independence Academy	Residential Access			1,000	62.12%						
29	459+16	1698	Full-Signal	Yes	Gallagher Rd	Gallagher Rd			1,698	35.68%	2,698	Meets				
30	479+54	2038	Dual Directional		Residential Access	Residential Access	2,038	Meets								
31	500+33	2079	Full		General RV Center	Moose Lake Rd	2,079	Meets	4,117	Meets						
32	513+30	1297	Dual Directional		Reola Rd	Residential Access	1,297	Meets								
33	527+44	1414	Full		Fritzke Rd	Residential Access	1,414	Meets	2,711	Meets						
34	552+26	2482	WB Directional		Residential Access	Meadow Oaks Drive	2,482	Meets								
35	567+12	1486	Full		Bethlehem Rd	Bethlehem Rd	1,486	Meets	3,968	Meets			5	50		
36	588+63	2151	Dual Directional		Residential / Agricultural	Residential / Agricultural	2,151	Meets								
37	607+21	1858	Dual Directional		Rogers Rd	Tanner Rd	1,858	Meets								
38	620+54	1333	Full-Signal	Yes	N Branch Forbes Rd	N Forbes Rd	1,333	Meets	5,342	Meets	16,138	Meets				
39	638+57	1803	Dual Directional		Hay Exchange	Agricultural Access	1,803	Meets								
40	658+90	2033	Full-Signal	Yes	N/A	N Turkey Creek Rd	2,033	Meets	3,836	Meets	3,836	Meets				
41	674+10	1520	Dual Directional		Residential / U-turn	Residential / U-turn	1,520	Meets								
42	689+76	1566	Full		Robinson Orange Park	N/A	1,566	Meets	3,086	Meets						
43	697+46	770	WB Directional		N/A	Sugar Creek Dr	770	41.67%								
44	713+87	1641	Full		Whitehurst Rd	Walter Dr	1,641	Meets	2,411	Meets						
45	727+00	1313	Full		Residential Access	Florida Strawberry Festival			1,313	50.27%						
46	739+86	1286	WB Directional		N/A	N Ritter Street	1,286	Meets								
47	746+34	1934	Dual Directional		Lighthouse Ministries Thrift	Edwards St	648	50.91%								
48	759+61	1327	Full-Signal	Yes	W Thonotosassa Rd	W Thonotosassa Rd	1,327	Meets	3,261	Meets	10,071	Meets	5	45		
US 92 SPLITS AT MOBLEY STREET & REJOINS AT S GORDON STREET																
49	1024+55	1354	Full-Signal	Yes	SR 553 / Park Road	SR 553 / Park Road			26,494	Meets	26,494	Meets				
50	1051+56	2701	Full		N Wilder Rd	N/A			2,701	Meets						
51	1070+39	1883	Dual Directional		Pleasant Acre Dr	N/A	1,883	Meets								
52	1078+57	818	Full		Son Keen Rd	N/A	818	38.03%	2,701	Meets						
53	1089+10	1053	Dual Directional		Happy Homes Ln	N/A	1,053	20.23%								
54	1105+57	1647	Full		Thrasher Rd	N/A	1,647	Meets	2,700	Meets						
55	1131+72	2615	Full		Charlie Taylor Rd	Lot Access			2,615	Meets						
56	1145+27	1355	Full		N Wiggins Rd	S Wiggins Rd			1,355	48.67%						
57	1160+96	1569	Full		Parkwood Estates Dr	Jim Lefler Cir			1,569	40.57%						
58	1172+40	1144	Dual Directional		N Webb Rd	S Webb Rd	1,144	13.33%								
59	1186+27	1387	Full-Signal	Yes	County Line Rd	County Line Rd	1,387	Meets	2,531	Meets	16,172	Meets				

5.3.11 Potential Environmental Impacts

An analysis of potential environmental impacts was conducted for all alternatives. This included a review of impacts to wetlands, wildlife, and habitat; archaeological and historic resources; contamination and hazardous materials; socio-cultural effects; and the potential increase in noise levels to the surrounding community. A summary of the findings is provided below.

- A *Wetland Evaluation and Biological Assessment Report* (Inwood Consulting Engineers, Inc., October 2016) was prepared for this project to document current environmental conditions along the corridor and potential impacts to wetlands, listed species, or their habitat; evaluate the project area's current potential to support species listed as endangered, threatened, or of special concern; identify current permitting and regulatory agency coordination requirements for the project; identify mitigation opportunities to offset unavoidable impacts to wetlands, listed species, or their habitat; and request comments from regulatory agencies with jurisdiction over the study area.

A wetland and surface water impacts evaluation was conducted for each of the alternative alignments discussed above. These impacts are summarized in Table 5-8.

Final determination of jurisdictional wetland areas and mitigation requirements will occur between the FDOT and the appropriate state and federal regulatory agencies during the final design phase of this project. All unavoidable wetland impacts resulting from the construction of the project will be mitigated according to Section 373.4137, Florida Statutes, through the purchase of mitigation bank credits or the preservation, enhancement, restoration, and/or creation of wetlands.

A wetland and surface water impacts evaluation was also conducted for each of the alternative SMF and FPC sites discussed above. These impacts are summarized in Table 5-9 and Table 5-10, respectively.

**Table 5-8
Anticipated Wetland and Surface Water Impacts**

SEGMENT	ALIGNMENT ALTERNATIVE	WETLAND (FLUCFCS)	ESTIMATED WETLAND IMPACTS (Ac.)
No Build Alternative	No Build Alternative	--	0
Segment 1 from east of I-4 (Garden Lane) to west of Mango Road	Original PD&E Alignment – North/South	615	0.50
		630	0.18
Segment 2 from west of Mango Road to east Mango Road	North	--	0
	Centered	--	0
	South	--	0
Segment 3 from east of Mango Road to North Parsons Avenue	Original PD&E Alignment – South	--	0
Segment 4 from North Parsons Avenue to east of Crow Wing Drive	North	641	0.72
		644	0.27
		653	0.29
	South	641	0.72
		644	0.26
		653	0.40
Segment 5 from east of Crow Wing Drive to Castlewood Road	Original PD&E Alignment – North	641	0.14
Segment 6 from Castlewood Road to west of Gallagher Road	North	530	0.74
		615	0.54
	South	530	0.06
		615	0.22
Segment 7 from west of Gallagher Road to Lynn Oaks Circle	Original PD&E Alignment – South	--	0
Segment 8 from Lynn Oaks Circle to east of Bethlehem Road	North	615	2.19
	Centered	615	2.09
	South	615	1.50
Segment 9 from east of Bethlehem Road to Mobley Street	Original PD&E Alignment – South/North/Center	615	0.89
		618	0.04
		630	5.76
		641	0.01
Segment 10 from Mobley Street to just west of Park Road	No Build Alternative	--	0
Segment 11 just west of Park Road to just east of County Line Road	Original PD&E Alignment – North	618	0.16

**Table 5-9
Anticipated SMF Wetland and Surface Water Impacts**

LOCATION	FLUCFCS CODE	FLUCFCS TYPE	ESTIMATED WETLAND IMPACTS (acres)
SMF 1	110	RESIDENTIAL - LOW DENSITY	N/A
	140	COMMERCIAL	
SMF 2	140	COMMERCIAL	N/A
SMF 3	130	RESIDENTIAL - HIGH DENSITY	> 0.50
	434	HARDWOOD CONIFER MIXED	
SMF 4	130	RESIDENTIAL - HIGH DENSITY	0.10
	140	COMMERCIAL	
	617	MIXED HARDWOOD WETLANDS	
SMF 5	140	COMMERCIAL	N/A
SMF 6	130	RESIDENTIAL - HIGH DENSITY	N/A
SMF 7A	120	RESIDENTIAL - MEDIUM DENSITY	N/A
SMF 7B	140	COMMERCIAL	N/A
	190	OPEN LAND	
SMF 8	434	HARDWOOD CONIFER MIXED	N/A
SMF 9	434	HARDWOOD CONIFER MIXED	3.00
	617	MIXED HARDWOOD WETLANDS	
SMF 10	214	ROW CROPS	N/A
SMF 11	110	RESIDENTIAL - LOW DENSITY	0.80
	615	STREAM AND LAKE SWAMPS	
SMF 12	110	RESIDENTIAL - LOW DENSITY	N/A
SMF 13	110	RESIDENTIAL - LOW DENSITY	0.40
	214	ROW CROPS	
	615	STREAM AND LAKE SWAMPS	
SMF 14	210	CROPLAND AND PASTURELAND	N/A
SMF 15	115	INDUSTRIAL	0.23
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
SMF 16	214	ROW CROPS	0.7
	190	OPEN LAND	
	630	WETLAND FORESTED MIXED	
SMF 18	210	CROPLAND AND PASTURELAND	1
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
SMF 19	120	RESIDENTIAL - MEDIUM DENSITY	N/A
SMF 20	110	RESIDENTIAL - LOW DENSITY	N/A
SMF 21	110	RESIDENTIAL - LOW DENSITY	N/A

**Table 5-10
Anticipated FPC Wetland and Surface Water Impacts**

LOCATION	FLUCFCS CODE	FLUCFCS TYPE	ESTIMATED WETLAND IMPACTS (acres)
FPC-1A	210	CROPLAND AND PASTURELAND	0.2
FPC-1B	641	FRESHWATER MARSH	0.06
FPC-2	190	OPEN LAND	0.3
	434	HARDWOOD CONIFER MIXED	
	641	FRESHWATER MARSH	
FPC-3	130	RESIDENTIAL - HIGH DENSITY	0.7
	434	HARDWOOD CONIFER MIXED	
	641	FRESHWATER MARSH	
FPC-4	434	HARDWOOD CONIFER MIXED	N/A
FPC-5	434	HARDWOOD CONIFER MIXED	N/A
FPC-6	110	RESIDENTIAL - LOW DENSITY	N/A
FPC-8	214	ROW CROPS	N/A
FPC-9	110	RESIDENTIAL - LOW DENSITY	> 0.10
	615	STREAM AND LAKE SWAMPS	
FPC-10	214	ROW CROPS	0.95
	630	WETLAND FORESTED MIXED	
FPC-11	110	RESIDENTIAL - LOW DENSITY	N/A
FPC-12	150	INDUSTRIAL	1.1
	210	CROPLAND AND PASTURELAND	
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
FPC-14A	120	RESIDENTIAL - MEDIUM DENSITY	N/A
	140	COMMERCIAL	
FPC-14B	140	COMMERCIAL	0.2
	630	WETLAND FORESTED MIXED	
	641	FRESHWATER MARSH	

- An evaluation of impacts to endangered species was conducted for this project. a total of 20 listed species may possibly occur within or near the study area. This includes seven federally-listed and 13 state-listed species. However, the study area and adjacent properties are developed such that most of the remnant natural habitats are not of sufficient quality or quantity to support many species, particularly listed species.

The study corridor is located within FWS Consultation Areas for the Audubon's crested caracara, Florida scrub-jay, and sand skink. Consultation Areas are meant to guide Federal and non-Federal actions. In general, proposed actions inside the consultation area are more likely to affect the species than actions that are located outside the consultation area. However, the consultation area is based on the best available information to the FWS and not necessarily the most current environmental or habitat conditions of the study area. Coordination is typically undertaken during a project's design phase to determine whether and to what extent a project may affect federally-listed species.

FDOT determined that the proposed widening of US 92 will have "No Effect" on the federally-listed Audubon's crested caracara (*Caracara plancus audubonii*), the Florida scrub-jay (*Aphelocoma coerulescens*), sand skink, and blue-tailed mole skink. The project will also have "No Effect" on the state-listed Florida pine snake, and the short-tailed snake or the state-managed Florida black bear.

FDOT determined that the proposed widening of US 92 "May Affect, But is Not Likely to Adversely Affect" the federally-listed eastern indigo snake (*Drymarchon couperi*), and wood stork (*Mycteria Americana*) and "May Affect, But is Not Likely to Adversely Affect" the state-managed bald eagle, the state listed Florida burrowing owl, Florida Sandhill Crane, gopher tortoise, Sherman's fox squirrel, southeastern American kestrel, and wading birds.

Based on the results of previous wildlife surveys in the study area, it has been determined that the proposed project may affect, but is not likely to adversely affect or jeopardize the existence of any threatened or endangered species. Any wetland mitigation proposed during the design phase of the project is expected to fully offset any potential impacts to aquatic or wetland-dependent species. The FWS and FWC concurrence letters are included in Appendix C.

- A *Cultural Resource Assessment Survey* (CRAS) (Archaeological Consultants Inc., August 2016) was prepared for the project. As a result of the assessment, 510 historic resources were documented within the Area of Potential Effect (APE). Of the 510 total resources, 102 were previously recorded in the 1992 CRAS, and 408 were newly identified. The study identified 71 eligible or potentially eligible resources which include two historic districts, three building complex resource groups, one object, and 66 buildings. Forty-four of these resources have been found officially eligible or listed by the State Historic Preservation Officer (SHPO), and 27 were newly evaluated as potentially eligible. Of these 44 resources, three are located within the Build segments of the project:
 - The Polk County Obelisk (8HI05328) was erected in 1930 and is located at the southwest corner of the intersection of US 92 and County Line Road. It was previously determined NRHP-eligible by the SHPO. It is eligible at the local level under Criterion A in the areas of Transportation and Local History.

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- The Camp Knox Tourist Court Resource Group (8HI04634) at 11104 E. US 92 is a building complex comprised of 11 contributing resources (8HI12994 through 8HI13003 and 8HI13032). This resource group is considered potentially eligible for listing in the NRHP under Criterion A in the areas of Community Planning and Development and American Tourism History. It also meets eligibility Criterion C in the area of Architecture as a high-integrity example of an early 20th century tourist court, which is a diminishing resource type in Florida.
 - The Tomlin Middle School Resource Group (8HI13404), constructed in 1954, is a Mid-Century Modern style public school complex located at 501 Woodrow Wilson Street in Plant City. It is comprised of eight contributing resources: 8HI13246 through 8HI13253. The Tomlin Middle School Resource Group is considered potentially eligible for listing in the NRHP under Criterion C in the area of Architecture as a high-integrity example of a Mid-Century Modern style public school building in Florida.

A total of 41 shovel tests were conducted within the APE. Sixteen of these tests were placed in the 14 previously recorded sites identified in the original US 92 PD&E Study's CRAS. The remaining 25 shovel tests were placed in newly proposed areas of right-of-way. None of the shovel tests yielded cultural material. Therefore, no new archaeological sites were found, and no new evidence of any of the previously identified sites was discovered.

A preliminary analysis conducted to determine if any significant or potentially significant cultural resources, including archaeological sites and historic buildings, were within each of the 21 SMF and 14 FPC sites along US 92. Based on this preliminary analysis, no proposed SMF or FPC sites need to be avoided because of significant resources.

The CRAS was submitted to SHPO on March 17, 2016 for review and transmittal to SHPO. SHPO concurred with the findings and recommendations in a letter received September 7, 2016. The FHWA and SHPO concurrence letter is included in Appendix C.

A Section 106 Consultation Case Study Report (Archaeological Consultants Inc., March 2017) was prepared to evaluate the potential effects (primary and secondary) of the proposed undertaking to the three historic properties located within the project APE for the Segments that include a preferred build alternative, as identified above. In consultation with SHPO, FDOT has applied the Criteria of Adverse Effect found in 36 CFR Part 800.5 and has determined that the project will have no effect on the NRHP-eligible Tomlin Middle School Resource Group (8HI13404) and its eight (8) contributing resources (8HI13246-HI13253), no effect on the Polk County Line Obelisk (8HI05328), and no adverse effect on the NRHP-eligible Camp Knox Tourist Court Resource Group (8HI04634) and its 11 contributing resources (8HI12994- HI13003, 8HI13032).

The preferred build alternative will create an increase in traffic noise levels that exceeds the Noise Abatement Criteria (NAC) at the Camp Knox Tourist Court Resource Group. A noise barrier was evaluated and it was determined that a noise wall would be a potentially feasible and reasonable method to abate roadway related noise for this site and will be evaluated further during the design phase. SHPO has requested that additional consultation be conducted during the design to address the potential noise wall for the Camp Knox Tourist Court Resource Group. The SHPO concurrence letter is included in Appendix C.

- A Level I contamination evaluation was conducted and documented in a *Final Contamination Screening Evaluation Report* (CSER) (Tierra, Inc., April 2017) for this project. The environmental screening resulted in identification of 169 sites that may present the potential for petroleum contamination or hazardous materials. Nine of these sites were given a “High” rating, 50 sites were given a “Medium” rating, 93 sites were assigned a “Low” rating, and 17 sites were rated “No” for contamination potential.

For sites rated “Low” or “No” for potential contamination, no further action is required at this time. Although these sites have the potential to impact the project, they have been determined to have low risk at this time and do not need to be investigated further. Sites that are rated “Medium” or “High” for potential contamination, and are determined to be within the project’s vicinity during the design phase, will be subject to a Level 2 field screening as they have been determined to have potential contaminants which may impact the proposed widening of US 92. A comprehensive list of all potential contamination sites and their risk ranking can be found in the US 92 Final CSER located within the project files.

If project construction activities are planned in an area where groundwater pumping or excavation at or below the groundwater table is anticipated, further Level 2 testing would be performed by the FDOT.

- A Level 1 Contamination Screening Evaluation Memo (CSEM) (Tierra, Inc., April 2017) was prepared for this project and is intended to provide an initial risk rating of preliminary Stormwater Management Facilities (SMFs) and Flood Plain Compensation (FPC) facilities identified in the Final Preliminary Stormwater Treatment Facilities Report. This Level 1 contamination screening evaluation has resulted one site being identified as “High” rating, 12 sites being identified as “Medium” rating, and 22 sites being identified as “Low” rating for contamination potential. A comprehensive list of all potential contamination sites and their risk ranking can be found in the US 92 Final CSEM located within the project files.

Additional screening may be required for SMF and FPC alternatives selected for final design with a risk rating of “Low” or “No.” Some of the reasons additional screening may be required include changes in regulatory status, permitting, land use and the occurrence, or discovery of new discharges.

For “High” or “Medium” rated SMF and FPC alternatives, additional sample analysis may be required based on historical land use of the site alternative and/or surrounding properties to determine if contamination impacts exist at the proposed sites.

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- A *Final Noise Study Report* (NSR) (KB Environmental Sciences, Inc., April 2017) was prepared for this project. Seven-hundred seventeen noise sensitive receptors (i.e., discrete representative locations) representing 757 properties with a noise sensitive land use(s) were evaluated within 80 noise sensitive areas (NSAs). The evaluated properties are comprised of 722 residential properties, seven places of worship, six schools, six outdoor dining areas at restaurants, four medical facilities, four non-profit institutions, three motels, three recreational areas and two day care centers.

Of the 757 evaluated properties, 55 are predicted to be impacted by traffic noise with existing conditions and 75 are predicted to be impacted in the future without the proposed improvements. With the proposed improvements, 136 of the 757 properties are predicted to be impacted by traffic noise. One hundred and thirty-three of the 136 properties are residences, one is a day care center, one is a playground at a medical center and one is a recreational area.

Traffic management measures, modifications to the roadway alignment, buffer zones and noise barriers were considered as abatement measures. Based on an evaluation of these measures, traffic management, modifications to the alignment of the roadway and buffer zones are not feasible and reasonable measure to abate (i.e., reduce) the predicted traffic noise impacts. For the following noise sensitive land uses, noise barriers are considered to be a potentially feasible and reasonable abatement measure.

- Residences in Parkwood Estates and west of Webb Road (NSA WB2)
- Residences west of Greenway Drive and Happy Homes Mobile Home Park (NSA WB6)
- Residences located in and in the vicinity of Robinson Orange Park (NSA WB13)
- Residences located West of Fletcher Lane (NSA WB14)
- Residences located west of Bethlehem Road and in Coronation Court (NSA WB18)
- Residences located at the Kingsway Subdivision (NSA WB26)
- Residences located at the Brooks Residential Motel and Camp Knox Tourist Court (NSA WB35)
- Star Motel/Rental Units (NSA EB4)
- Shangri La Subdivision (NSA EB12)
- Residences in the Family Rentals Mobile Home Park and west of Tanner Road (NSA EB25)
- Residences in the Stonebridge Mobile Home Park (NSA EB30)

The estimated cost to construct the noise barriers ranges from \$1,538,760 to \$3,960,000 depending on barrier length and height.

The FDOT is committed to the construction of noise barriers at the locations above, contingent upon the following:

- Detailed noise analysis during the final design process of the project supports the need for, and the feasibility and reasonableness of providing the barriers as abatement;

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- The detailed analysis demonstrates that the cost of the noise barrier will not exceed the cost effective limit;
 - The residents/property owners benefitted by the noise barrier desire that a noise barrier be constructed; and
 - All safety and engineering conflicts or issues related to construction of a noise barrier are resolved.

5.3.12 Bridge Analysis

The widening of US 92 from a two-lane to a four-lane roadway requires the lengths of the four concrete bridge culverts as well as the 18 concrete box culverts to be extended. This extension of the culverts will also eliminate the need for the boardwalks and pedestrian bridges since the sidewalks can be carried over the waterways on these longer culverts. Preliminary inspection of these culverts indicates that they were constructed in 1930 and later widened in 1943. While they are approximately 85 years old, they are in good shape and the bridge culverts have been given sufficiency ratings ranging from 90.3 to 95.4. Based on this information, the culverts are suitable to be extended and, therefore, do not need to be replaced. Some rehabilitation work, such as spall or delamination repairs, may be needed at the time of the culvert extensions but this work will be minor.

The four I-75 bridges (Structure Nos. 100414, 100415, 100422, and 100424) can accommodate the widening of US 92 but the roadway typical section will need to be modified. The minimum horizontal clearance in span 2 between columns of Piers 2 and 3 is 102 feet four inches when measured perpendicular to US 92. This width provides enough room for the travel lanes as shown in Figure 5-3.

Both the existing and future vertical clearances under these bridges along US 92 are all greater than the desired 16.50' minimum except for the I-4 EB to I-75 SB Ramp Bridge (Bridge #100424) which is only 16.302' at the centerline of the existing US 92. When the roadway section is widened to the ultimate 6 lane section, this vertical clearance will be reduced to 16.038'. While this is less than the 16.50' clearance specified in section 2.10 of the FDOT Plan Preparation Manual (PPM), it is greater than the 16' clearance requirement in AASHTO's "A Policy on Geometric Design of Highways and Streets". FDOT PPM Chapter 2.10 Vertical Clearance states "*For any construction affecting existing bridge clearances (e.g., bridge widenings or resurfacing), FDOT minimum vertical clearance is 16'-0". If the minimum design vertical clearance is between 16'-0" and 16'-2", place a note in the plans as shown in Section 10.4.1 of Volume 2.*" This note requires that the contractor is to submit a certified survey to verify the as-built vertical clearances.

Lowering the profile was considered to provide the desired 16.50' vertical clearance but this results in conflicts between the barrier footings and bridge pier footings. The bottom of the standard barrier footing is located 2'-4" below the gutter elevation and a 6" clearance between the two footings is desirable to prevent cracking in both the roadway pavement and the barrier as the rigidity of the barrier footing changes as it moves off the unyielding bridge footing to the more flexible soil. Based

on as-built plans, the available distance between the proposed gutterline and the top of the existing bridge footing ranges from 2.245 feet to 4.135 feet with the both piers on the I-75 NB mainline (#100414) and the I-75 SB to I-4 EB Ramp (#100422) over US 92 Bridges providing less than the 2'-10" of vertical space desired. This conflict can be overcome by designing a footing that is either direction attached to the bridge footing or is not as thick and does not need to be as deep as what is specified in the standards.

While the horizontal clearance in span 2 provides enough room for the lanes, there is not enough room for the sidewalk which will therefore need to be placed in the approach spans. The 1V:2H front slope is currently located in these approach spans so a retaining wall system will be needed.

One option is to use gravity walls, as shown in Figure 5-3, to retain this front slope so there is room for a level sidewalk. Gravity walls require only minimum embedment so utility conflicts are limited and they are cast-in-place so they can be constructed in confined spaces with limited headroom. Gravity walls are relatively inexpensive and easy to construct compared to other retained earth wall systems but their height is limited which means that the space provided is limited.

A second option is to use an H-pile wall. Steel H-piles can be used for these soldier piles since they can be easily spliced, which is important since there is limited vertical clearance under the bridge. A concrete fascia is then used between the soldier piles to both retain the earth between the piles as well as provide an aesthetically pleasing wall surface. Soil nails are used to anchor these walls and reduce the amount of embedment required. One advantage of these walls is that they can be constructed with limited vertical clearance, such as this location, and can retain greater soil heights than gravity walls and can, therefore, provide a greater horizontal opening. These H-pile walls may need to be shifted to avoid utilities and other underground infrastructure like the 30" RCP on the south side of US 92 and they are more expensive to construct than the gravity walls.

5.3.13 Roadway and Intersection Design Traffic and Layouts

The information provided in the tables and graphics relative to side street improvements are provided for informational purposes only. Although the Final DTTM shows the need for side street improvements, only improvements along US 92 as shown in the Concept Plans are anticipated as part of this PD&E study.

Opening year 2020 and design year 2040 build calculated intersection delay and LOS for signalized and un-signalized intersections are summarized in Table 5-11 and Table 5-12.

Table 5-11
Opening Year 2020 Build AM/PM Intersection Delay and LOS

Intersection	Overall Average Delay (sec./vehicle)	Overall Intersection LOS
US 92 at Falkenburg Road (signalized)	30.7/27.5	C/C
US 92 at Williams Road (signalized)	24.3/23.1	C/C
US 92 at CR 579/ Mango Road (signalized)	35.4/42.8	D/D
US 92 at Peach Avenue (signalized)	4.9/8.0	A/A
US 92 at Pine Street (signalized)	14.3/13.4	B/B
US 92 at Parsons Avenue (signalized)	24.1/28.8	C/C
US 92 at Kingsway Road (signalized)	23.6/27.6	C/C
US 92 at McIntosh Road (signalized)	31.8/35.4	C/D
US 92 at Gallagher Road (signalized)	37.2/26.9	D/C
US 92 at Branch Forbes Road (signalized)	26.2/29.7	C/C
US 92 at Turkey Creek Road (signalized)	17.4//15.0	B/B
US 92 at Whitehurst Road/Walter Drive ⁽¹⁾ (un-signalized)	38.7/30.4	E/D
US 92 at SR 566/Thonotosassa Road/Lemon Street (signalized)	36.8/31.1	D/C
US 92 at Maryland Avenue (signalized)	19.8/9.8	B/A
US 92 at SR 553/Park Road (signalized)	35.2/32.7	D/C
US 92 at County Line Road ⁽²⁾ (signalized)	26.3/27.6	C/C

(1) Un-signalized Intersection-Delay/LOS along worst minor approach.

(2) From Final Design Traffic Technical Memorandum for US 92 PD&E Study, FPID: 433558-1-22-01.

Table 5-12
Design Year 2040 Build AM/PM Intersection Delay and LOS

Intersection	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
US 92 at Falkenburg Road (signalized)	43.2/42.8	D/D
US 92 at Williams Road (signalized)	41.7/52.3	D/D
US 92 at CR 579/ Mango Road (signalized)	43.2/53.4	D/D
US 92 at Peach Avenue (signalized)	8.0/9.4	A/A
US 92 at Pine Street (signalized)	21.8/15.4	C/B
US 92 at Parsons Avenue (signalized)	31.4/37.0	C/D
US 92 at Kingsway Road (signalized)	32.5/34.5	C/C
US 92 at McIntosh Road (signalized)	47.5/46.6	D/D
US 92 at Gallagher Road (signalized)	48.0/32.7	D/C
US 92 at Branch Forbes Road (signalized)	38.6/40.4	D/D
US 92 at Turkey Creek Road (signalized)	25.9/23.0	C/C
US 92 at Whitehurst Road/Walter Drive ⁽¹⁾ (un-signalized)	392.0/393.9	F/F
US 92 at SR 566/Thonotosassa Road/Lemon Street (signalized)	50.6/47.9	D/D
US 92 at Maryland Avenue (signalized)	24.4/13.7	C/B
US 92 at SR 553/Park Road (signalized)	48.2/53.8	D/D
US 92 at County Line Road ⁽²⁾ (signalized)	56.3/57.9	E/E

(1) Un-signalized Intersection-Delay/LOS along worst minor approach.

(2) From Final Design Traffic Technical Memorandum for US 92 PD&E Study, FPID: 433558-1-22-01.

Opening year 2020 and design year 2040 Build AM/PM eastbound and westbound Roadway Segment and LOS are summarized below in Tables 5-13 through 5-16, respectively.

Table 5-13
Opening Year 2020 Build AM/PM EB Roadway Segment Speed and LOS

Roadway	Segment	2020 Build Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 EB	Falkenburg Road to Williams Road	1.03	35.4/35.3	B/B
	Williams Road to Mango Road	1.01	32.6/29.8	C/C
	Mango Road to Peach Avenue	0.34	35.6/32.8	B/C
	Peach Avenue to Pine Street	0.17	27.3/26.4	C/D
	Pine Street to Parsons Avenue	0.50	28.9/25.1	C/D
	Parsons Avenue to Kingsway Road	0.50	26.5/27.1	D/C
	Kingsway Road to McIntosh Road	2.08	41.0/39.3	B/B
	McIntosh Road to Gallagher Road	0.51	29.7/30.0	C/C
	Gallagher Road to Branch Forbes Road	3.23	46.2/45.5	A/A
	Branch Forbes Road to Turkey Creek Road	0.78	39.8/43.0	B/A
	Turkey Creek Road to SR 566/Thonotosassa Road/Lemon Street	2.09	42.0/41.5	B/B
	East of SR 566/Thonotosassa Road/Lemon Street	-	-	-
	West of Maryland Avenue	-	33.8/35.2	B/A
	Maryland Avenue to SR 553/Park Road	0.30	18.8/20.1	D/D
SR 553/Park Road to County Line Road	3.59	42.6/41.2	A/A	

Table 5-14
Opening Year 2020 Build AM/PM WB Roadway Segment Speed and LOS

Roadway	Segment	2020 Build Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 WB	County Line Road to SR 553/Park Road	3.59	43.2/44.0	A/A
	SR 553/Park Road to Maryland Avenue	0.30	30.0/33.2	C/C
	West of Maryland Avenue	-	-	-
	East of SR 566/Thonotosassa Road/Lemon Street	-	31.4/30.7	C/C
	SR 566/Thonotosassa Road/Lemon Street to Turkey Creek Road	2.09	44.9/47.1	A/A
	Turkey Creek Road to Branch Forbes Road	0.78	35.0/34.0	B/C
	Branch Forbes Road to Gallagher Road	3.23	43.4/44.8	A/A
	Gallagher Road to McIntosh Road	0.51	25.6/23.0	D/D
	McIntosh Road to Kingsway Road	2.08	40.9/44.4	B/A
	Kingsway Road to Parsons Avenue	0.50	30.3/30.5	C/C
	Parsons Avenue to Pine Street	0.50	29.8/36.6	C/B
	Pine Street to Peach Avenue	0.17	27.8/22.0	C/D
	Peach Avenue to Mango Road	0.34	23.6/21.1	D/D
	Mango Road to Williams Road	1.01	35.1/36.8	B/B
Williams Road to Falkenburg Road	1.03	35.8/39.3	B/B	

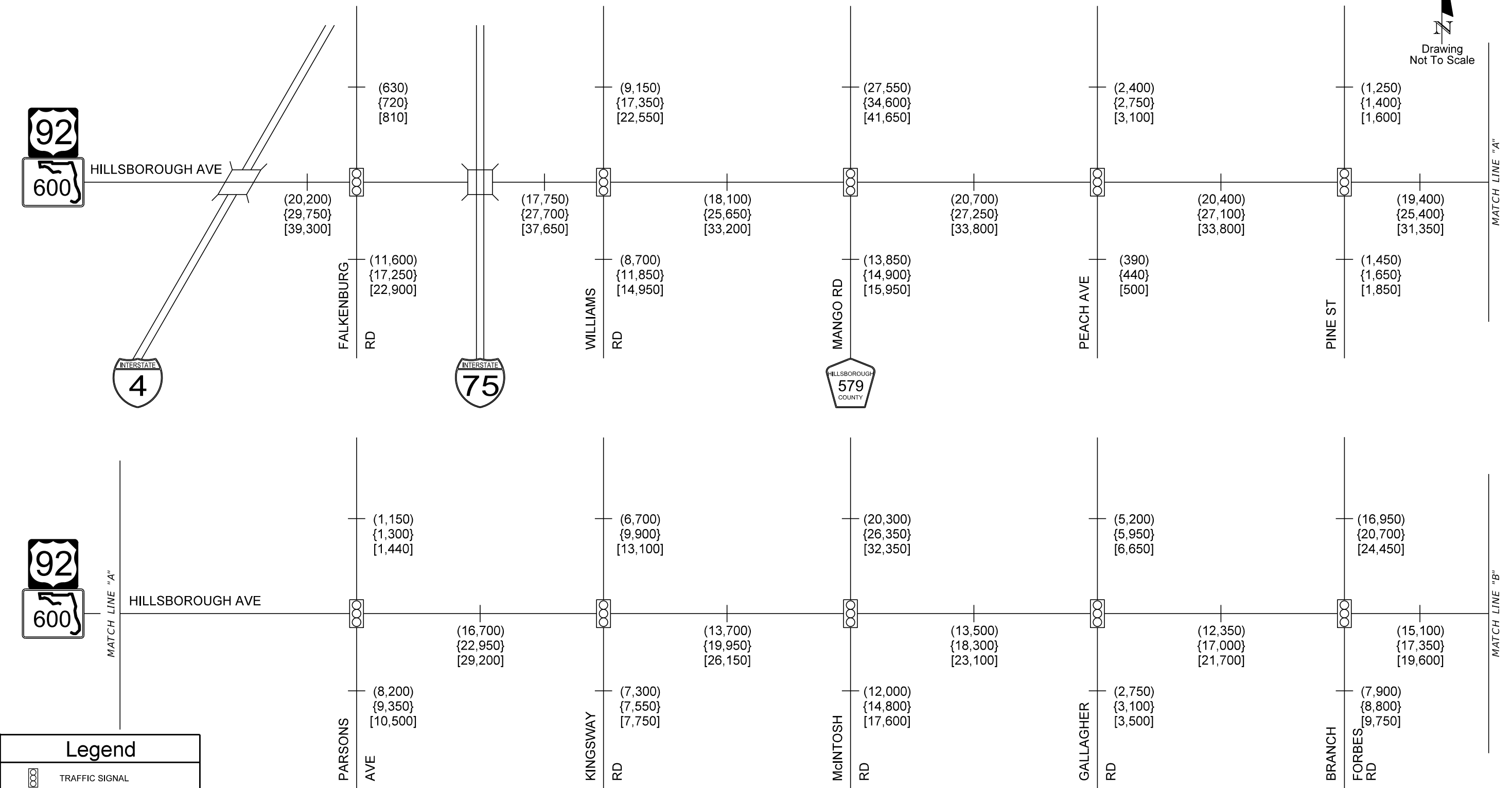
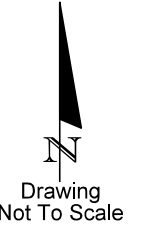
Table 5-15
Design Year 2040 Build AM/PM EB Roadway Segment Speed and LOS

Roadway	Segment	2040 Build Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 EB	Falkenburg Road to Williams Road	1.03	33.9/24.9	C/D
	Williams Road to Mango Road	1.01	33.1/26.9	C/D
	Mango Road to Peach Avenue	0.34	33.6/30.9	C/C
	Peach Avenue to Pine Street	0.17	23.0/25.2	D/D
	Pine Street to Parsons Avenue	0.50	24.7/21.1	D/D
	Parsons Avenue to Kingsway Road	0.50	25.2/23.2	D/D
	Kingsway Road to McIntosh Road	2.08	40.0/36.9	B/B
	McIntosh Road to Gallagher Road	0.51	28.1/26.2	C/D
	Gallagher Road to Branch Forbes Road	3.23	45.5/43.0	A/A
	Branch Forbes Road to Turkey Creek Road	0.78	38.6/41.6	B/B
	Turkey Creek Road to SR 566/Thonotosassa Road/Lemon Street	2.09	40.5/37.7	B/B
	East of SR 566/Thonotosassa Road/Lemon Street	-	-	-
	West of Maryland Avenue	-	33.7/34.4	B/B
	Maryland Avenue to SR 553/Park Road	0.30	17.0/18.6	D/D
SR 553/Park Road to County Line Road	3.59	42.1/40.1	A/A	

**Table 5-16
Design Year 2040 Build AM/PM WB Roadway Segment Speed and LOS**

Roadway	Segment	2040 Build Condition		
		Distance (mi)	Arterial Speed (mph)	Roadway Segment LOS
US 92 WB	County Line Road to SR 553/Park Road	3.59	39.2/43.4	B/A
	SR 553/Park Road to Maryland Avenue	0.30	24.7/30.4	D/C
	West of Maryland Avenue	-	-	-
	East of SR 566/Thonotosassa Road/Lemon Street	-	30.6/29.7	C/C
	SR 566/Thonotosassa Road/Lemon Street to Turkey Creek Road	2.09	44.1/46.9	A/A
	Turkey Creek Road to Branch Forbes Road	0.78	33.1/32.7	C/C
	Branch Forbes Road to Gallagher Road	3.23	41.8/44.2	B/A
	Gallagher Road to McIntosh Road	0.51	24.4/21.8	D/D
	McIntosh Road to Kingsway Road	2.08	37.5/41.9	B/B
	Kingsway Road to Parsons Avenue	0.50	25.4/29.2	D/C
	Parsons Avenue to Pine Street	0.50	23.8/36.3	D/B
	Pine Street to Peach Avenue	0.17	25.3/21.6	D/D
	Peach Avenue to Mango Road	0.34	23.0/21.0	D/D
	Mango Road to Williams Road	1.01	30.6/35.1	C/B
Williams Road to Falkenburg Road	1.03	31.5/35.7	C/B	

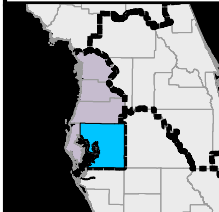
The Final DTTM prepared for this study provides the future year Annual Average Daily Traffic (AADT) for the project as shown in Figures 5-7 and 5-8. The opening year 2020 and the design year 2040 AM and PM peak hour traffic volumes are shown in Figures 5-9 and 5-10, and 5-11 and 5-12, respectively. Intersection improvements recommended in the Final DTTM are identified in Figures 5-13 and 5-14. The side street improvements are shown for informational purposes only and are not included as part of the project. The intersection queue length estimates included in the Final DTTM are shown in Table 5-17. Although the traffic analysis shows the need for side street improvements, only improvements along US 92 are anticipated. Meeting minutes referencing this discussion with Hillsborough County Staff are included in Appendix C.



Legend

- TRAFFIC SIGNAL
- STOP SIGN (SIDE STREET ONLY)

(1234) 2020 AADT
 {1234} 2030 AADT
 [1234] 2040 AADT

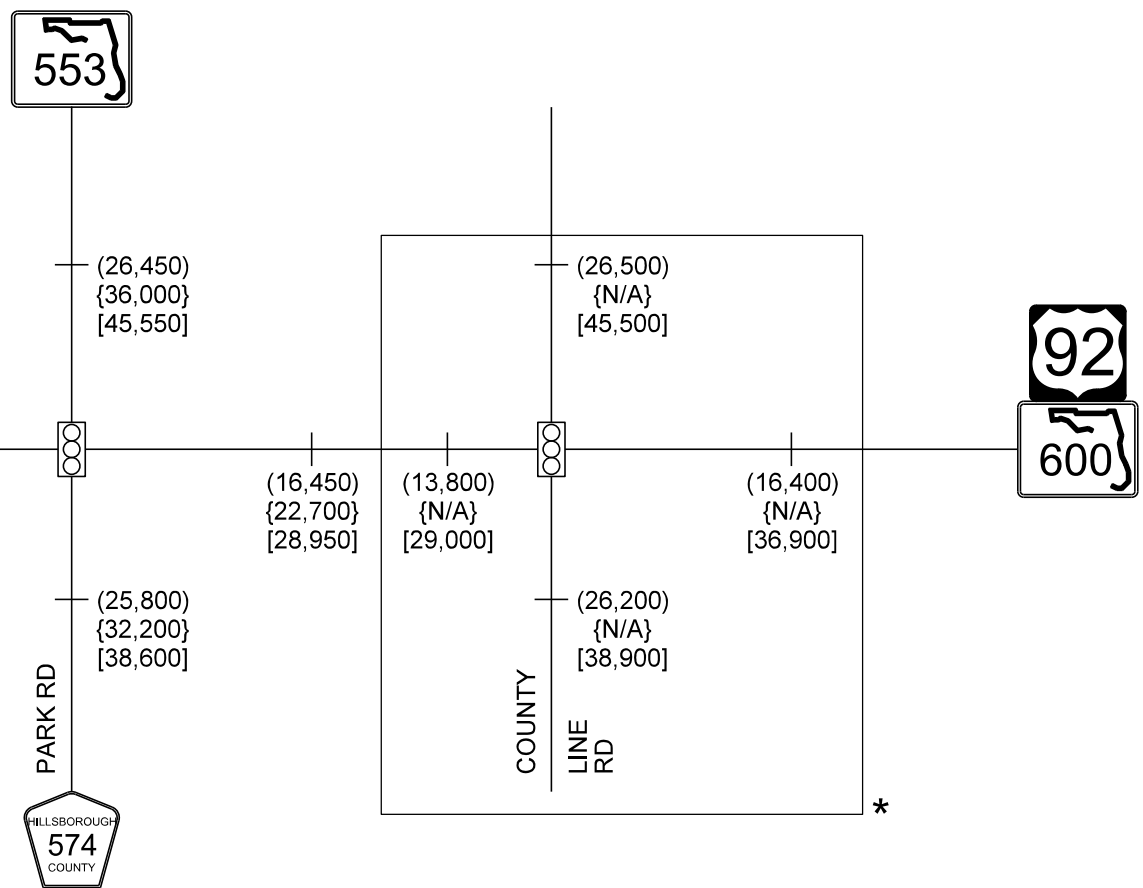
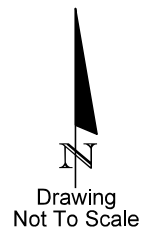
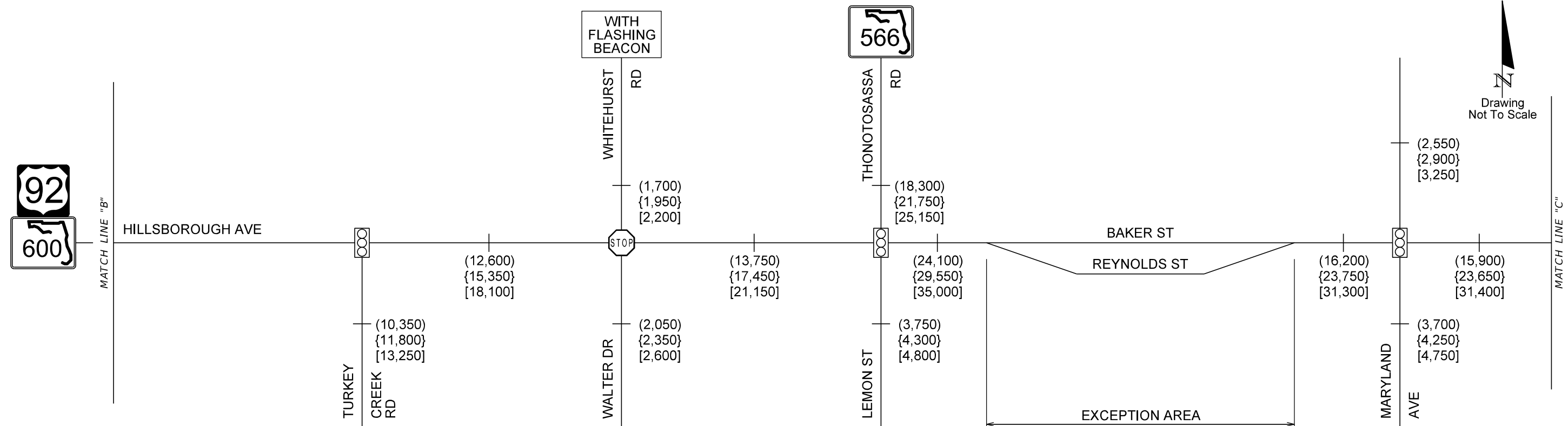


Florida Department of Transportation
District 7

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FUTURE YEARS ANNUAL AVERAGE DAILY TRAFFIC (AADT) (A)

Figure 5-7

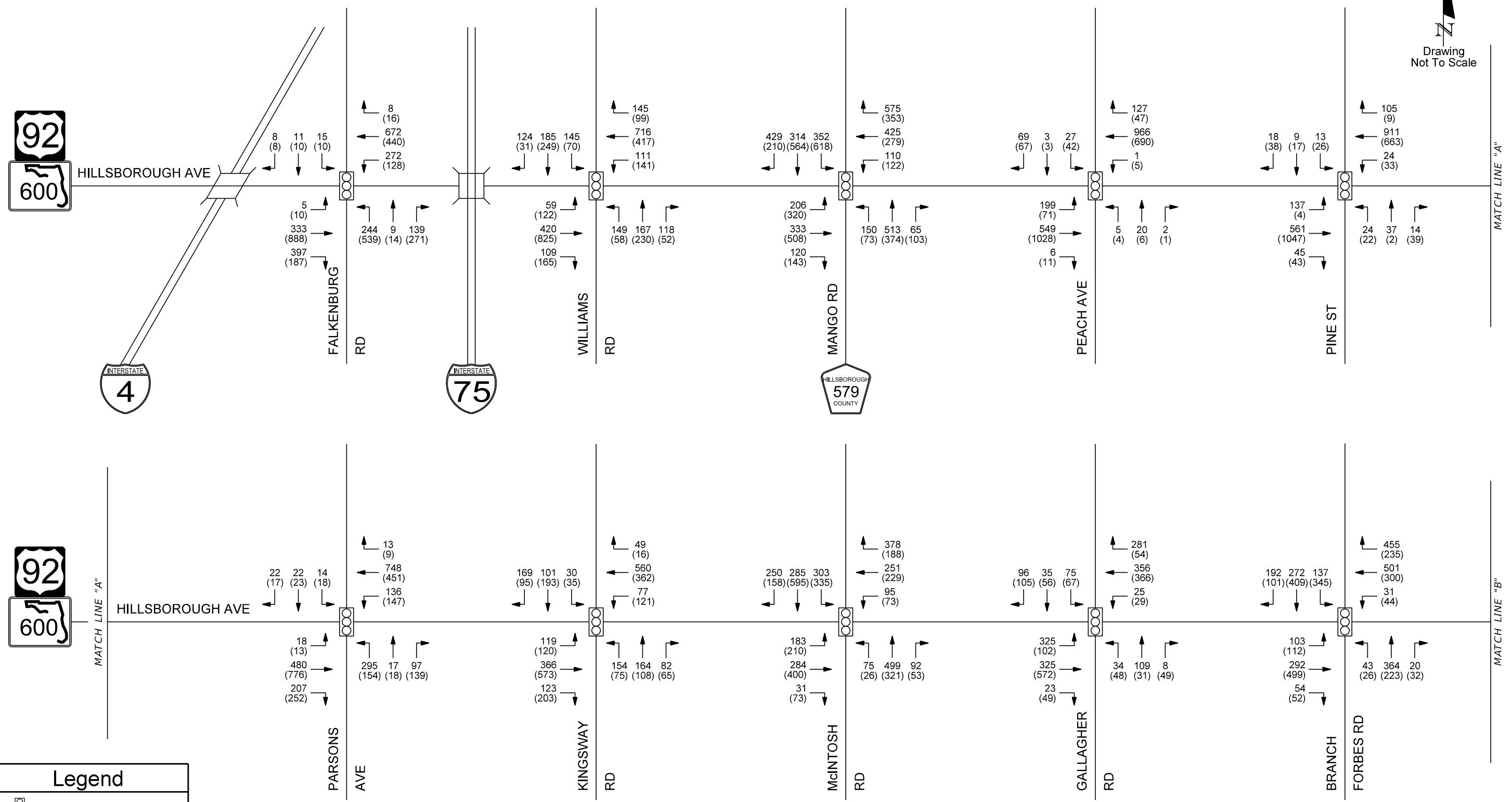
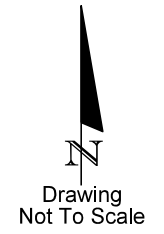


Legend

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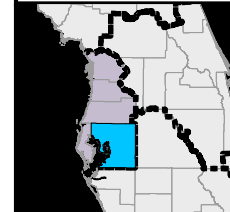
(1234) 2020 AADT
 {1234} 2030 AADT
 [1234] 2040 AADT

* AADTs from the Final Design Traffic Technical Memorandum for US 92 PD&E Study FPID: 433558-1-22-01



Legend

- TRAFFIC SIGNAL
- STOP SIGN (SIDE STREET ONLY)
- 1234 AM PEAK HOUR VOLUME
- (1234) PM PEAK HOUR VOLUME



Florida Department of Transportation
District 7

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**OPENING YEAR 2020 AM & PM
PEAK HOUR TRAFFIC VOLUMES (A)**

**Figure
5-9**



MATCH LINE "B"

HILLSBOROUGH AVE

293 (564)
256 (352)
472 (290) 136 (141)

TURKEY CREEK RD

515 (314)
161 (144)
20 (29) 25 (13) 38 (26)
38 (41)
631 (419)
41 (39)

WHITEHURST RD
WALTER DR

14 (29) 25 (34) 15 (10) 57 (31)
427 (622)
17 (55)



THONOTOSASSA RD
LEMON ST

50 (56) 109 (96) 655 (574)
100 (160) 347 (550) 53 (28)
804 (482)
535 (360)
54 (34)
50 (19) 102 (156) 23 (20)

BAKER ST

REYNOLDS ST

EXCEPTION AREA

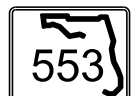
56 (31) 36 (29) 14 (28)

MARYLAND AVE

60 (125) 472 (776) 57 (73)
80 (46) 62 (66) 48 (49)
51 (57)
711 (650)
91 (64)

MATCH LINE "C"

Drawing Not To Scale



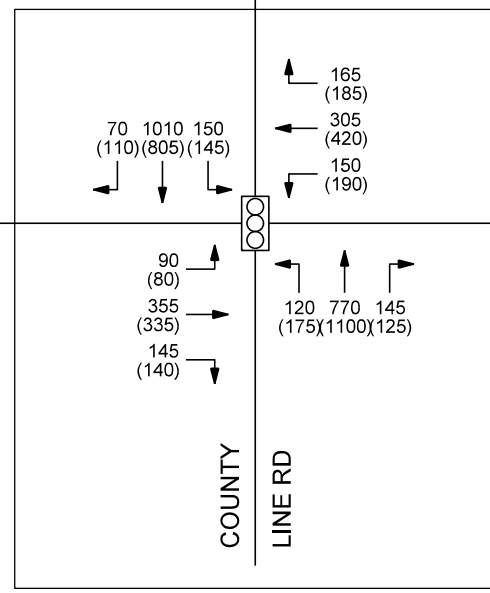
MATCH LINE "C"

HILLSBOROUGH AVE

220 (378) 893 (792) 87 (109)
100 (81) 434 (302) 349 (215)

PARK RD

183 (271) 277 (459) 117 (123)
150 (87) 859 (692) 201 (282)



70 (110) 1010 (805) 150 (145)
165 (185) 305 (420) 150 (190)

COUNTY LINE RD

90 (80) 355 (335) 145 (140)
120 (175) 770 (1100) 145 (125)

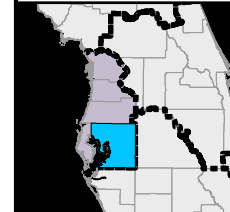
*



Legend

- TRAFFIC SIGNAL
- STOP SIGN (SIDE STREET ONLY)
- 1234 (1234) AM PEAK HOUR VOLUME (PM PEAK HOUR VOLUME)

* Traffic Volumes from the Final Design Traffic Technical Memorandum for US 92 PD&E Study FPID: 433558-1-22-01



Florida Department of Transportation
District 7

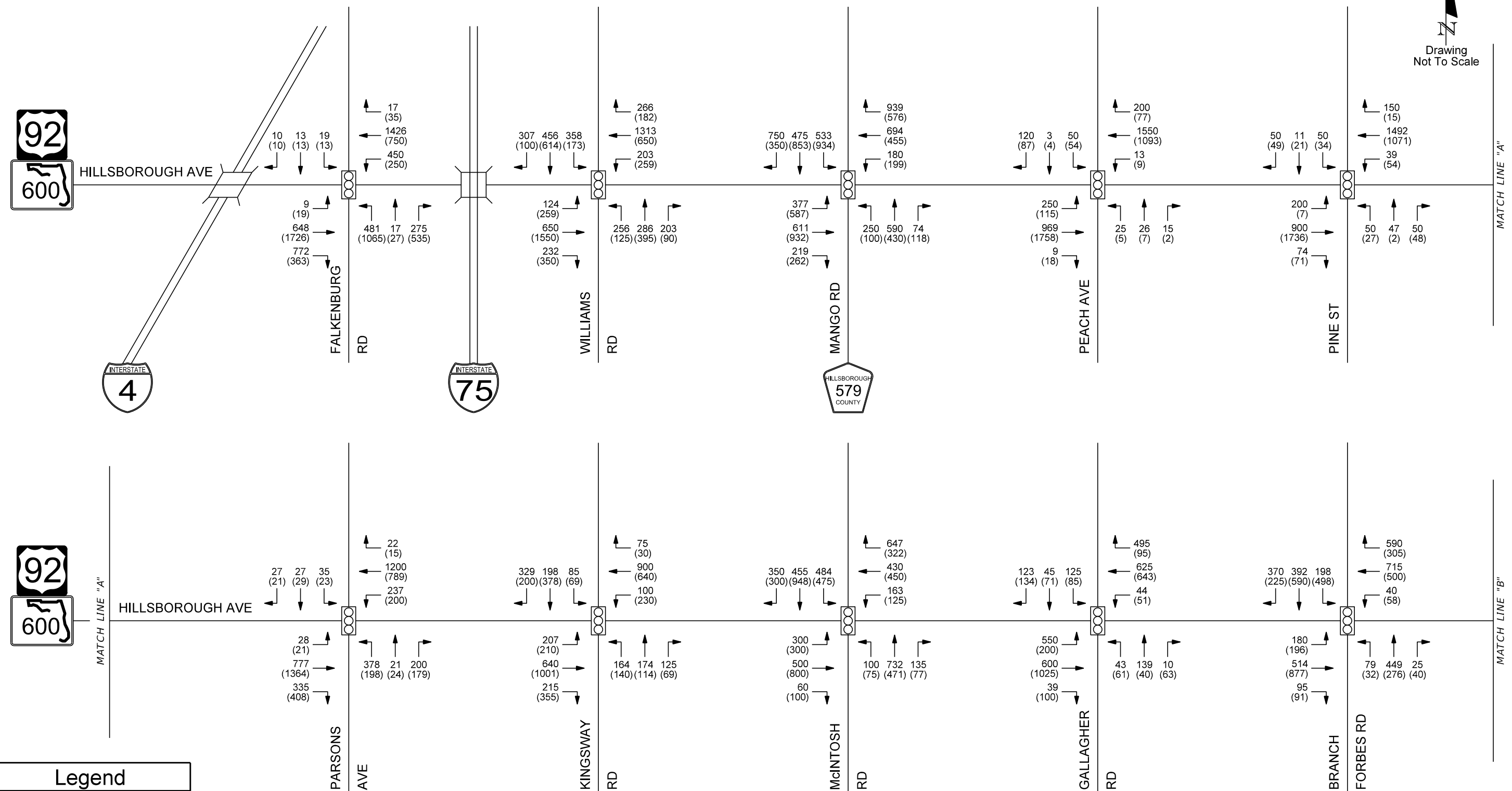
US 92 PD&E Study Re-evaluation
from East of I-4 to East of County Line Road
Hillsborough County, Florida

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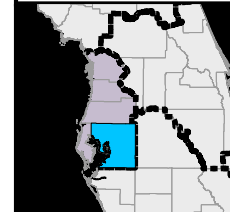
**OPENING YEAR 2020 AM & PM
PEAK HOUR TRAFFIC VOLUMES (B)**

Figure
5-10

Drawing
Not To Scale



Legend	
	TRAFFIC SIGNAL
	STOP SIGN (SIDE STREET ONLY)
1234	AM PEAK HOUR VOLUME
(1234)	(PM PEAK HOUR VOLUME)



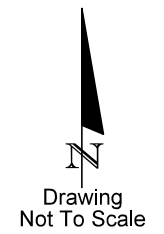
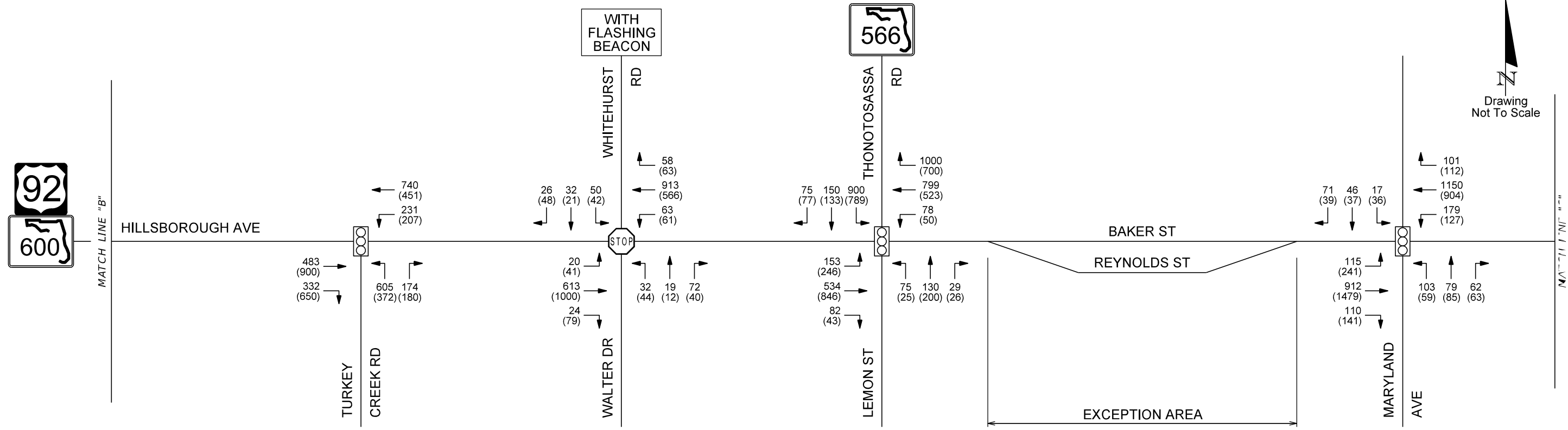
Florida Department
of Transportation
District 7

US 92 PD&E Study Re-evaluation
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Hillsborough County, Florida

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**DESIGN YEAR 2040 AM & PM
PEAK HOUR TRAFFIC VOLUMES (A)**

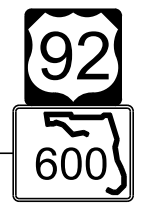
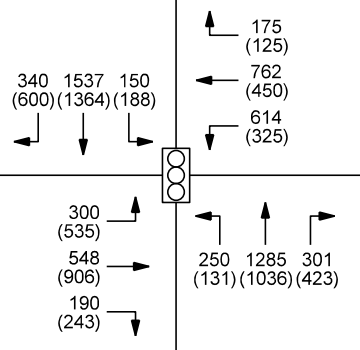
**Figure
5-11**



MATCH LINE "C"

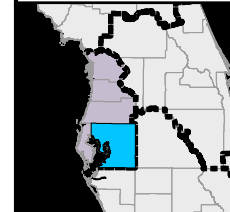


HILLSBOROUGH AVE



Legend	
	TRAFFIC SIGNAL
	STOP SIGN (SIDE STREET ONLY)
1234 (1234)	AM PEAK HOUR VOLUME (PM PEAK HOUR VOLUME)

* Traffic Volumes from the Final Design Traffic Technical Memorandum for US 92 PD&E Study FPID: 433558-1-22-01



Florida Department of Transportation
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**DESIGN YEAR 2040 AM & PM
PEAK HOUR TRAFFIC VOLUMES (B)**

**Figure
5-12**



HILLSBOROUGH AVE



1.03 MILES

1.03 MILES

0.34 MILES

0.17 MILES

FALKENBURG RD

WILLIAMS RD



MANGO RD

PEACH AVE

PINE ST

Drawing Not To Scale

MATCH LINE "A"

0.51 MILES

0.52 MILES

2.13 MILES

0.52 MILES

3.06 MILES



HILLSBOROUGH AVE

MATCH LINE "A"

PARSONS AVE

KINGSWAY RD






McINTOSH RD

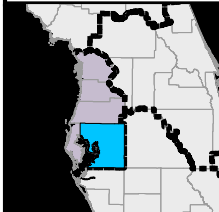
GALLAGHER RD

BRANCH FORBES RD

MATCH LINE "B"

Legend

-  TRAFFIC SIGNAL
-  STOP SIGN (SIDE STREET ONLY)
-  TRAVEL LANES
-  PROPOSED IMPROVEMENTS
-  DISTANCE IN MILES (APPROX.)



Florida Department of Transportation
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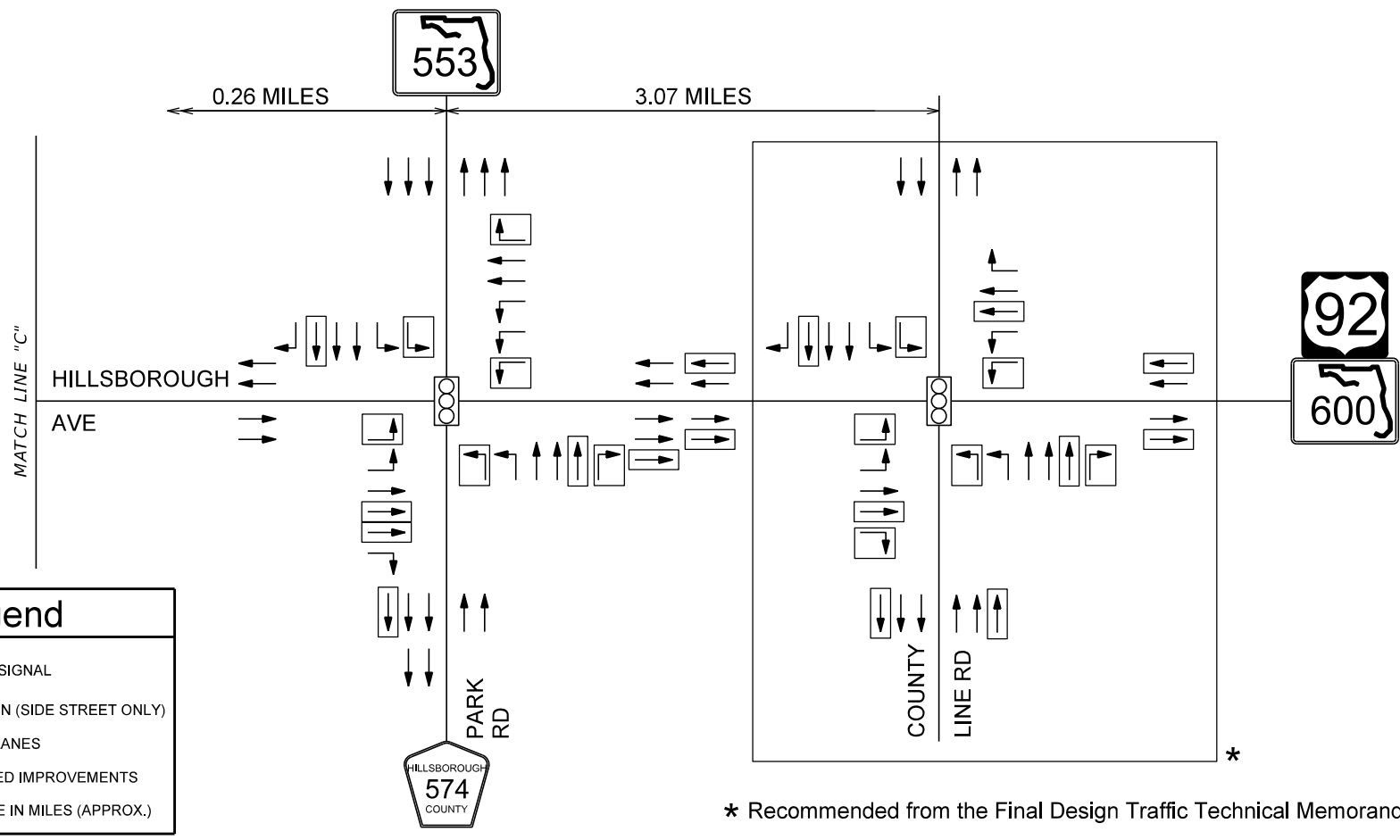
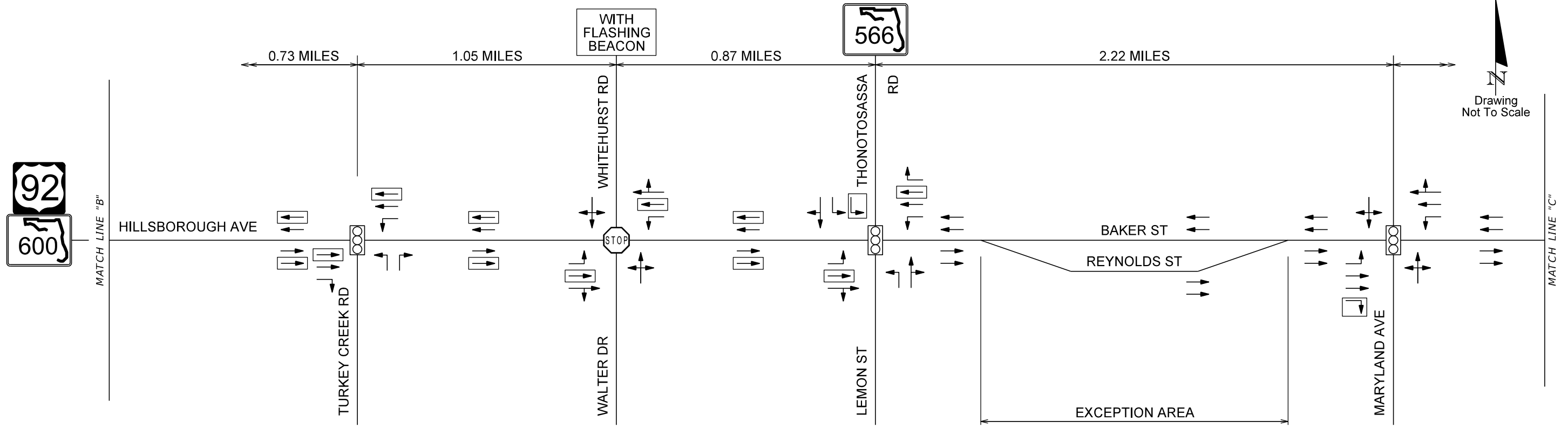
US 92 PD&E Study Re-evaluation

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Hillsborough County, Florida

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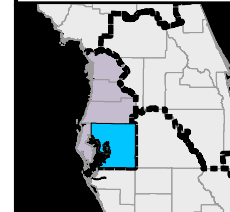
PROPOSED BUILD LANE GEOMETRY US 92 - EAST OF I-4 TO BRANCH FORBES ROAD

Figure
5-13



Legend	
	TRAFFIC SIGNAL
	STOP SIGN (SIDE STREET ONLY)
	TRAVEL LANES
	PROPOSED IMPROVEMENTS
	DISTANCE IN MILES (APPROX.)

* Recommended from the Final Design Traffic Technical Memorandum for US 92 PD&E Study FPID: 433558-1-22-01



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PROPOSED BUILD LANE GEOMETRY
US 92 - TURKEY CREEK ROAD TO COUNTY LINE ROAD

Figure
5-14

**Table 5-17
Design Year 2040 Recommended Queue Length Estimates–Build Alternative**

US 92 Intersections	Approach	Movement	Recommended Turn Lane Length (ft.) ²
Falkenburg Road	Eastbound	Left	700 ⁽¹⁾
		Right	700 ⁽¹⁾
	Westbound	Left	725 ⁽¹⁾
		Thru-Right	
	Northbound	Left	750
		Right	800
	Southbound	Left	200
Thru-Right			
Williams Road	Eastbound	Left	750 ⁽¹⁾
		Right	750 ⁽¹⁾
	Westbound	Left	600 ⁽¹⁾
		Right	600 ⁽¹⁾
	Northbound	Left	475
		Right	425
Southbound	Left	575	
	Right	550	
Mango Road	Eastbound	Left	700
		Right	575
	Westbound	Left	500
		Right	575
	Northbound	Left	450
		Right	450
Southbound	Left	900	
	Right	625	
Peach Avenue	Eastbound	Left	425 ⁽¹⁾
		Thru-Right	
	Westbound	Left	550 ⁽¹⁾
		Right	550 ⁽¹⁾
	Northbound	Left-Thru-Right	
	Southbound	Left-Thru	
Right		300	

(1) Based on thru lane queue as thru lane queue exceeds storage length for turn lanes.

(2) Side street que lengths are shown for informational purposes only. As part of this PD&E study, only improvement along US 92 are anticipated.

US 92 Intersections	Approach	Movement	Recommended Turn Lane Length (ft.)
Pine Street	Eastbound	Left	525
		Thru-Right	
	Westbound	Left	625 ⁽¹⁾
		Right	625 ⁽¹⁾
	Northbound	Left	250
		Thru-Right	
Southbound	Left	250	
	Thru-Right		
Parsons Avenue	Eastbound	Left	825 ⁽¹⁾
		Right	825 ⁽¹⁾
	Westbound	Left	375
		Thru-Right	
	Northbound	Left	700
		Thru-Right	
Southbound	Left-Thru-Right		
Kingsway Road	Eastbound	Left	425 ⁽¹⁾
		Right	450
	Westbound	Left	475 ⁽¹⁾
		Thru-Right	
	Northbound	Left	350
		Thru-Right	
Southbound	Left	375 ⁽¹⁾	
	Right	475	
McIntosh Road	Eastbound	Left	575
		Thru-Right	
	Westbound	Left	500
		Right	525
	Northbound	Left	450 ⁽¹⁾
		Right	450 ⁽¹⁾
Southbound	Left	700	
	Right	650 ⁽¹⁾	

⁽¹⁾ Based on thru lane queue as thru lane queue exceeds storage length for turn lanes.

US 92 Intersections	Approach	Movement	Recommended Turn Lane Length (ft.)
Gallagher Road	Eastbound	Left	675
		Right	550 ⁽¹⁾
	Westbound	Left	550 ⁽¹⁾
		Right	800
	Northbound	Left-Thru-Right	
	Southbound	Left	325
Thru-Right			
Branch Forbes Road	Eastbound	Left	550 ⁽¹⁾
		Thru-Right	
	Westbound	Left	325 ⁽¹⁾
		Right	650
	Northbound	Left	450 ⁽¹⁾
		Thru-Right	
Southbound	Left	550 ⁽¹⁾	
	Right	550 ⁽¹⁾	
Turkey Creek Road	Eastbound	Thru	
		Right	250
	Westbound	Left	400
		Thru	
	Northbound	Left	700
Right		425	
Whitehurst Road/ Walter Drive (un-signalized)*	Eastbound	Left	300
		Right	350
	Westbound	Left	350
		Right	350
	Northbound	Left-Thru-Right	
Southbound	Left-Thru-Right		

* For un-signalized intersection, turn lane lengths along US 92 estimated from Figure 3-13 Florida Greenbook, May 2013.

⁽¹⁾ Based on thru lane queue as thru lane queue exceeds storage length for turn lanes.

US 92 Intersections	Approach	Movement	Recommended Turn Lane Length (ft.)
Thonotosassa Road/ Lemon Street	Eastbound	Left	450 ⁽¹⁾
		Thru-Right	
	Westbound	Left	475 ⁽¹⁾
		Right	1375
	Northbound	Left	300
		Thru-Right	
Southbound	Left	850	
	Thru-Right		
Maryland Avenue	Eastbound	Left	425 ⁽¹⁾
		Right	425 ⁽¹⁾
	Westbound	Left	400 ⁽¹⁾
		Thru-Right	
	Northbound	Left-Thru-Right	
	Southbound	Left-Thru-Right	
SR 553/Park Road	Eastbound	Left	525
		Right	425
	Westbound	Left	575
		Right	450 ⁽¹⁾
	Northbound	Left	475 ⁽¹⁾
		Right	650
Southbound	Left	600 ⁽¹⁾	
	Right	800	
County Line Road	Eastbound	Left	575 ⁽¹⁾
		Right	775
	Westbound	Left	550
		Right	425
	Northbound	Left	575
		Thru-Right	
Southbound	Left	650 ⁽¹⁾	
	Right	650 ⁽¹⁾	

⁽¹⁾Based on thru lane queue as thru lane queue exceeds storage length for turn lanes.

5.3.14 Design Exceptions/Variations

A design variation will be required for the border width in Segment 11 from Park Road to County Line Road. The border width design criterion is 29 feet for 50 mph design speed (PPM Table 2.5.2, PPM Section 2.16.7) and 24 feet is being provided.

5.4 Public Involvement Summary

A plan for the Public Involvement Program (PIP) was developed for this reevaluation to document the various outreach opportunities available for property owners, public officials, agencies, and other stakeholders and interested parties. The PIP included the requirement to submit an Advance Notification (AN) Package, distribute several newsletters, and hold a public hearing. The results of the entire program are summarized in a Final Comments and Coordination Report prepared for this study.

Although a public workshop was not held, several small group presentations were given to various agencies/groups as listed in Table 5-18. Minutes of these meetings are available in the Final Comments and Coordination Report.

**Table 5-18
Small Group Meetings**

Date	Agency/Group	Meeting/Presentation Purpose
4/14/2016	Seffner Chamber of Commerce	General Project Information
6/30/2016	City of Plant City	General Project Information, planned development discussion, bike plan, Parkesdale Farm market.
7/1/2016	Hillsborough County	General Project Information and Park Road Intersection
8/3/2016	Strawberry Festival	General Project Information and Festival Parking Discussion
10/17/2016	Plant City EDC	General Project Information

A public hearing was held in two sessions at two different locations. The hearing was held to inform citizens and interested parties about the project details, recommended alternative and schedule, and allow them the opportunity to provide comments concerning the proposed improvements. The first session was held on December 1, 2016 from 5:30 p.m. to 7:30 p.m. at the Hillsborough Community College Trinkle Center in Plant City. A total of 144 people signed in at this session. Seven citizens spoke during the formal hearing, and 17 comments were submitted during this session. Most attendees at the first session were interested in when construction will begin and the ROW acquisition process, several attendees expressed concern with various segments of the project, and two attendees expressed a strong opinion against the project. Most of the comments pertained to being added to the contact list and access management concerns.

The second session was held on December 6, 2016 from 6:00 p.m. to 8:00 p.m. at the Sheraton Tampa East Hotel in Tampa. A total of 95 people signed in at the session. Nobody spoke during the formal hearing, and 17 comments were submitted during this session. Most attendees at the second session

were supportive of the project, several attendees were interested in the ROW acquisition process and when construction would begin, one was concerned with his property and submitted a formal comment.

The public hearing transcript from both hearing sessions is included in the Final Comments and Coordination Report. The Final Comments and Coordination Report also contains copies of the written comments and responses. In addition, copies of all public hearing displays and presentation materials are included in the Public Hearing Scrapbook prepared for this study.

5.5 Evaluation Matrix

In order to compare the US 92 widening alternatives, the costs and impacts of each alternative were determined and documented in a comparative evaluation matrix. This evaluation matrix is included as Table 5-19.

5.6 Preferred Build Alternative

Based on a comparative evaluation of the Build Alternative impacts and ability to meet the purpose and need for this project as well as public input and agency coordination to date, the preferred build alternative for each of the 11 segments has been determined as described below. All of the preferred build typical sections discussed below have been revised and updated from the original PD&E Study based on new design criteria and standards. The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix B. The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix A.

Segment 1 from east of I-4 (Garden Lane) to west of Mango Road

From Garden Lane to west of I-75 and from just east of I-75 to west of Mango Road, the preferred build typical section is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 17-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks and a five-foot additional width to provide for slope embankment connection to the existing grade at the edge of the road right-way. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 1 is shown in Figure 5-2.

From just west of I-75 to just east of I-75, the preferred build typical section is constrained by the piers for I-75. The preferred build typical section under I-75 is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 40-foot six-inch median with eight-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. This typical section complies with the FDOT minimum design speed of 45 mph. This preferred build typical section is shown in Figure 5-3.

Table 5-19 US 92 Alternatives Evaluation Matrix

US 92 Evaluation Matrix																				
From I-4 to County Line Road																				
Evaluation Criteria	1994 PD&E Preferred Alignment	Segment 1	Segment 2			Segment 3	Segment 4			Segment 5	Segment 6			Segment 7	Segment 8			Segment 9	Segment 10	Segment 11
		From east of I-4 (Garden Lane to west of CR 579)	from west of CR 579 to east CR 579			from east of CR 579 to North Parsons Avenue	from North Parsons Avenue to east of Crow Wing Drive			from east of Crow Wing Drive to Castlewood Road	from Castlewood Road to west of Gallagher Road			from west of Gallagher Road to Lynn Oaks Circle	from Lynn Oaks Circle to east of Bethlehem Road			from east of Bethlehem Road to Mobley Street	from Mobley Street to Park Road	from Park Road to just east of County Line Road
		Original PD&E Study Alignment North - South	North	Centered (Original PD&E Study Alignment)	South	Original PD&E Study Alignment - South	North (Original PD&E Study Alignment)	South	Original PD&E Study Alignment - North	North (Original PD&E Study Alignment)	South	Original PD&E Study Alignment - South	North	Centered (Original PD&E Study Alignment)	South	Original PD&E Study Alignment South - North	No-Build (Original PD&E Study Alignment)	Original PD&E Study Alignment - North		
Business Impacts																				
Number of Businesses Relocations ¹	50	28	5	4	5	9	2	2	1	2	4	2	2	2	0	39	0	25		
Residential Impacts																				
Number of Residential Relocations ¹	91	18	2	2	2	0	25	15	7	3	3	7	16	15	28	27	0	56		
Potential Environmental Effects																				
Archaeological/Historical Sites	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1		
Noise ²	244	26	0	0	0	10	1	1	19	5	5	10	11	11	11	33	0	21		
Wetlands (acres)	21.98	0.68	0	0	0	0	1.28	1.38	0.14	1.28	0.28	0	2.19	2.09	1.5	6.7	0	0.16		
Floodplains (acre feet)	5.41	1.29	0	0	0	0	0	0	15.69	1.42	1.42	0.72	6.52	6.52	6.52	31.63	0	0		
Threatened and Endangered Species	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	0	Low		
Contamination Sites (high/medium)	43	14	1	2	2	5	1	1	1	2	2	1	1	1	1	7	0	17		
Right-of-Way Needs																				
Right-of-Way to be Acquired for Roadway Improvements (ac.)	137.5	15.1	5.1	4.5	5.4	4.6	10.3	10.4	9.6	9	8.5	11.1	14	13.6	13.1	32.1	0	33.8		
Right-of-Way to be Acquired for Stormwater Facilities (ac.)		15.4	0	0	0	1.2	1.7	1.7	8.66	4.8	4.8	1.5	1.8	1.8	1.8	13.4	0	7.3		
Right-of-Way to be Acquired for Floodplain Compensation (ac.)		1.4	0	0	0	0	0	0	0	15.7	1.4	1.4	0.7	6.5	6.5	6.5	31.6	0	0	
Estimated Total Project Costs (2015 Cost)																				
Design ³	\$2,410,000	\$1,645,000	\$546,000	\$546,000	\$546,000	\$504,000	\$987,000	\$987,000	\$648,000	\$619,000	\$619,000	\$864,000	\$1,037,000	\$1,037,000	\$1,037,000	\$4,491,000	\$0	\$2,534,000		
Wetland Mitigation ⁴	N/A	\$102,000	\$0	\$0	\$0	\$0	\$192,000	\$207,000	\$21,000	\$192,000	\$42,000	\$0	\$329,000	\$314,000	\$225,000	\$1,005,000	\$0	\$24,000		
Road Right of Way	\$52,740,000	\$28,906,000	\$10,118,000	\$11,217,000	\$8,817,000	\$6,969,000	\$10,781,000	\$10,786,000	\$3,163,000	\$8,964,000	\$8,863,000	\$11,207,000	\$16,295,000	\$17,495,000	\$16,129,000	\$41,954,000	\$0	\$41,193,000		
SMF and FPC Right of Way		\$5,612,000	\$2,586,000	\$2,586,000	\$2,586,000	\$493,000	\$1,066,000	\$1,066,000	\$8,218,000	\$1,610,000	\$1,610,000	\$1,597,000	\$4,477,000	\$4,477,000	\$4,477,000	\$19,351,000	\$0	\$5,230,000		
Roadway Construction	\$23,990,000	\$16,450,000	\$5,460,000	\$5,460,000	\$5,460,000	\$5,040,000	\$9,870,000	\$9,870,000	\$6,480,000	\$6,192,000	\$6,192,000	\$8,640,000	\$10,368,000	\$10,368,000	\$10,368,000	\$44,910,000	\$0	\$25,344,000		
Construction Engineering & Inspection ⁵	\$2,410,000	\$1,645,000	\$546,000	\$546,000	\$546,000	\$504,000	\$987,000	\$987,000	\$648,000	\$619,000	\$619,000	\$864,000	\$1,037,000	\$1,037,000	\$1,037,000	\$4,491,000	\$0	\$2,534,000		
Preliminary Estimate of Total Project Cost (2015 Cost)																				
	\$81,550,000	\$54,360,000	\$19,256,000	\$20,355,000	\$17,955,000	\$13,510,000	\$23,883,000	\$23,903,000	\$19,178,000	\$18,196,000	\$17,945,000	\$23,172,000	\$33,543,000	\$34,728,000	\$33,273,000	\$116,202,000	\$0	\$76,859,000		

1. Includes relocations for roadway and drainage improvements.
 2. Number of noise sensitive sites that meet or exceed FHWA NAC.
 3. Design cost is estimated at 10% of the total construction cost.
 4. Mitigation Costs are estimated based on \$150,000 per acre of impacted wetlands. Final mitigation costs will be determined through consultation with environmental agencies.
 5. Construction Engineering & Inspection Costs are estimated at 10% of the total construction cost.

Recommended Build Alternative

The preferred build alignment for Segment 1 from Garden Lane to west of Mango Road follows the preferred alignment from the original PD&E Study. From Garden Lane to Falkenburg Road, the preferred build alignment is a north alignment with right-of-way to be acquired from the north side of the roadway. From Falkenburg Road to just west of Mango Road, the alignment shifts to a south alignment with right-of-way to be acquired from the south side of the roadway.

Segment 2 from west of Mango Road to east Mango Road

The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2.

The preferred alignment from the original PD&E Study in this segment was a centered alignment. North, center and south alignments were evaluated due to additional development which has occurred in the vicinity of the Mango Rd intersection. The preferred build alignment for Segment 2 from west of Mango Road to east Mango Road is the north alignment. This alignment was selected to minimize impacts to the Seffner Christian Academy in the southwest quadrant of the US 92 and Mango Road intersection, and to minimize impacts to the Hardees Restaurant in the southeast quadrant of the intersection. This alignment begins as a south alignment adjacent to Segment 1 and then transitions to the north side of US 92 through the intersection, and then transitions to a south alignment at the beginning of Segment 3.

Segment 3 from east of Mango Road to North Parsons Avenue

The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2.

The preferred build alignment for Segment 3 from east of Mango Road to North Parsons Avenue follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 4 from North Parsons Avenue to east of Crow Wing Drive

The preferred build typical section for this segment is the same as for the major portion of Segment 1 (exclusive of the portion from just west of I-75 to just east of I-75) and is shown in Figure 5-2.

North, south, and center alignments were evaluated due to additional developments which have occurred on the north side of the road. The preferred build alignment for Segment 4 follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 5 from east of Crow Wing Drive to Castlewood Road

The preferred build typical section for this segment is a high speed suburban roadway with two 12-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 54-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 29-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both

sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The preferred build typical section for Segment 5 is shown in Figure 5-4.

The preferred build alignment for Segment 5 from east of Crow Wing Drive to Castlewood Road follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 6 from Castlewood Road to west of Gallagher Road

The preferred build typical section for this segment is the same as for Segment 5 and is shown in Figure 5-4.

The preferred alignment from the original PD&E Study alignment in this segment was a north alignment. North, center, and south alignments were evaluated due to additional developments which have occurred near McIntosh Road. The preferred build alignment for Segment 6 from Castlewood Road to west of Gallagher Road is the south alignment. The south alignment was selected because the estimated cost estimate is less than the north alignment and to minimize impacts to Driscoll's of Florida and Independence Academy.

Segment 7 from west of Gallagher Road to Lynn Oaks Circle

The preferred build typical section for Segment 7 is the same as for Segment 5 and is shown in Figure 5-4.

The preferred a build lignment for Segment 7 from west of Gallagher Road to Lynn Oaks Circle follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 8 from Lynn Oaks Circle to east of Bethlehem Road

The preferred t build ytical section for Segment 8 is the same as for Segment 5 and is shown in Figure 5-4.

North, center, and south alignments were evaluated due to a reduction in the proposed typical section width. The preferred build alignment for Segment 8 from Lynn Oaks Circle to east of Bethlehem Road follows the preferred alignment from the original PD&E Study and is a centered alignment.

Segment 9 from east of Bethlehem Road to Mobley Street

Segment 9 was further divided into several portions. The preferred build typical section for the portion of Segment 9 from east of Bethlehem Road to Edwards Street is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build typical section for the portion of Segment 9 from Edwards Street to Mobley Street is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 22-foot median. Type E curb and gutter is along the inside and Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then

conveyed to stormwater retention ponds. A minimum 12-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 9 from Edwards Street to Mobley Street is shown in Figure 5-5.

The preferred build alignment for Segment 9 from east of Bethlehem Road to Woodrow Wilson follows the preferred alignment from the original PD&E Study and is a south alignment from east of Bethlehem Road to Turkey Creek Road and then transitions to a north alignment from Turkey Creek Road to Woodrow Wilson Street. From Woodrow Wilson Street to Mobley Street, the preferred build alignment is a centered alignment due to geometric constraints at the Thonotosassa Road intersection and the Baker Street (US 92) intersection.

Segment 10 from Mobley Street to Park Road

The preferred alternative for this segment from the original 1994 PD&E Study is No-Build with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted from a rural to urban roadway in order to provide sidewalks. Improvements have been completed in this section of the roadway which meet the intent of the original 1994 PD&E Study recommendation for this segment of the project. Due to the addition of turn lanes at the Park Road intersection, a transitional widening is required from Maryland Avenue to Park Road. From Mobley Street to Maryland Avenue, the preferred alternative for this segment is the No-Build Alternative. From Maryland Avenue to Park Road, the preferred build alternative is a transitional widening.

Segment 11 from Park Road to just east of County Line Road

The preferred build typical section for Segment 11 consists of two 12-foot travel lanes, a five-foot sidewalk, and a seven-foot buffered bike lane in each direction separated by a 40-foot median with eight-foot inside shoulders with a design speed of 50 mph and is shown in Figure 5-6. A 24-foot border and a 24-foot clear zone are provided along both sides of the roadway. This four-lane typical section requires a minimum of 136 feet of right-of-way. A design variation would be required for border width. The typical section complies with clear zone criteria so no design variation or exception would be required for clear zone.

The preferred build alignment for Segment 11 from Park Road to County Line Road follows the preferred alignment from the original PD&E Study and is a north alignment.

Section 6.0

Design Details of the Preferred Build Alternative

6.1 Typical Sections and Alignments

The project was divided into evaluation segments based on changes in land use and the recommended typical section in comparison with the land use and typical sections from the original PD&E Study. The evaluation segment limits are shown in Figure 1-2. The preferred build typical sections, the alignment alternatives considered (where applicable), and the preferred build alignment for each segment are described below. All of the preferred build typical sections discussed below have been revised and updated from the original PD&E Study based on new design criteria and standards. The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix B. The original PD&E Study preferred typical sections and alignment concept plans are contained in Appendix A.

Segment 1 from east of I-4 (Garden Lane) to west of Mango Road

From Garden Lane to west of I-75 and from just east of I-75 to west of Mango Road, the preferred build typical section is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 17-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks and a five-foot additional width to provide for slope embankment connection to the existing grade at the edge of the road right-way. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 1 is shown in Figure 5-2.

From just west of I-75 to just east of I-75, the preferred build typical section is constrained by the piers for I-75. The typical section is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 40.5-foot median with eight-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. This typical section complies with the FDOT minimum design speed of 45 mph but would require a design variation if the roadway is expanded to six lanes in the future. This preferred build typical section is shown in Figure 5-3.

The preferred build alignment for Segment 1 from Garden Lane to west of Mango Road follows the preferred alignment from the original PD&E Study. From Garden Lane to Falkenburg Road, the preferred build alignment is a north alignment with right-of-way to be acquired from the north side of the roadway. From Falkenburg Road to just west of Mango Road, the alignment shifts to a south alignment with right-of-way to be acquired from the south side of the roadway.

Segment 2 from west Mango Road to east Mango Road

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred alignment from the original PD&E Study alignment in this segment was a centered alignment. The preferred build alignment for Segment 2 from west of Mango Road to east Mango Road is the north alignment. This alignment was selected to minimize impacts to the Seffner Christian Academy in the southwest quadrant of the US 92 and Mango Road intersection, and to minimize impacts to the Hardees Restaurant in the southeast quadrant of the intersection. The alignment is a south alignment adjacent to Segment 1 and then transitions to the north side of US 92 through the intersection, and then transitions to a south alignment at the beginning of Segment 3.

Segment 3 from east of Mango Road to North Parsons Avenue

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred build alignment for Segment 3 from east of Mango Road to North Parsons Avenue follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 4 from North Parsons Avenue to east of Crow Wing Drive

The preferred build typical section for this segment is the same as for the major portion of Segment 1 and is shown in Figure 5-2.

The preferred build alignment for Segment 4 follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 5 from east of Crow Wing Drive to Castlewood Road

The preferred build typical section for this segment is a high speed suburban roadway with two 12-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 54-foot median with eight-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A 29-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The preferred build typical section for Segment 5 is shown in Figure 5-4.

The preferred build alignment for Segment 5 from east of Crow Wing Drive to Castlewood Road follows the preferred alignment from the original PD&E Study and is a north alignment.

Segment 6 from Castlewood Road to west of Gallagher Road

The preferred build typical section for this segment is the same as for Segment 5 and is shown in Figure 5-4.

The preferred alignment from the original PD&E Study alignment in this segment was a north alignment. The preferred build alignment for Segment 6 from Castlewood Road to west of Gallagher Road is the south alignment. The south alignment was selected because the estimated cost estimate is less than the north alignment and to minimize impacts to Driscoll's of Florida and Independence Academy.

Segment 7 from west of Gallagher Road to Lynn Oaks Circle

The preferred build typical section for Segment 7 is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build alignment for Segment 7 from west of Gallagher Road to Lynn Oaks Circle follows the preferred alignment from the original PD&E Study and is a south alignment.

Segment 8 from Lynn Oaks Circle to east of Bethlehem Road

The preferred build typical section for Segment 8 is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build alignment for Segment 8 from Lynn Oaks Circle to east of Bethlehem Road follows the preferred alignment from the original PD&E Study and is a centered alignment.

Segment 9 from east of Bethlehem Road to Mobley Street

The preferred build typical section for the portion of Segment 9 from east of Bethlehem Road to Edwards Street is the same as for Segment 5 and is shown in Figure 5-4.

The preferred build typical section for portion of Segment 9 from Edwards Street to Thonotosassa Road is an urban roadway with two 11-foot travel lanes and a seven-foot buffered bike lane in each direction. The travel lanes are separated by a 22-foot median. Type E curb and gutter is along the inside and Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater retention ponds. A minimum 12-foot border is provided along both sides of the roadway and accommodates five-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The preferred build typical section for Segment 9 from Edwards Street to Mobley Street is shown in Figure 5-5.

The preferred build alignment for Segment 9 from east of Bethlehem Road to Mobley Street follows the preferred alignment from the original PD&E Study and is a south alignment from east of Bethlehem Road to Turkey Creek Road and then transitions to a north alignment from Turkey Creek Road to Woodrow Wilson Street. From Woodrow Wilson Street to Mobley Street, the preferred build alignment

is a centered alignment due to geometric constraints at the Thonotosassa Road intersection and the Baker Street (US 92) intersection.

The preferred build improvements from Thonotosassa Road to Mobley Street are operational improvements consisting of restriping, turn lane, curb and gutter, and pedestrian and bicycle features. Additional right-of-way would be acquired from the north and south side of the roadway.

Segment 10 from Mobley Street to Park Road

The preferred alternative for this segment from the original 1994 PD&E Study is No-Build with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted from a rural to urban roadway in order to provide sidewalks. Improvements have been completed in this section of the roadway which meet the intent of the original 1994 PD&E Study recommendation for this segment of the project. Due to the addition of turn lanes at the Park Road intersection, a transitional widening is required from Maryland Avenue to Park Road. From Mobley Street to Maryland Avenue, the preferred build alternative for this segment is the No-Build Alternative. From Maryland Avenue to Park Road, the preferred build alternative is a transitional widening.

Segment 11 from Park Road to just east of County Line Road

The preferred build typical section for Segment 11 consists of two 12-foot travel lanes, a five-foot sidewalk, and a seven-foot buffered bike lane in each direction separated by a 40-foot median with eight-foot inside shoulders with a design speed of 50 mph and is shown in Figure 5-6. A 24-foot border and a 24-foot clear zone are provided along both sides of the roadway. This four-lane typical section requires a minimum of 136 feet of right-of-way. A design variation would be required for border width. The typical section complies with clear zone criteria so no design variation or exception would be required for clear zone.

The preferred build alignment for Segment 11 from Park Road to County Line Road follows the preferred alignment from the original PD&E Study and is a north alignment.

6.2 Intersection Concepts and Signal Analysis

The proposed intersection geometry was discussed in Section 5.4.13 of this report and shown in Figures 5-13 and 5-14. The preliminary concept plans located in Appendix B show the proposed intersection geometry for the project.

6.3 Design Traffic Volume

Based on the growth projected to occur within the corridor, US 92 is projected by the Tampa Bay Regional Planning Model (TBRPM Version 8.0) – Cost Feasible Network to have future traffic volumes ranging from approximately 13,800 vehicles to 40,950 vehicles per day within the project limits by year 2040, which would yield an LOS F for the corridor with the current roadway configuration except for the four-lane section from Mobley Street through the downtown Plant City area to east of Park Road which

will remain acceptable LOS. The acceptable LOS standard for the study corridor of US 92 in the urbanized area within the project limits is LOS D based on the planning boundaries for LOS standards for Hillsborough County and Page 123 of the 2013 FDOT Quality/Level of Service Handbook. The projected volumes would exceed roadway capacity at the adopted standards of LOS for US 92 within the project limits per FDOT; therefore, widening of US 92 needs to be evaluated in order to meet future transportation demand at these potential volumes.

6.4 Right-of-Way and Relocations

The existing right-of-way width varies along the corridor but is typically 80 feet in width. The right-of-way width for US 92 from Garden Lane to approximately 1,200 feet east of Garden Lane transitions from 120 feet to 80 feet in width. It remains 80 feet in width through most of the remainder of the Build portion of the corridor except where intersection improvements have been made or where developments have been constructed. Right-of-way will need to be acquired for the Preferred Build Alternative in segments 1 through 9 and segment 11. The anticipated right-of-way acquisition for US 92 within the Build segments of the project limits is shown in the preliminary concept plans located in Appendix B.

A total of 160 residences have been identified as potentially being impacted due to implementing the Preferred Build Alternative. However, the potential construction of this Alternative is not expected to subdivide neighborhoods, negatively impact residential neighborhood identity, or separate residences from community facilities, such as places of worship, schools, shopping areas, or civic or cultural facilities.

A total of 117 potentially displaced businesses have been identified along the Preferred Build Alternative. These business relocations are not expected to impact the economy of the adjacent communities.

While construction of the Preferred Build Alternative will affect numerous residences and businesses along the project corridor, it is not expected to subdivide neighborhoods, negatively impact residential neighborhood identity, separate residences from community facilities, such as places of worship, schools, shopping areas, or civic or cultural facilities. Business relocations are not expected to impact the economy of the adjacent communities. The relocations are not expected to disproportionately affect or contribute to social isolation of any special populations of elderly, handicapped, minority, or transient dependents.

6.5 Cost Estimates

Construction costs were estimated using the FDOT Long Range Estimate (LRE) program. Table 6-1 shows the estimated costs for the Preferred Build Alternative.

**Table 6-1
Preferred Build Alternative Estimated Costs**

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8	Segment 9	Segment 10⁽⁵⁾	Segment 11
Design ¹	\$1,645,000	\$546,000	\$504,000	\$987,000	\$648,000	\$619,000	\$864,000	\$1,037,000	\$4,491,000	\$0	\$2,534,000
Wetland Mitigation ²	\$102,000	\$0	\$0	\$192,000	\$21,000	\$42,000	\$0	\$314,000	\$1,005,000	\$0	\$24,000
Roadway Right-of-Way	\$28,906,000	\$10,118,000	\$6,969,000	\$10,781,000	\$3,163,000	\$8,863,000	\$11,207,000	\$17,495,000	\$41,954,000	\$0	\$41,193,000
SMF and FPC Right-of-Way ³	\$5,612,000	\$2,586,000	\$493,000	\$1,066,000	\$8,218,000	\$1,610,000	\$1,597,000	\$4,477,000	\$19,351,000	\$0	\$5,230,000
Roadway Construction	\$16,450,000	\$5,460,000	\$5,040,000	\$9,870,000	\$6,480,000	\$6,192,000	\$8,640,000	\$10,368,000	\$44,910,000	\$0	\$25,344,000
Construction Engineering & Inspection ⁴	\$1,645,000	\$546,000	\$504,000	\$987,000	\$648,000	\$619,000	\$864,000	\$1,037,000	\$4,491,000	\$0	\$2,534,000
Total	\$54,360,000	\$19,256,000	\$13,510,000	\$23,883,000	\$19,178,000	\$17,945,000	\$23,172,000	\$34,728,000	\$116,202,000	\$0	\$76,859,000

Notes: Construction costs were estimated using the FDOT Long Range Estimate (LRE) program for the year 2016 and based on preliminary concept plans located in Appendix A. Total values are rounded.

1. Design cost is estimated at 10% of the total construction cost.
2. Mitigation costs are estimated based on \$150,000 per acre of impacted wetlands. Final mitigation costs will be determined through consultation with environmental agencies.
3. Pond right-of-way costs are for both Stormwater Management Facilities and Floodplain Compensation Sites.
4. Construction Engineering & Inspection Costs are estimated at 10% of the total construction cost.
5. Transitional costs from Maryland Avenue to park road are included in Segment 11 costs.

6.6 Schedule and Planning Consistency

There are no subsequent project implementation phases included in the FDOT's Adopted 5 Year Work Program (Fiscal Years 2018-2022) nor the latest STIP. However, design, right-of-way and construction phases for portions of US 92 are included in the Hillsborough County MPO Imagine 2040 LRTP Cost Feasible Plan (LRTP).

6.7 Bicycle and Pedestrian Facilities

As part of the proposed roadway improvements, pedestrians and bicyclists will be accommodated through the Build portion of the project area. Bicycle and pedestrian facilities, including sidewalks and construction of fully compliant ADA pedestrian features, will have a beneficial impact on cyclists and pedestrians. Provisions for bicycles include seven-foot buffered bike lanes for all design segments. Proposed pedestrian provisions include five-foot sidewalks on both sides of the road for all Build alternatives with the exception of the portion of Segment 1 that passes under I-75. This segment will include six-foot pedestrian sidewalks on both sides of the road located behind the bridge piers and pier protection barrier.

The Imagine 2040: Hillsborough Long Range Transportation Plan shows a conceptual CSX Trails on Figure 3-23 in the plan. At the time of this study, the inclusion of a trail was not requested by any of partner agencies. The addition of a trail may be analyzed during the design phase if a maintenance agreement is entered into with a local maintaining agency, per current FDOT policy.

6.8 Utility Impacts

A description of the existing facilities and the associated relocation costs are outlined in Table 6-2. Detailed utility impacts can be found in the *Final Utility Assessment Package* (Inwood Consulting Engineers, Inc., April 2017) located within the project files.

**Table 6-2
Existing Utilities and Estimated Relocation Costs**

Company	Description	Estimated Relocation Cost
AT&T Corp	Two 2-inch PVC conduits and related fiber along the west side of Mango Road with a 6" steel casing crossing US 92 at Mango Road.	\$100,000
Bright House Networks	No response. Facilities likely aerial on existing power poles.	-
Central Florida Gas/FPU	No response.	-
City of Plant City	The City maintains water mains ranging in size from 2-inch to 12-inch, 8-inch to 10-inch sanitary sewer mains, and 12-inch to 20-inch reclaimed water mains within the project limits.	\$1.5 Million
Florida Gas Transmission	6-inch gas main crossing US 92 along east side of Falkenburg Road 26-inch gas main crossing US 92 along west side of Tanner Road 18-inch gas main crossing US 92 just west of Moores Lake Road 30-inch & 36-inch gas main crossing US 92 just east of Whitelaw Road 4-inch gas main crossing US 92 at N Wilder Road	\$1 Million – \$10 Million
FPL FiberNet	Maintains underground Fiber along US 92 from Edmond Ct to Branch Forbes Road and from Fletcher Lane to Whitehurst Road.	\$300,000
Hillsborough County Utilities	Maintains a water mains ranging in size from 6-inch to 12-inch along both side of US 92 from I-75 to Darby Lake Street. The County also maintains a 4-inch force main primarily along the north side of US 92 from Black Dairy Road to N Kingsway Road.	\$1.2 Million
Kinder Morgan/CFP	6-inch and 10-inch high pressure jet fuel line along the south side of US 92 in CSX ROW from Park Road to County Line Road.	\$0
Level 3 Communications	Maintains a buried fiber crossing at US 92 and I-4 and a buried fiber along US 92 from SR 39 to County Line Road.	\$660,000
Tampa Electric Company	Overhead distribution lines primarily along the north side of US 92 for the limits of the project. 69 kV transmission line crossing US 92 at Mango Road, which continues along the north side of US 92 to Peach Avenue. 69 kV transmission line along the north side of US 92 from Walter Dr. to N Woodrow Wilson St.	\$3.9 Million
TECO Peoples Gas	Maintains a 6-inch gas main crossing of US 92 at Pine Street.	\$60,000
TW Telecom	No response. Normally leases Bright House Facilities	-
Frontier Communications	No Response.	To Be determined

6.9 Temporary Traffic Control Plan

Temporary traffic control concepts are discussed in Section 5.4.7 above.

6.10 Drainage

A *Final Stormwater Management Facility Report* (Inwood Consulting Engineers, Inc., May 2017) has been prepared to evaluate stormwater management requirements for this study. A separate *Final Stormwater Management Facility Report* (Technical Memo) (Inwood Consulting Engineers, Inc., May 2017) that includes backup documentation for the stormwater management facilities sizing and siting locations has also been prepared. In addition, a *Final Location Hydraulic Report* (Inwood Consulting Engineers, Inc., May 2017) was prepared for the study. All three of these documents are contained in the project files. Pertinent information is summarized in Section 5.4.4. Concept plans showing the locations of preliminary stormwater management ponds and floodplain compensation sites are shown in the *Final Stormwater Management Facility (Technical Memo)* located within the project files.

6.11 Bridge Analysis

The widening of US 92 from a two-lane to a four-lane roadway requires the lengths of the four concrete bridge culverts as well as the thirteen concrete box culverts to be extended. This extension of the culverts will also eliminate the need for the boardwalks and pedestrian bridges since the sidewalks can be carried over the waterways on these longer culverts. Preliminary inspection of these culverts indicates that they were constructed in 1930 and later widened in 1943. While they are approximately 85 years old, they are in good shape and the bridge culverts have been given sufficiency ratings ranging from 90.3 to 95.4. Based on this information, the culverts are suitable to be extended and therefore do not need to be replaced. Some rehabilitation work, such as spall or delamination repairs, may be needed at the time of the culvert extensions but this work will be minor.

The four I-75 bridges (Structure Nos. 100414, 100415, 100422, and 100424) can accommodate the widening of US 92 but the roadway typical section will need to be modified. The minimum horizontal clearance in span 2 between columns of Piers 2 and 3 is 102'-4" when measured perpendicular to US 92. This width provides enough room for the travel lanes as shown in Figure 5-3.

6.12 Special Features

There are no known special features associated with this project.

6.13 Access Management

Under current conditions, the undivided facility provides unrestricted access from the side street connections. There are a number of median turn lanes to accommodate access to the developments along the north and south sides of the roadway as well as side streets.

The access management plan has been developed based on Access Class 5 standards. An Access Class 5 roadway utilizes raised medians to provide separation between travel lanes and to restrict the number of median openings. The minimum median opening spacing allowed under Access Class 5 criteria is 660 feet for directional openings and 1,320 feet (design speed = 45 mph) for full and signalized openings. For design speed greater than 45 mph, minimum spacing for directional openings remains at 660 feet and increases to 2,640 feet for full and signalized openings. Table 5-8 identifies the locations of the proposed median openings. Additionally, the concept plans in Appendix B depict the proposed access management plan.

6.14 Aesthetic Considerations

There are no proposed aesthetic features associated with this project.

6.15 Coordination with Federal Aviation Administration and Tampa Executive Airport

The Tampa Executive Airport is located just north of I-4 and just west of I-75. Per Federal Aviation Regulation (FAR) Part 77, the Federal Aviation Administration (FAA) must be notified of any development that has the potential to affect navigable airspace. Roads, bridges, rail etc. in proximity to an airport may require notice. This also includes temporary construction equipment like cranes. The requirements are listed in FAR Part 77 Section 77.9. Notice can be filed on FAA's Obstruction Evaluation and Airport Airspace Analysis (OEAAA) website: oeaaa.faa.gov. Questions pertaining to filing notice to the FAA for off airport development may be addressed to Mr. Tony Mantegna of the Hillsborough County Aviation Authority at TMantegna@Tampaairport.com or 813-870-7863. Coordination with the Aviation Authority regarding the Tampa Executive Airport will be conducted during the design phase of the project to be in compliance with the Hillsborough County Aviation Authority (HCAA) Height Zoning Regulations and FAA regulations.

6.16 The Palm River Restoration Project

The Tampa Bypass Canal and Palm River ultimately discharge to McKay bay which will undergo extensive restoration, this may potentially yield water quality credits for the future expansion of US. 92.

Section 7.0

Conceptual Design Plans

Conceptual design plans have been developed for the Preferred Build Alternative and are provided in Appendix B.

Section 8.0 References

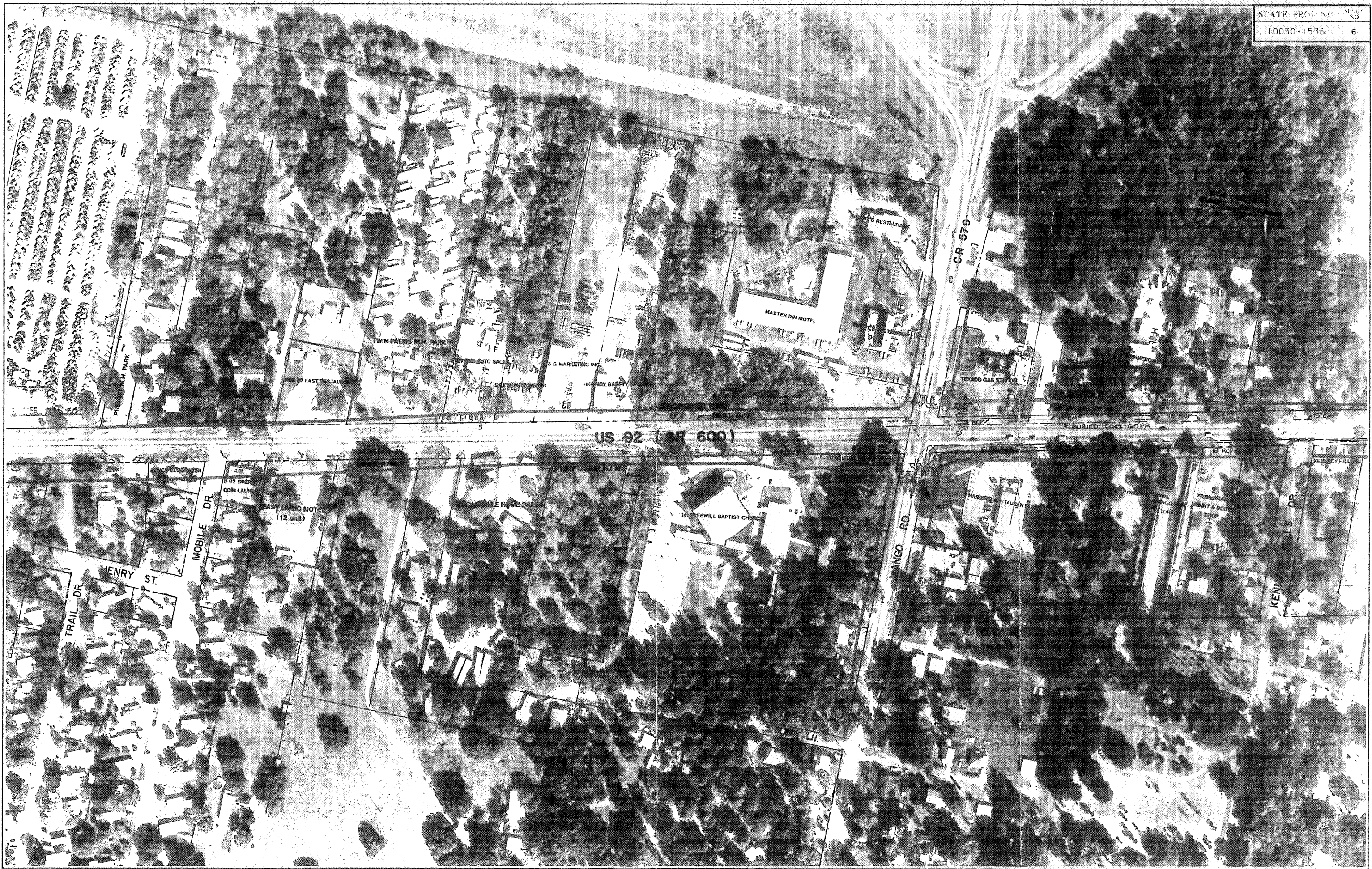
8.1 List of Technical Reports and Memoranda Completed to date for the Project

The following technical reports and memoranda were prepared as part of this PD&E Study and were used to provide the technical analysis necessary to develop and select the proposed alternative.

- Cultural Resource Assessment Study – Archaeological Consultants, Inc. (ACI), February 2017
- Final Cultural Resources Preliminary Analysis, Proposed Stormwater Management Facilities and Floodplain Compensation Sites- Arch. Cons. Inc., December 2016
- Final Level 1 Contamination Screening Evaluation Report – Tierra, Inc., April 2017
- Final Level 1 Contamination Screening Evaluation Memo for the Preliminary Alternatives Stormwater Management Facilities - Tierra, Inc., April 2017
- Preliminary Stormwater Management Facility Report – Inwood Consulting Engineers, Inc., May 2017
- Stormwater Management Facility Report (Technical Memo) – Inwood Consulting Engineers, Inc., May 2017
- Final Location Hydraulics Report– Inwood Consulting Engineers, Inc., May 2017
- Wetland Evaluation and Biological Assessment Report (Inwood Consulting Engineers, Inc., October 2016)
- Final Noise Study Report – KB Environmental Sciences, Inc., August 2017
- Final Air Quality Technical Memorandum – KB Environmental Sciences, Inc., April 2017
- Geotechnical Technical Memorandum – Tierra, Inc., April 2017
- Final Design Traffic Technical Memorandum – American Consulting Engineers of Florida, LLC, May 2017
- Water Quality Impact Evaluation Checklist – Inwood Consulting Engineers, Inc., August 2016
- Final Utility Assessment Package- Inwood Consulting Engineers, Inc., April 2017.

Appendix A

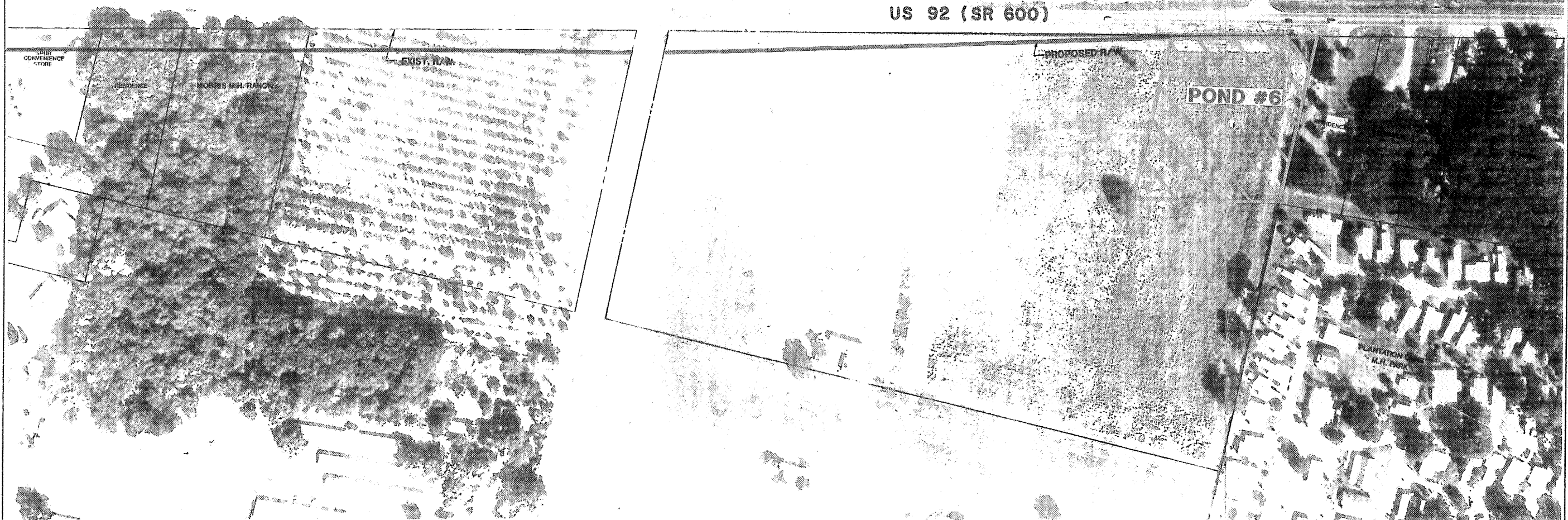
Original 1994 PD&E Study Preferred Typical Section and Concept Plans



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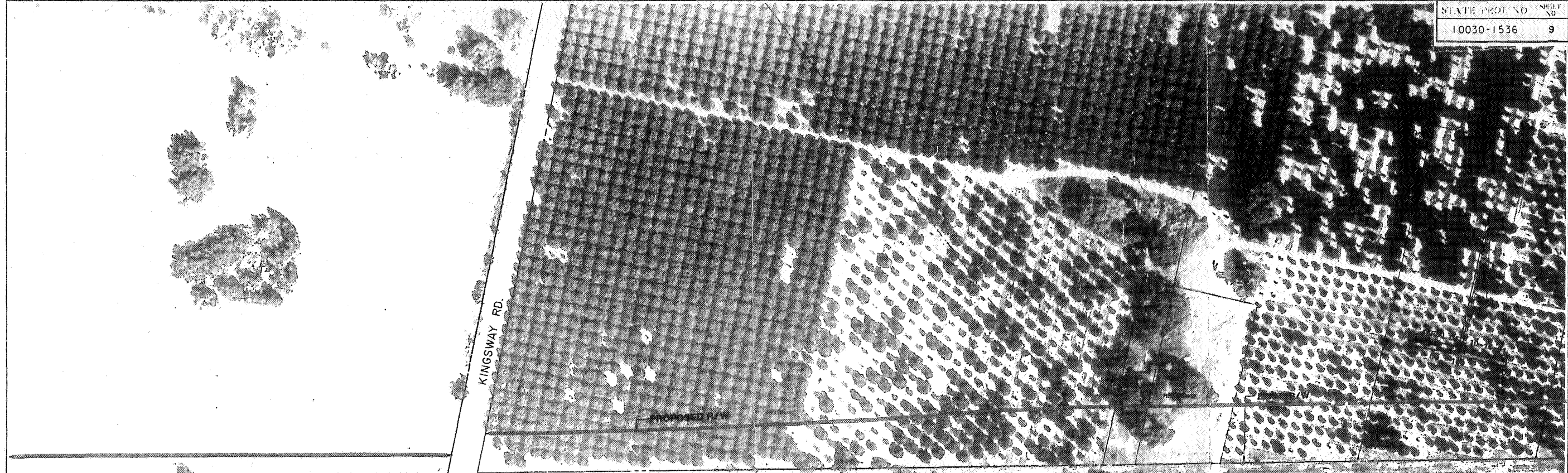
US 92 (SR 600)



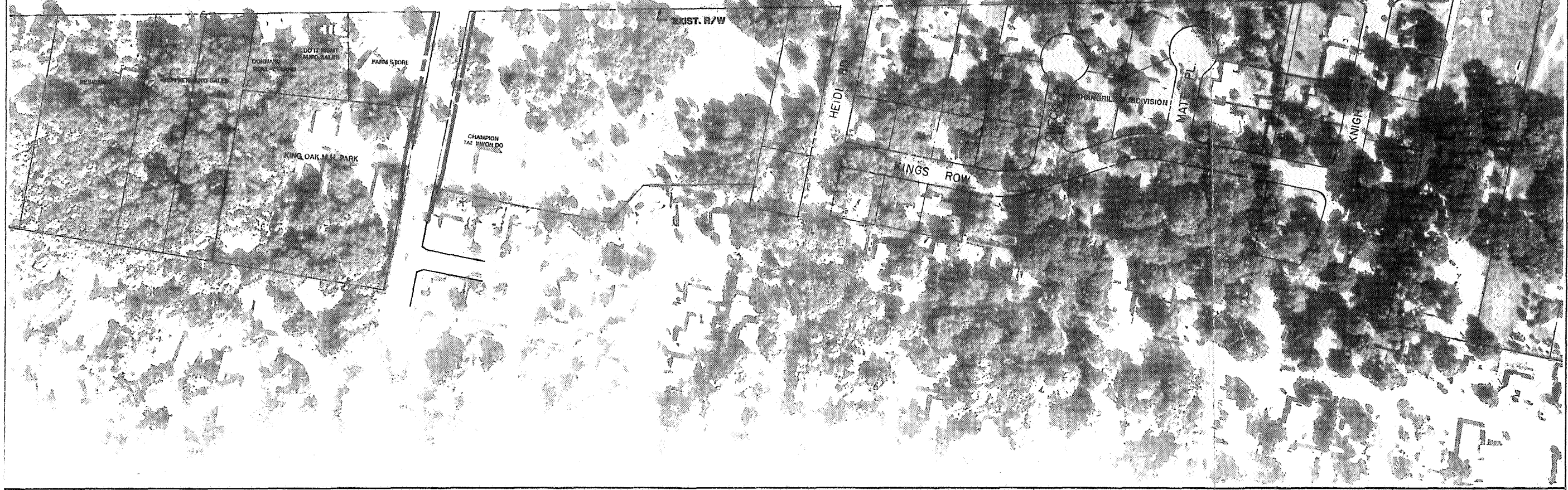
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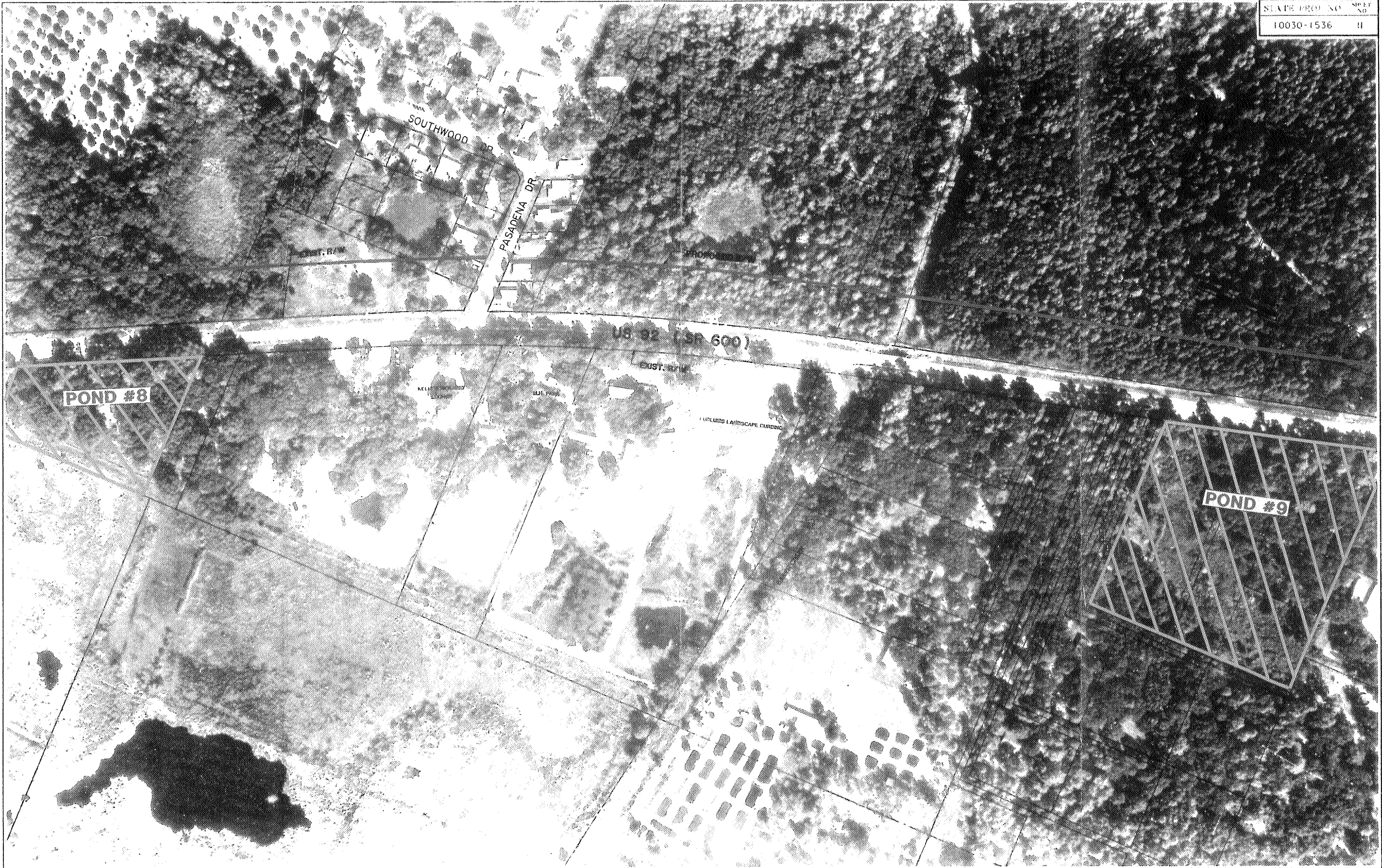
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US 92 (SR 600)



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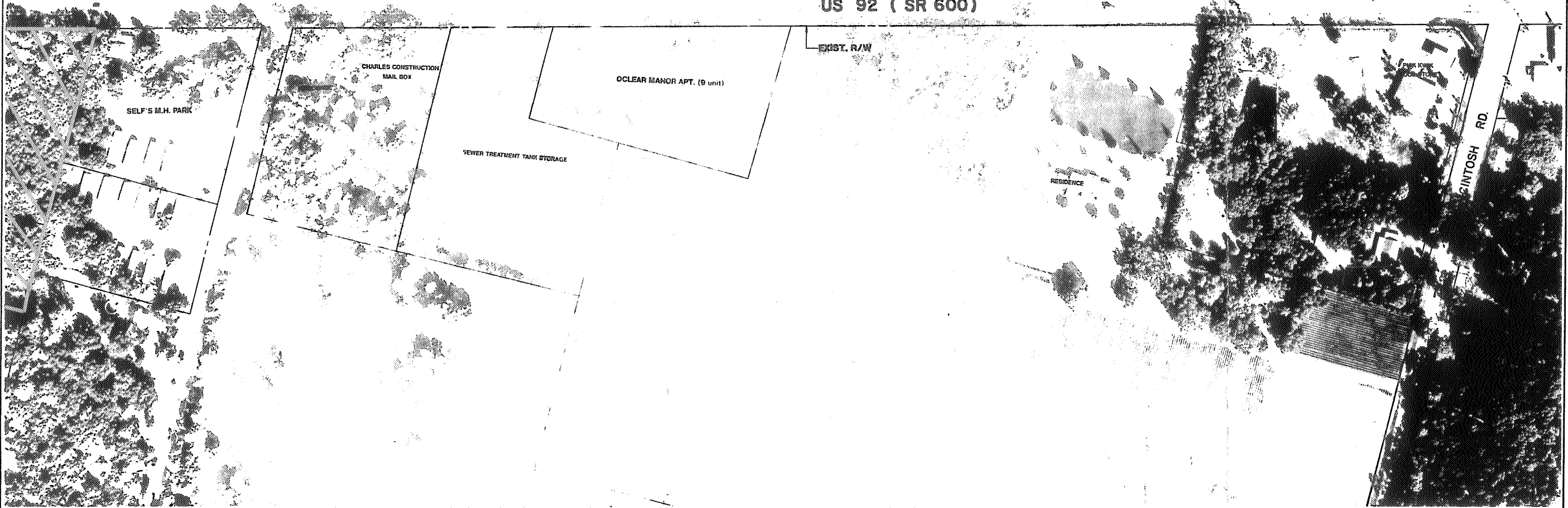


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HILLBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

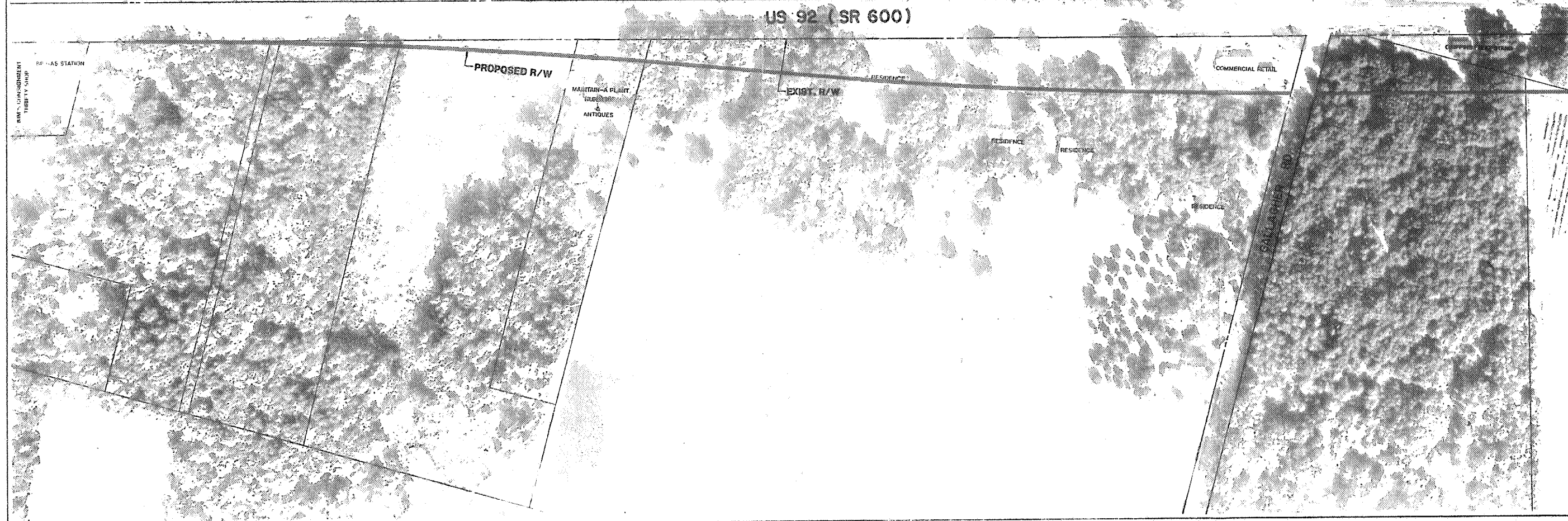


US 92 (SR 600)





US 92 (SR 600)





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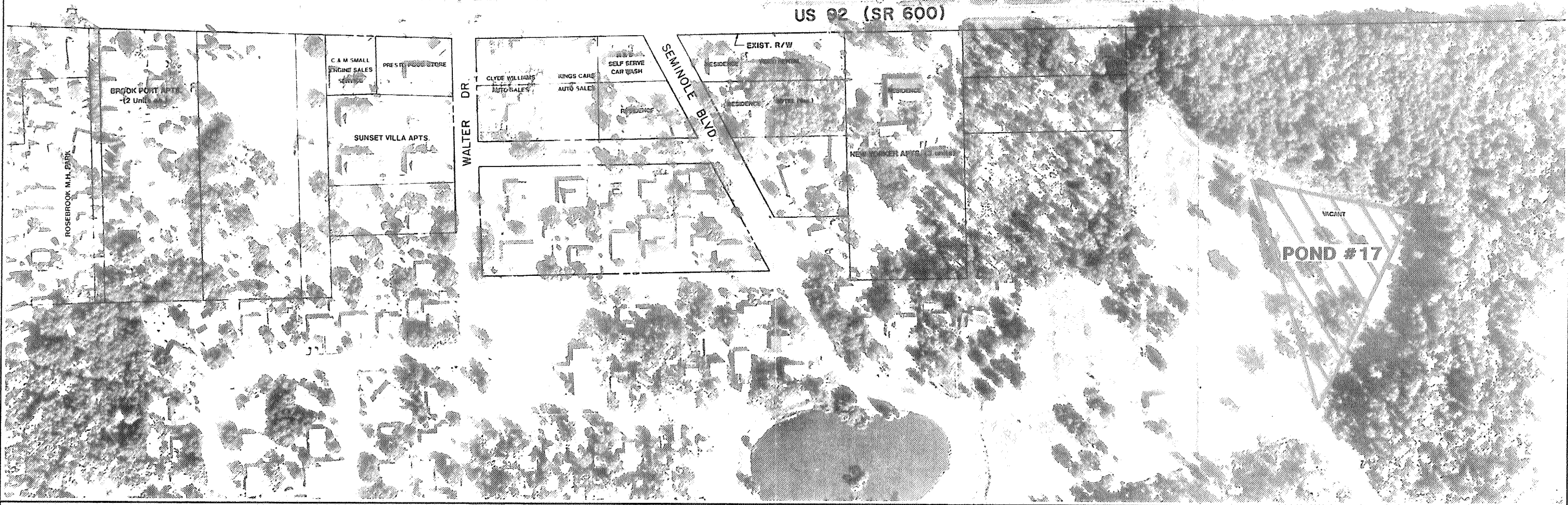
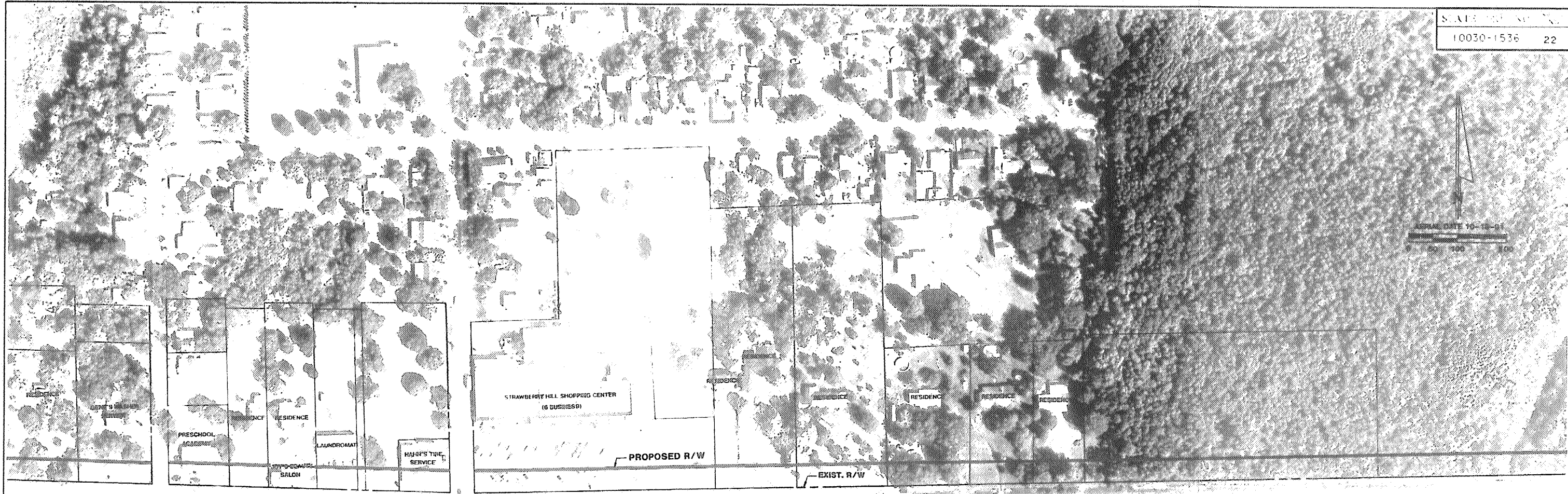
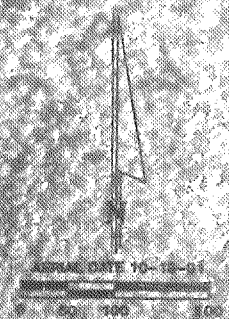
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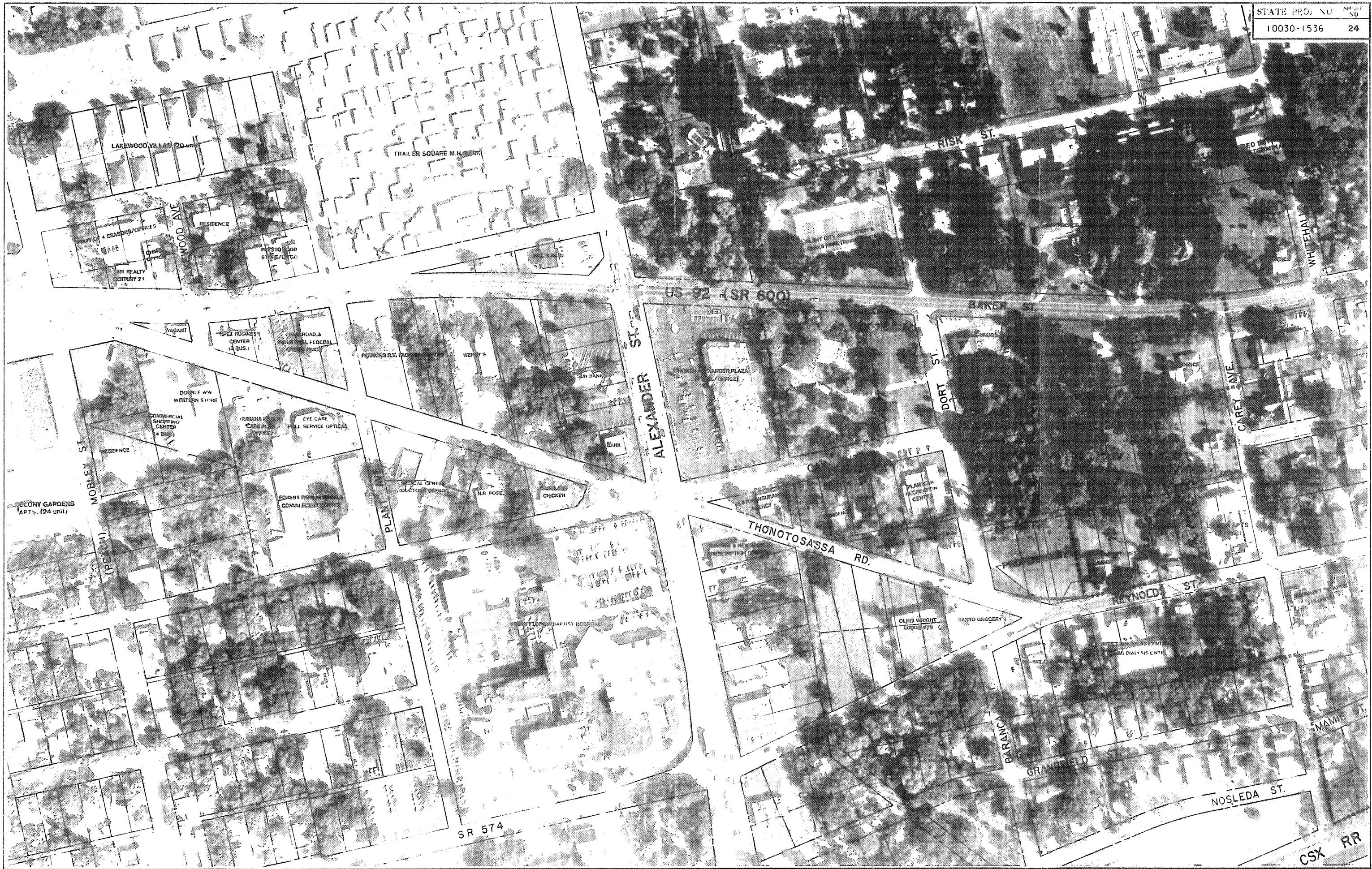


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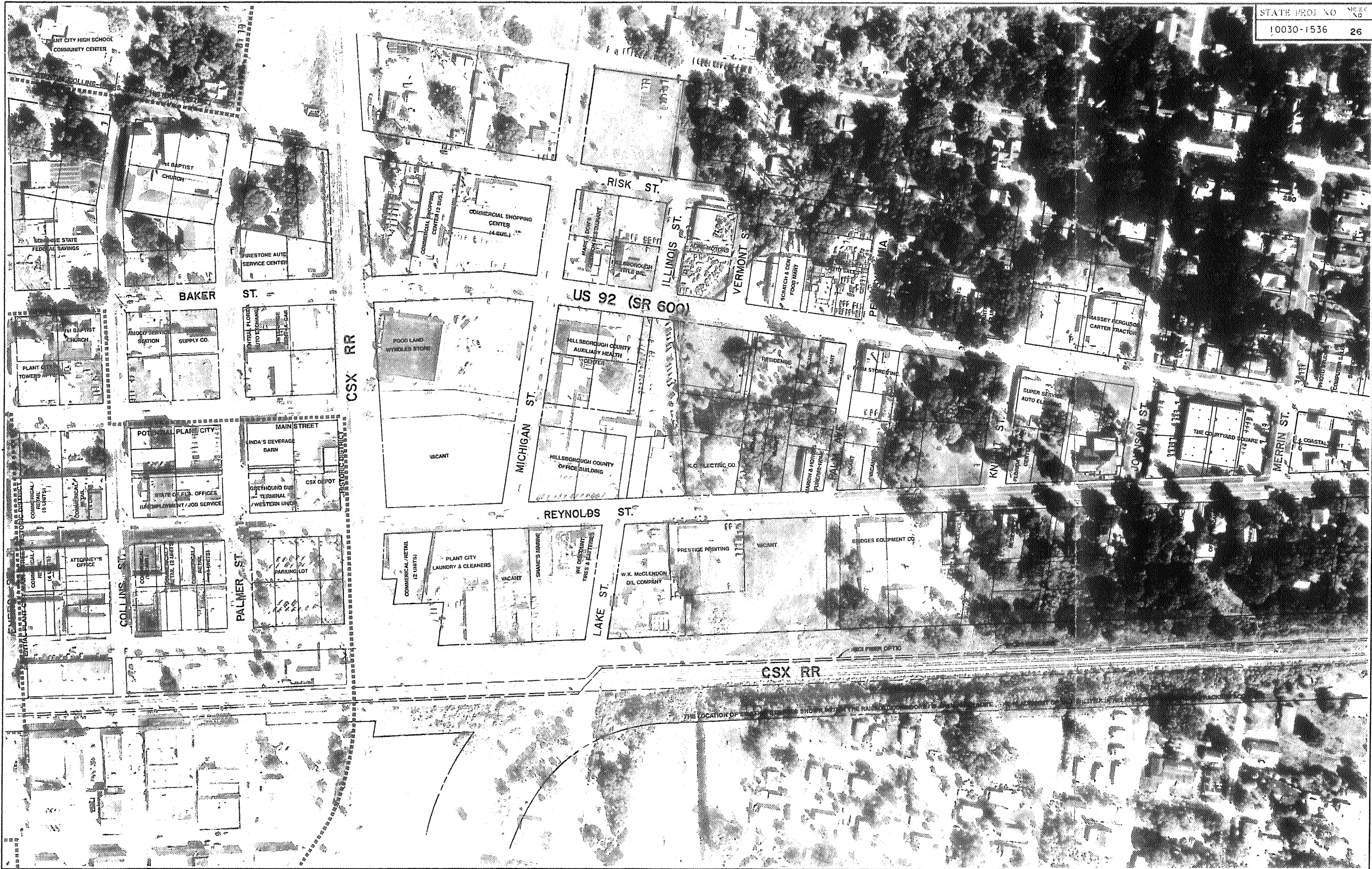
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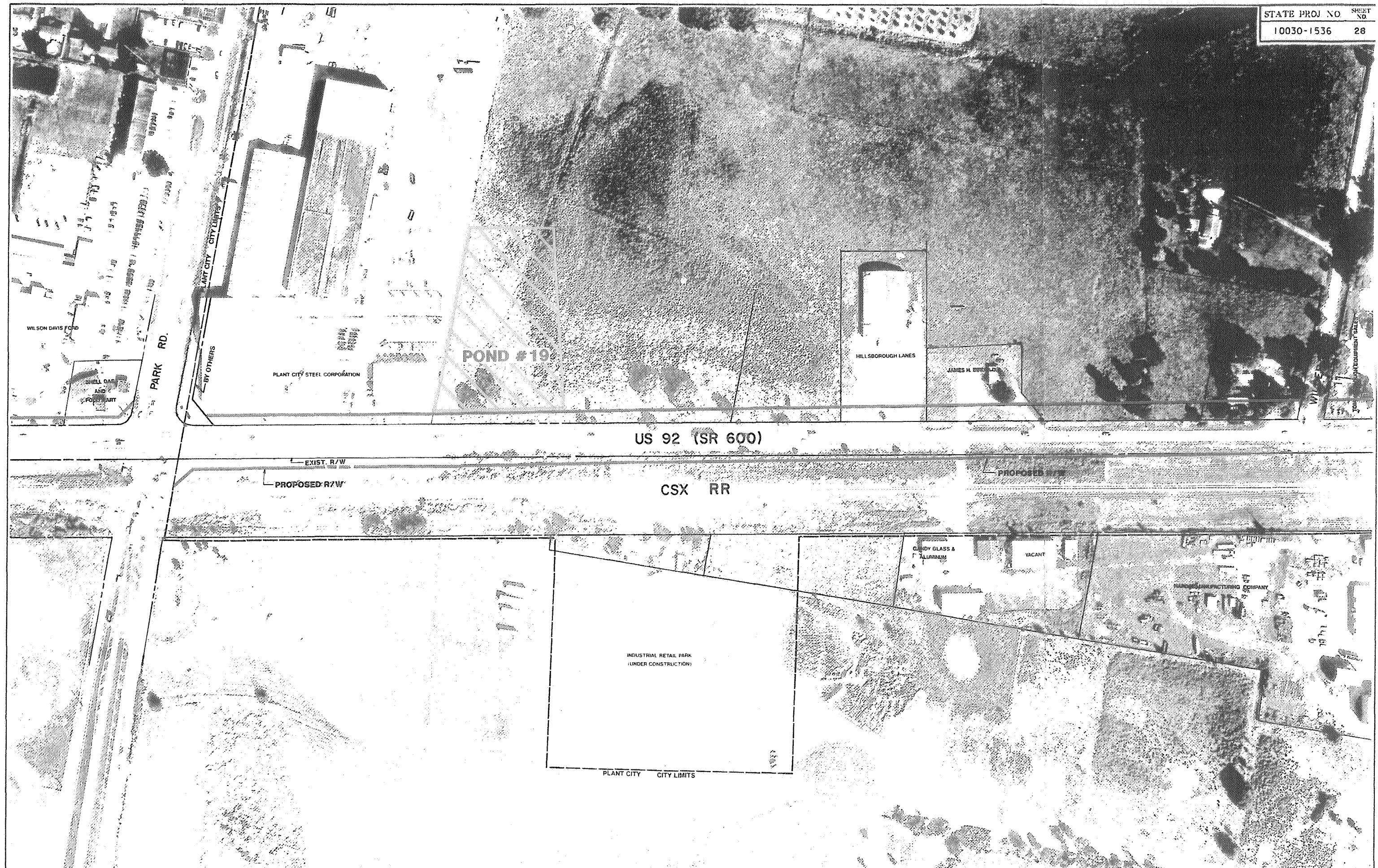
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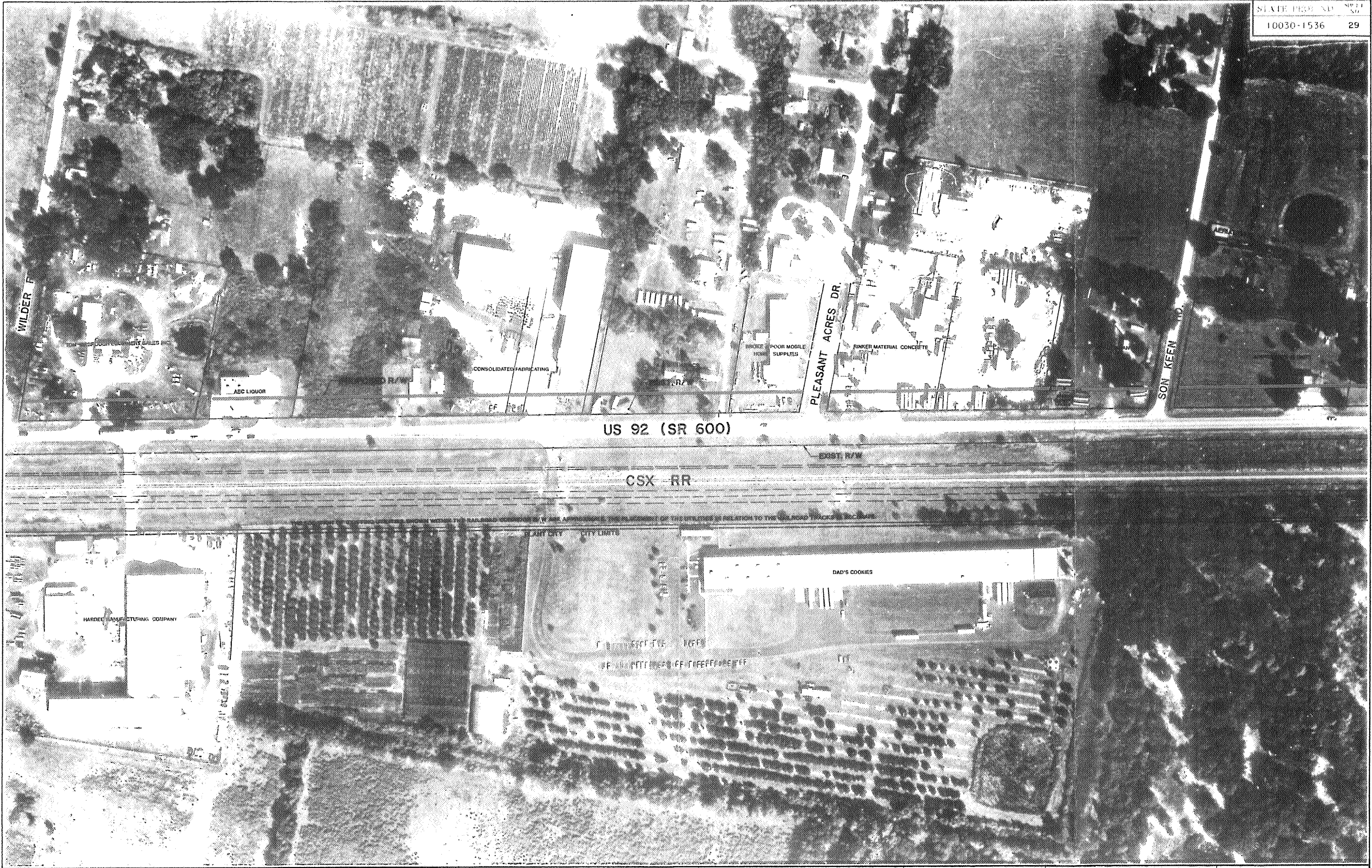


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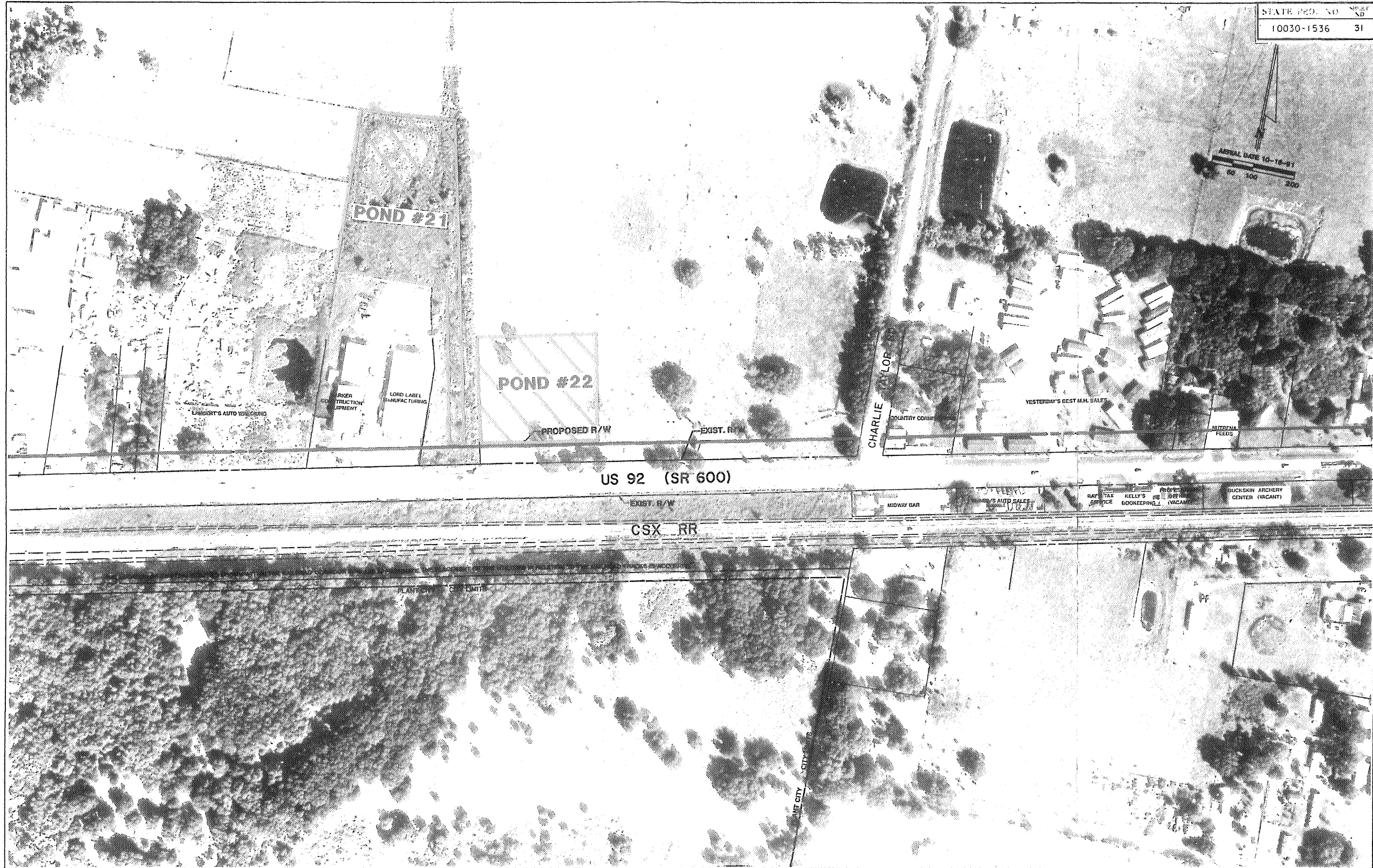


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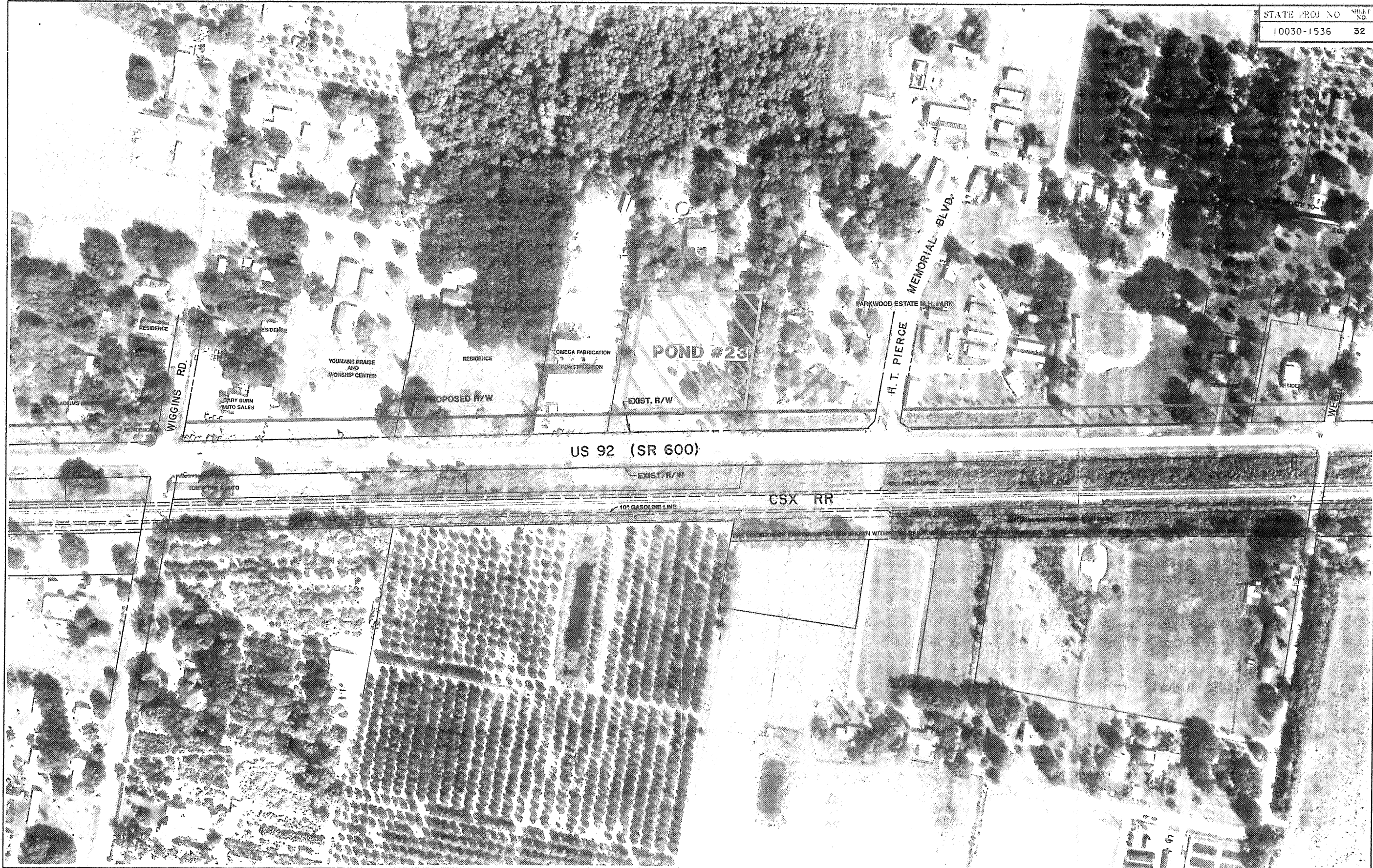
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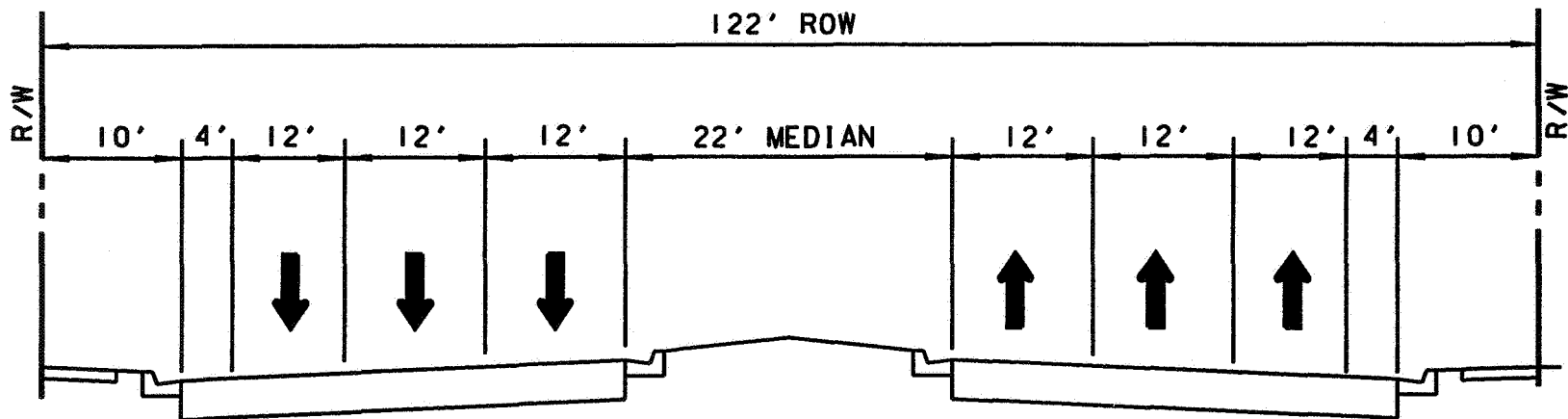
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HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD



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US 92 PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD



APPLICABLE TO SEGMENT:

- GARDEN LANE ROAD TO FALKENBURG ROAD
FROM MILEPOST 6.583 TO MILEPOST 7.138

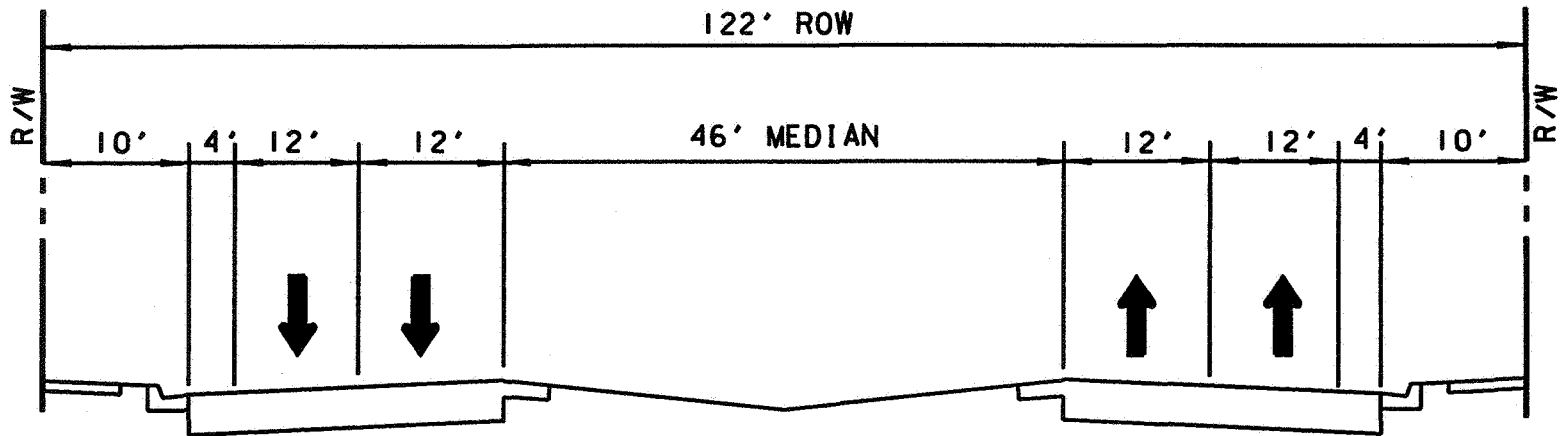
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US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

**SIX-LANE URBAN
TYPICAL SECTION ALTERNATIVE**

FIGURE



APPLICABLE TO SEGMENTS:

- 2. FALKENBURG ROAD TO KINGSWAY ROAD
FROM MILEPOST 7.138 TO MILEPOST 10.717
- 5. FORBES ROAD TO MOBLEY STREET
FROM MILEPOST 16.389 TO MILEPOST 19.169
- 8. PARK ROAD TO COUNTY LINE ROAD
FROM MILEPOST 21.518 TO MILEPOST 24.593

DESIGN SPEED 45 MPH

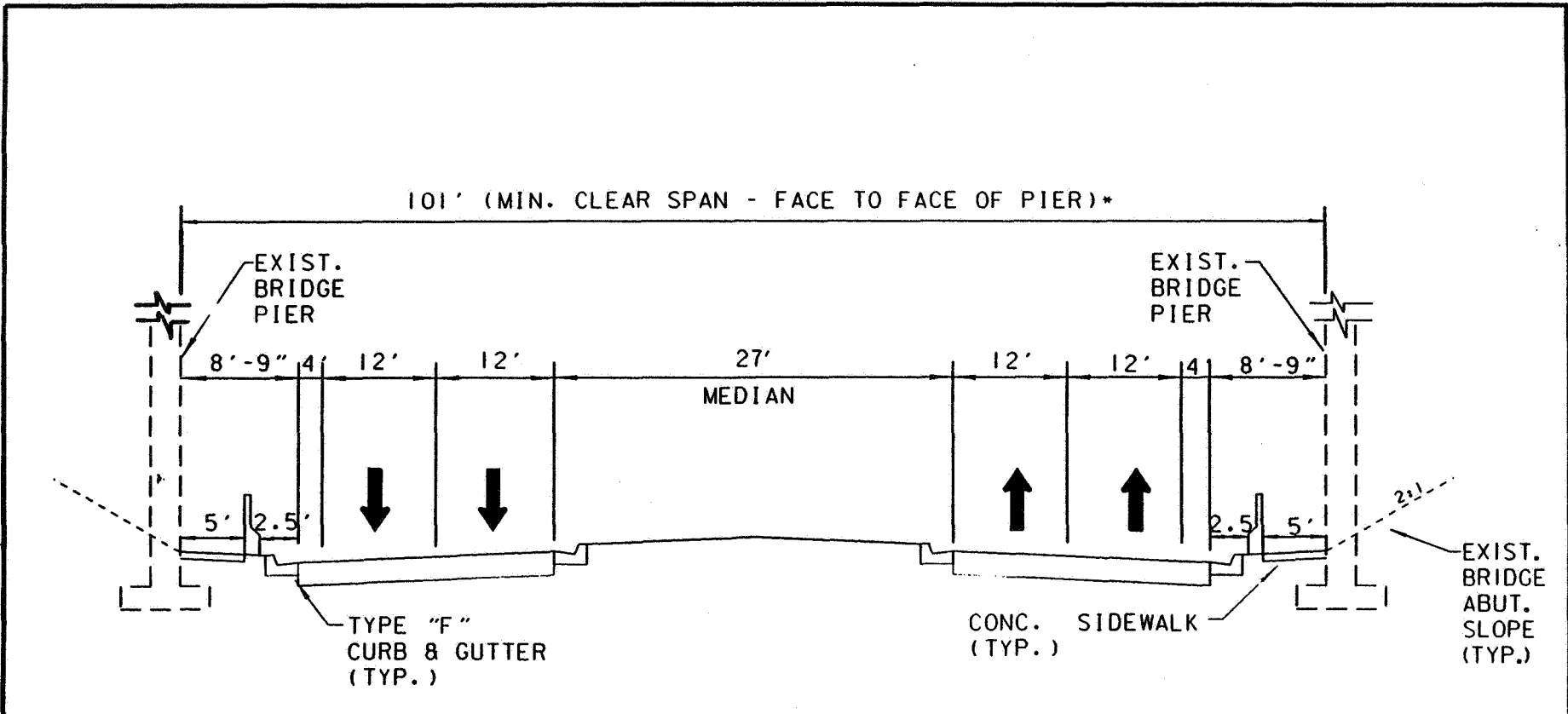
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US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE URBAN
TYPICAL SECTION ALTERNATIVE
(EXPANDABLE TO SIX-LANES)**

FIGURE

2



APPLICABLE TO SEGMENT 2 UNDER I-75 OVERPASS STRUCTURES

*USING MIN. CENTER SPAN LENGTH OF BRIDGE NO.'s 100414, 100415, 100422, AND 100424, ESTIMATED SKEW ANGLES, AND ASSUMING 4'Ø PIERS.

45 MPH DESIGN SPEED

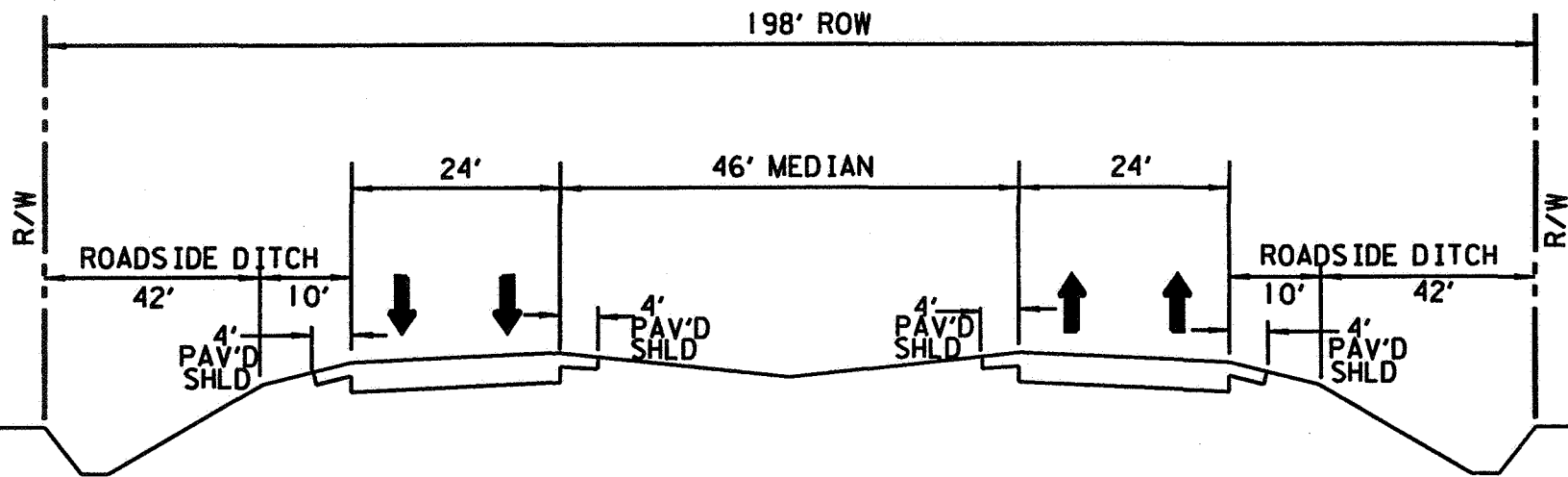
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US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED FOUR-LANE DIVIDED URBAN
TYPICAL SECTION (EXPANDABLE TO 6-LANES)
ALTERNATIVE UNDER I-75

FIGURE
by



APPLICABLE TO SEGMENTS:

- 3. KINGSWAY ROAD TO McINTOSH ROAD
FROM MILEPOST 10.717 TO MILEPOST 12.828
- 4. McINTOSH ROAD TO FORBES ROAD
FROM MILEPOST 12.828 TO MILEPOST 16.389

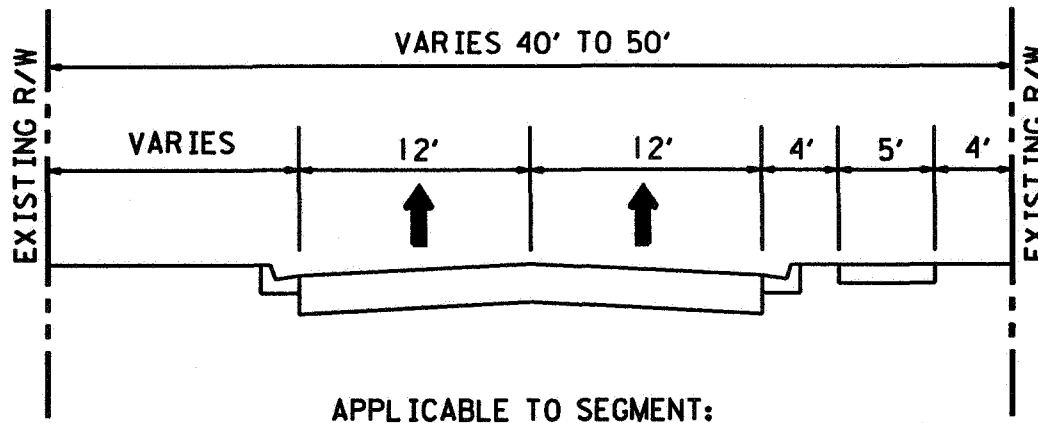
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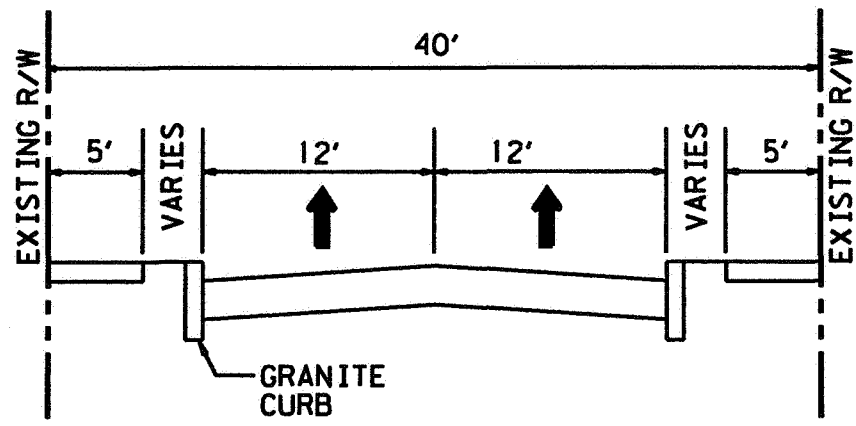
US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE RURAL
TYPICAL SECTION ALTERNATIVE**

FIGURE
4



APPLICABLE TO SEGMENT:
 6. THONOTOSASSA ROAD FROM MOBLEY STREET TO REYNOLDS STREET
 FROM MILEPOST 19.169 TO MILEPOST 19.728



APPLICABLE TO SEGMENT:
 6. REYNOLDS STREET FROM THONOTOSASSA ROAD TO FRANKLIN STREET
 FROM MILEPOST 19.062 TO MILEPOST 20.009

DESIGN SPEED 35 MPH

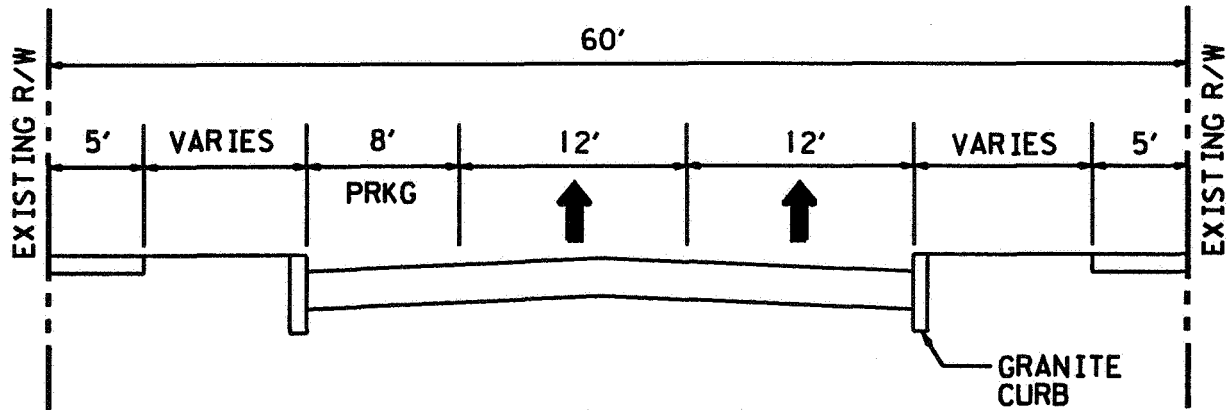
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

ONE-WAY TYPICAL SECTIONS
 ALONG EASTBOUND US 92

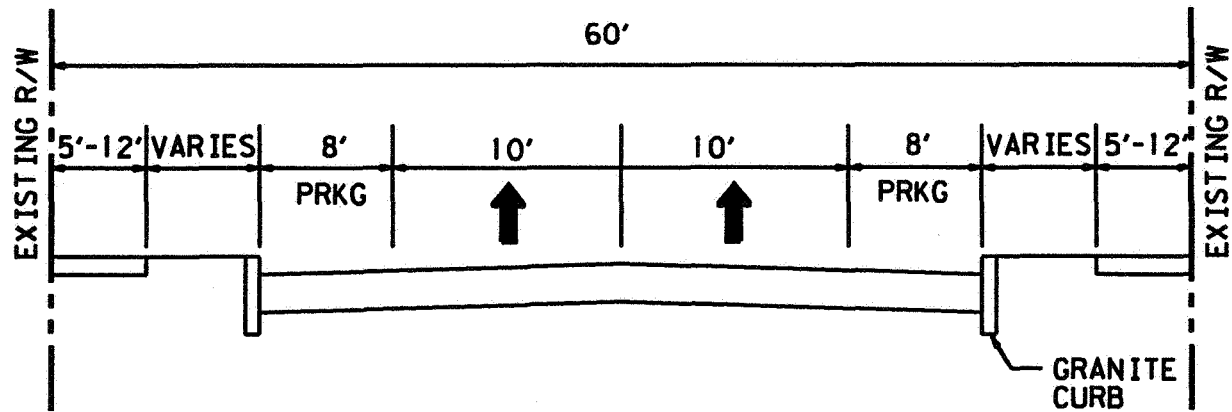
FIGURE
 27

US92TYP7



APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM FRANKLIN STREET TO WHEELER STREET
FROM MILEPOST 20.009 TO MILEPOST 20.370



APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM WHEELER STREET TO CSX R/R CROSSING
FROM MILEPOST 20.370 TO MILEPOST 20.545

DESIGN SPEED 35 MPH

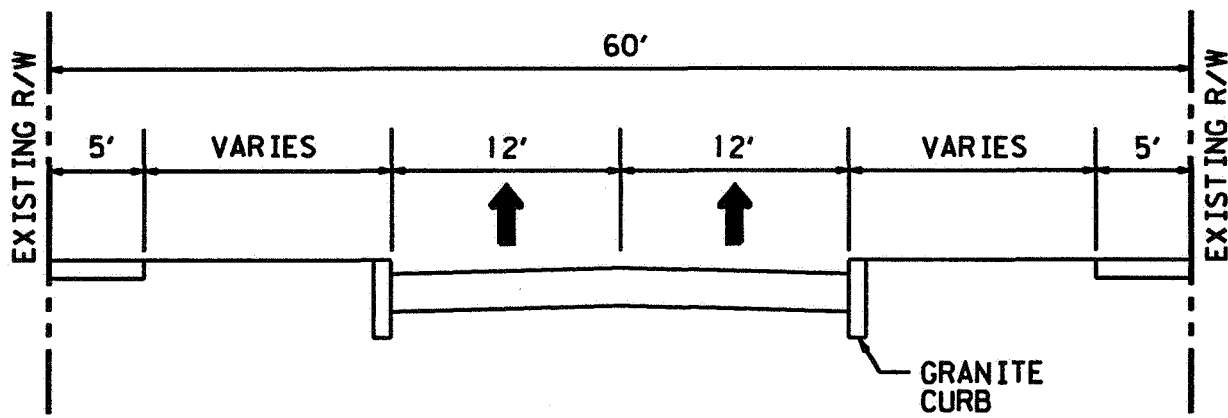
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

ONE-WAY TYPICAL SECTIONS
ALONG EASTBOUND US 92

FIGURE





EXISTING TYPICAL SECTION
US 92 ONE-WAY EASTBOUND

APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM CSX R/R CROSSING TO GORDON STREET
FROM MILEPOST 20.270 TO MILEPOST 21.029

DESIGN SPEED 35 MPH

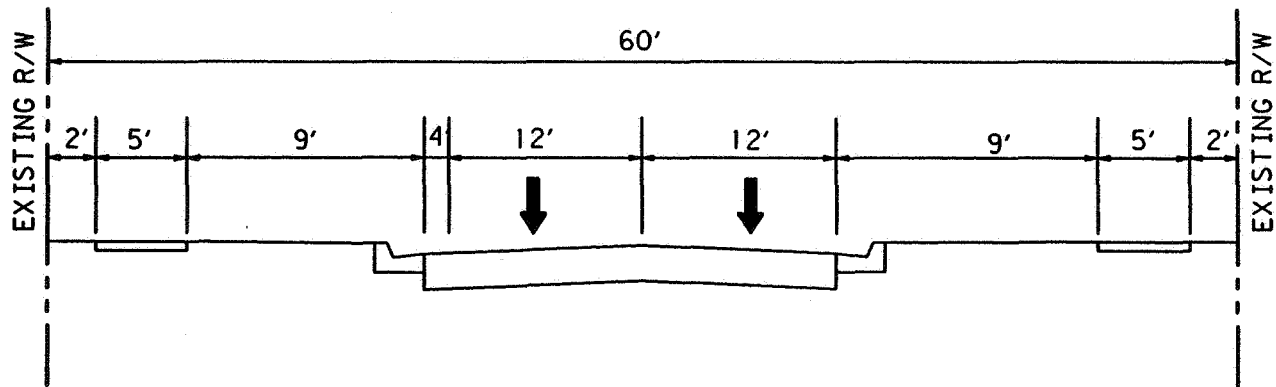
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

ONE-WAY TYPICAL SECTIONS
ALONG EASTBOUND US 92

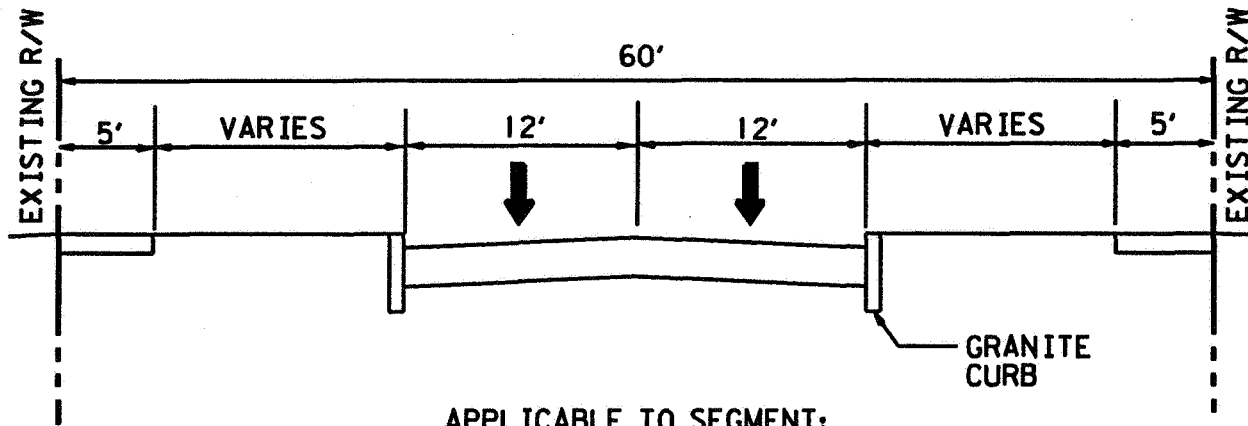
FIGURE
↙

US92TYP9



APPLICABLE TO SEGMENT:

6. BAKER STREET FROM MOBLEY STREET TO WHITEHALL STREET
FROM MILEPOST 19.169 TO MILEPOST 19.800



APPLICABLE TO SEGMENT:

6. BAKER STREET FROM WHITEHALL STREET TO GORDON STREET
FROM MILEPOST 19.800 TO MILEPOST 21.029

DESIGN SPEED 35 MPH

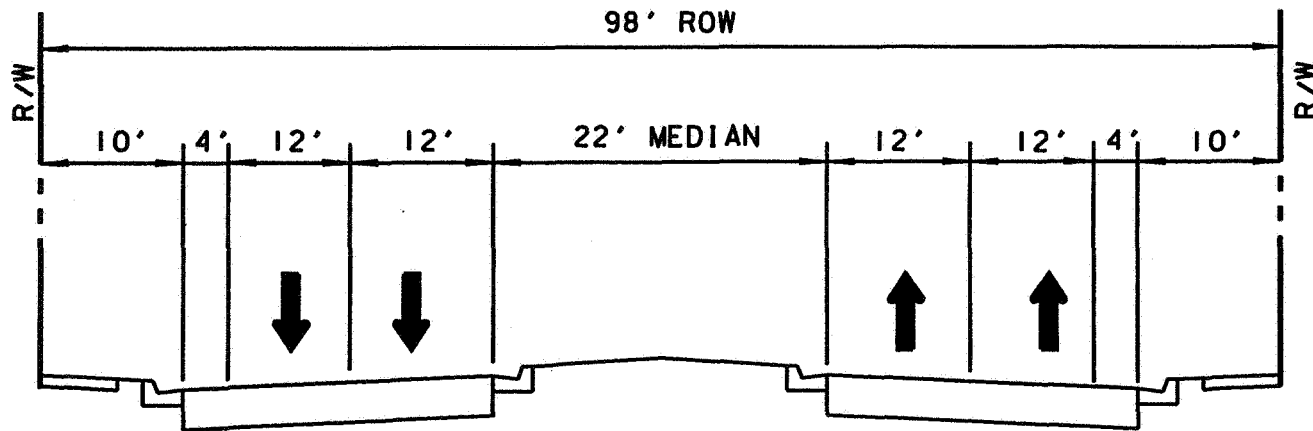
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

ONE-WAY TYPICAL SECTIONS ALONG
WESTBOUND US 92

FIGURE

8



APPLICABLE TO SEGMENT:
 7. GORDON STREET TO PARK ROAD
 FROM MILEPOST 21.029 TO MILEPOST 21.518

DESIGN SPEED 45 MPH

NOT TO SCALE

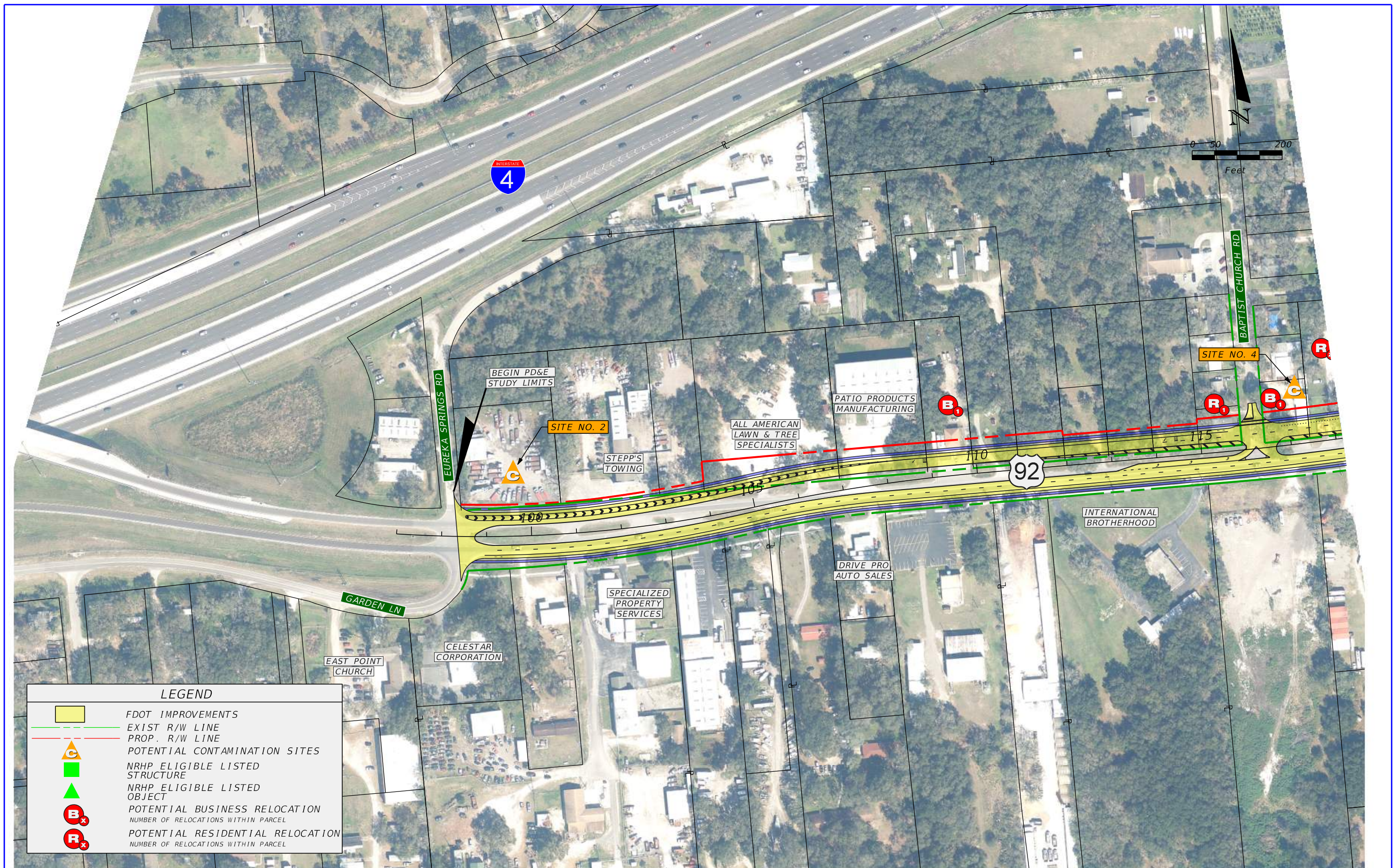
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 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE URBAN
 TYPICAL SECTION ALTERNATIVE**

FIGURE
R

Appendix B

Preliminary Concept Plans



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

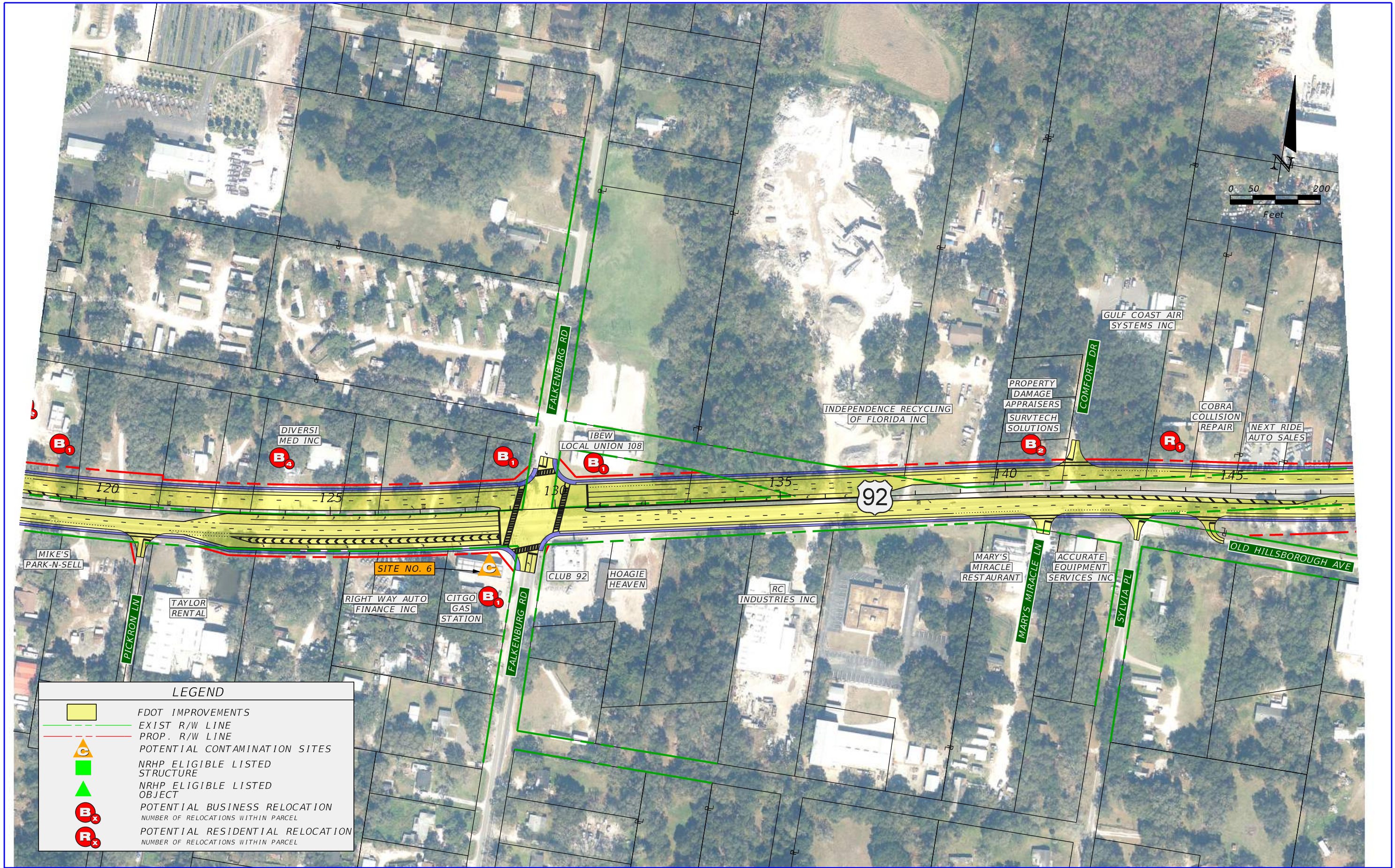
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US 92 / SR 600
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SHEET NO.
 1



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

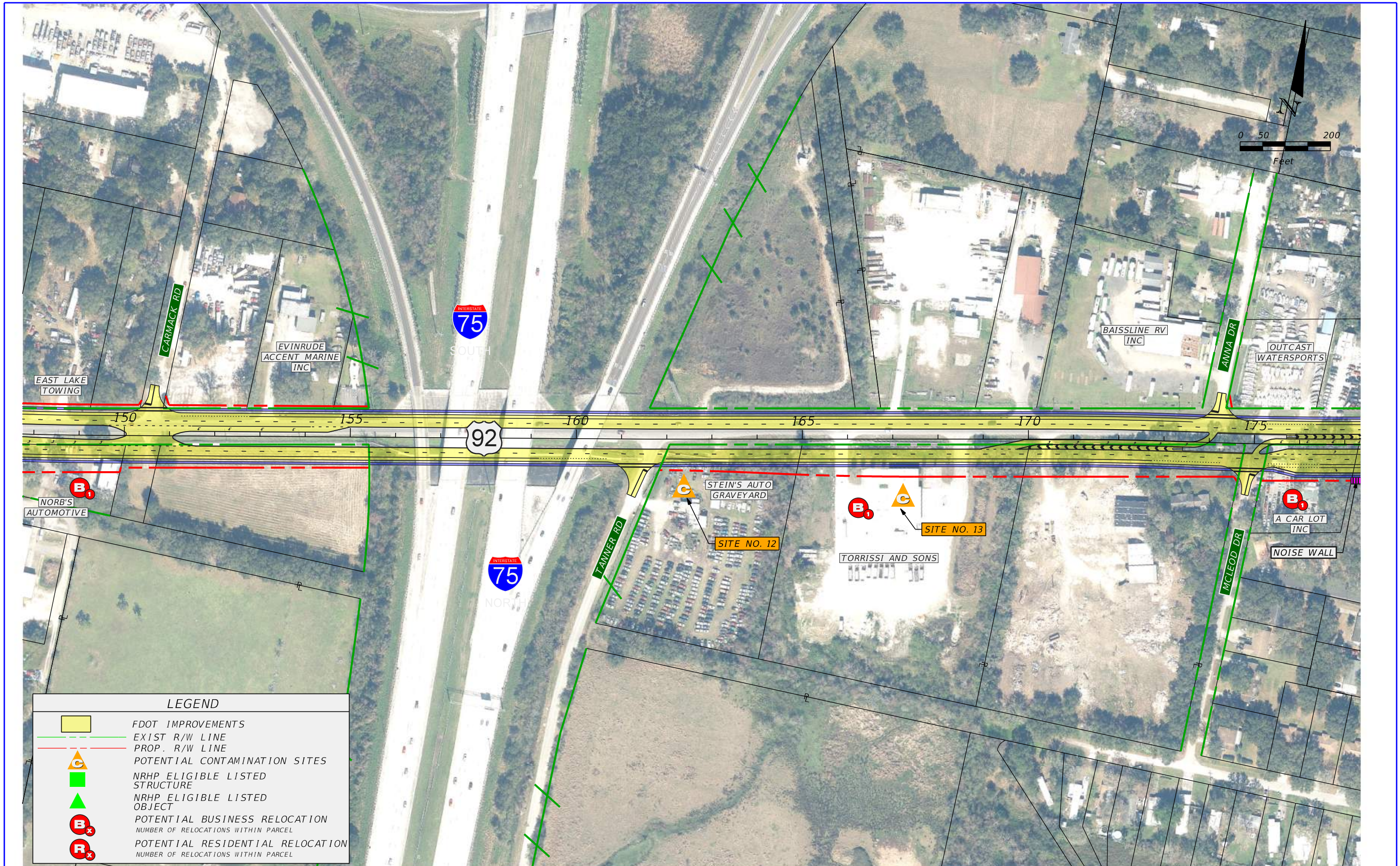
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LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

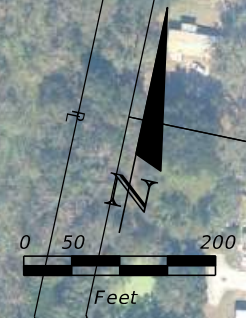
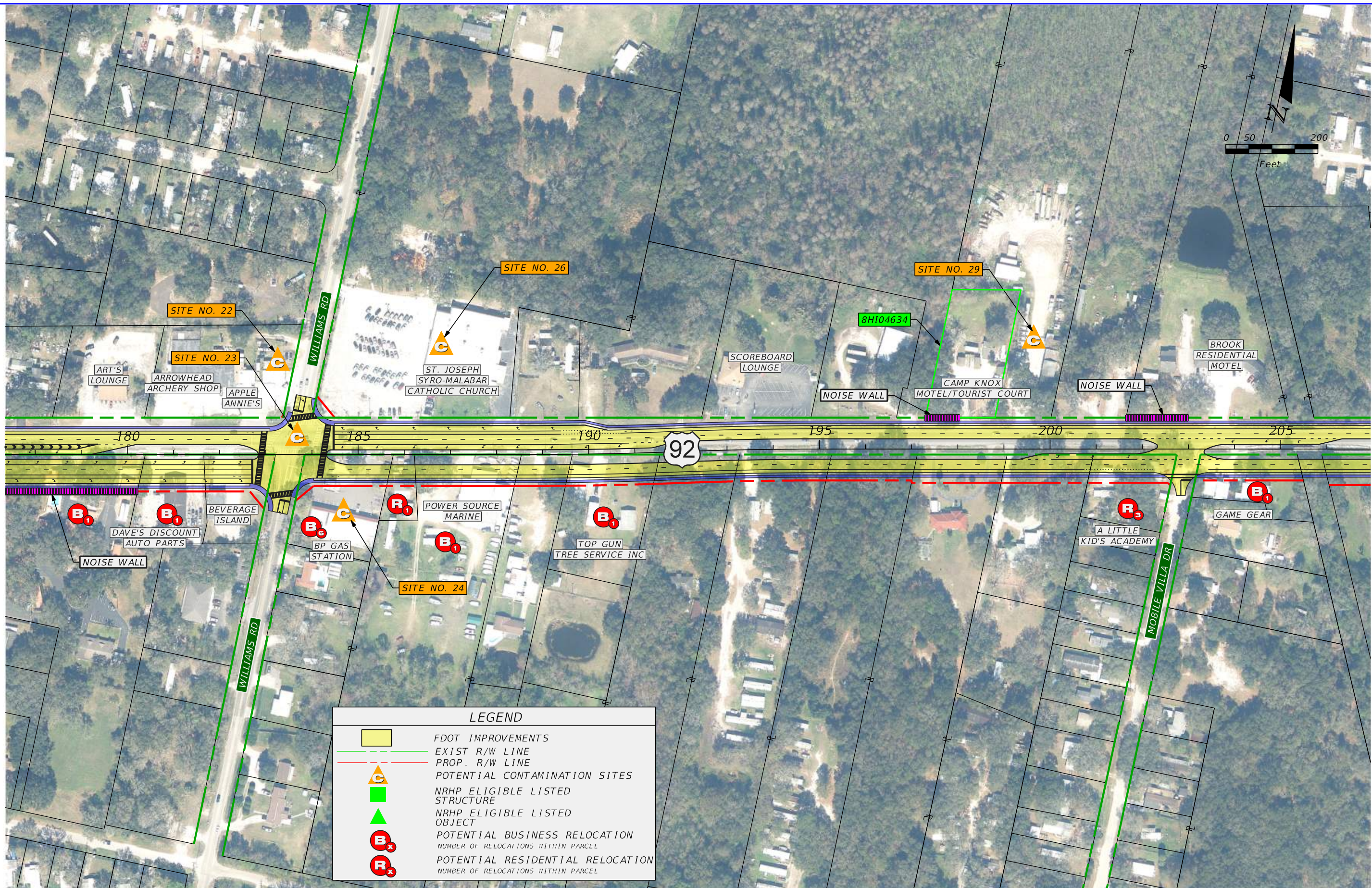
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 3



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

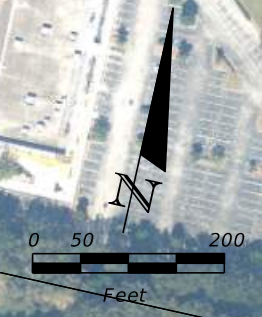
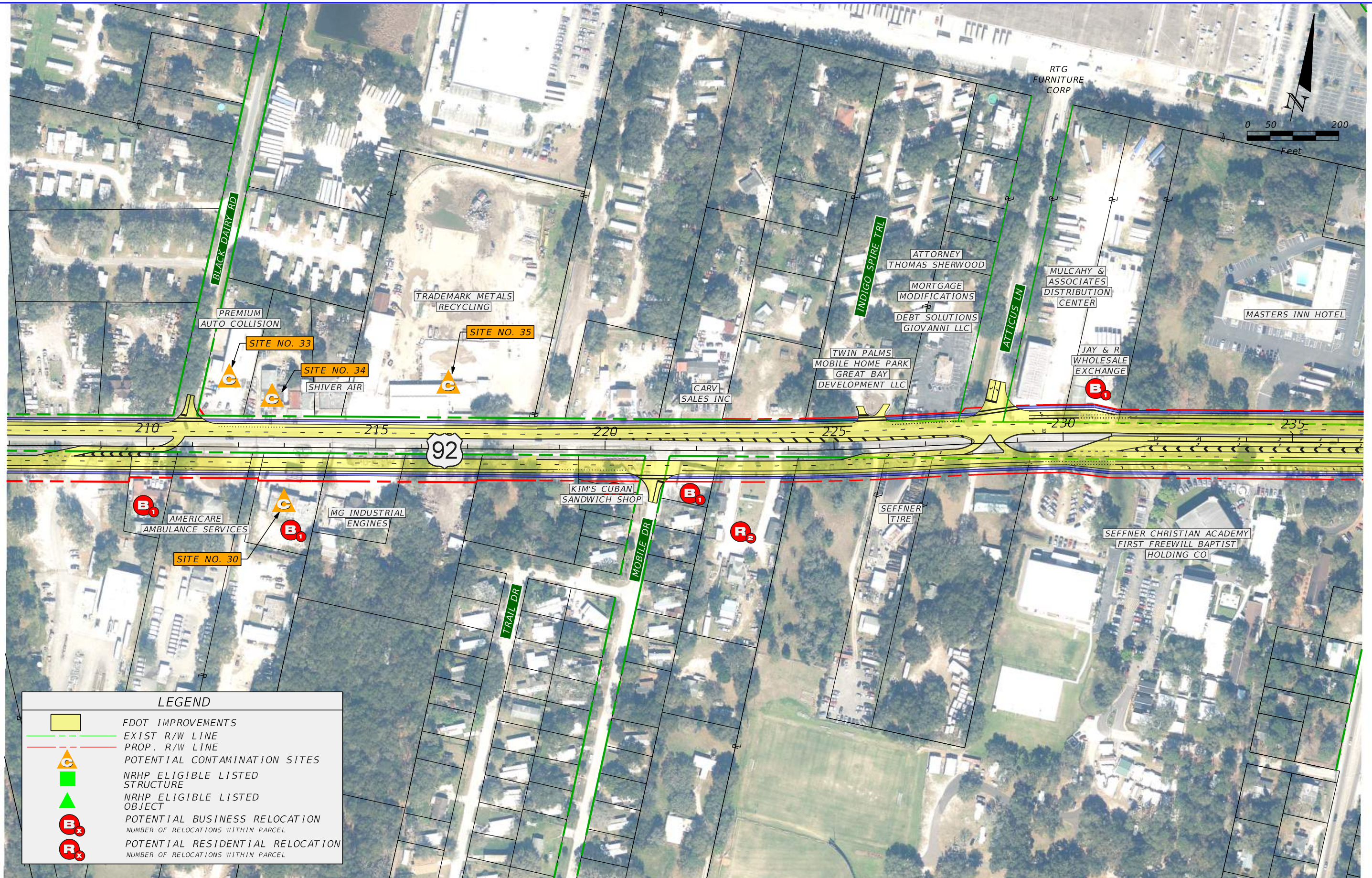
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LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

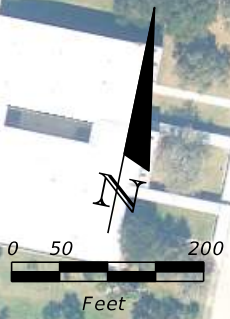
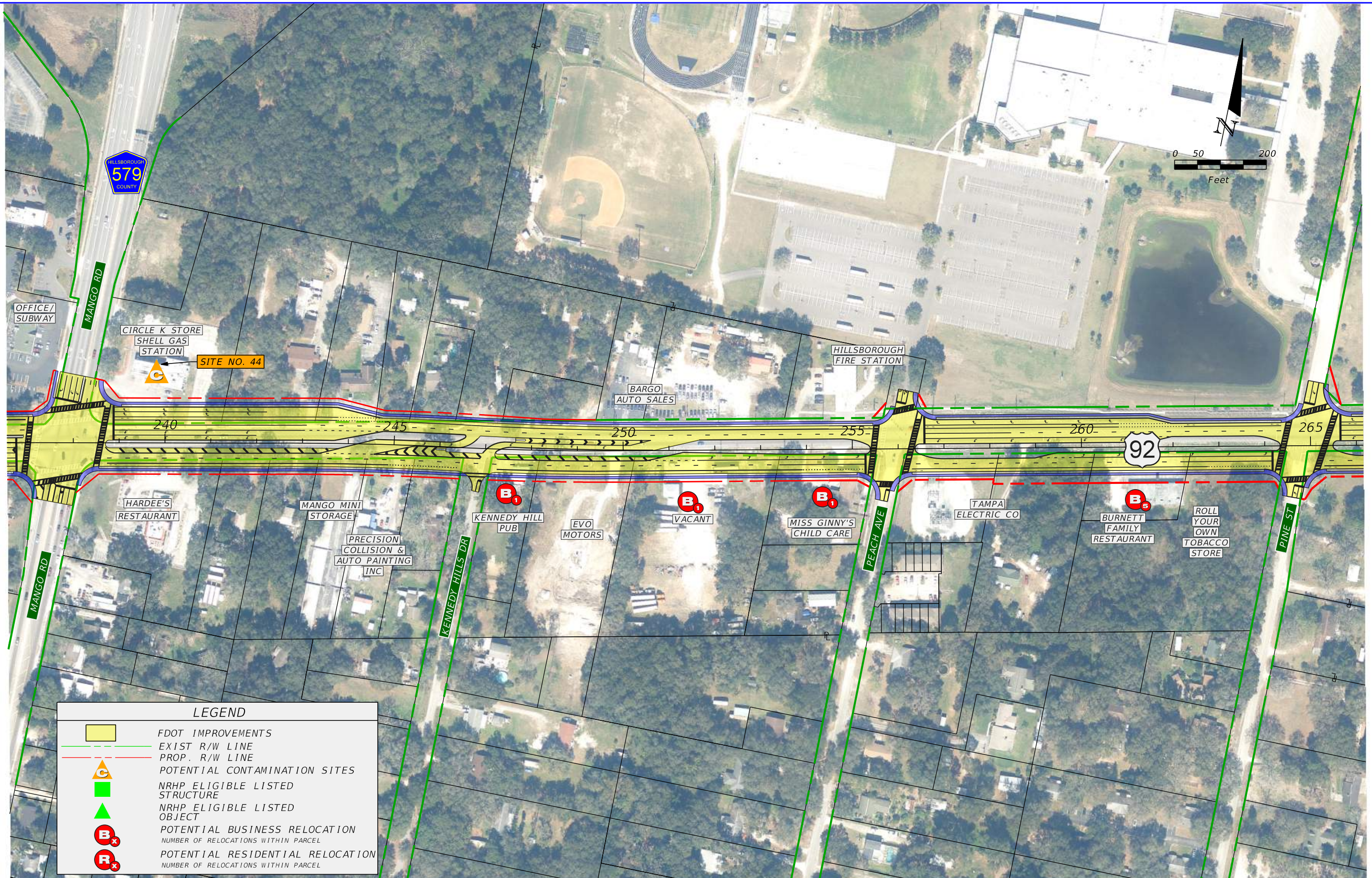
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LEGEND	
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	EXIST R/W LINE
	PROP. R/W LINE
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	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

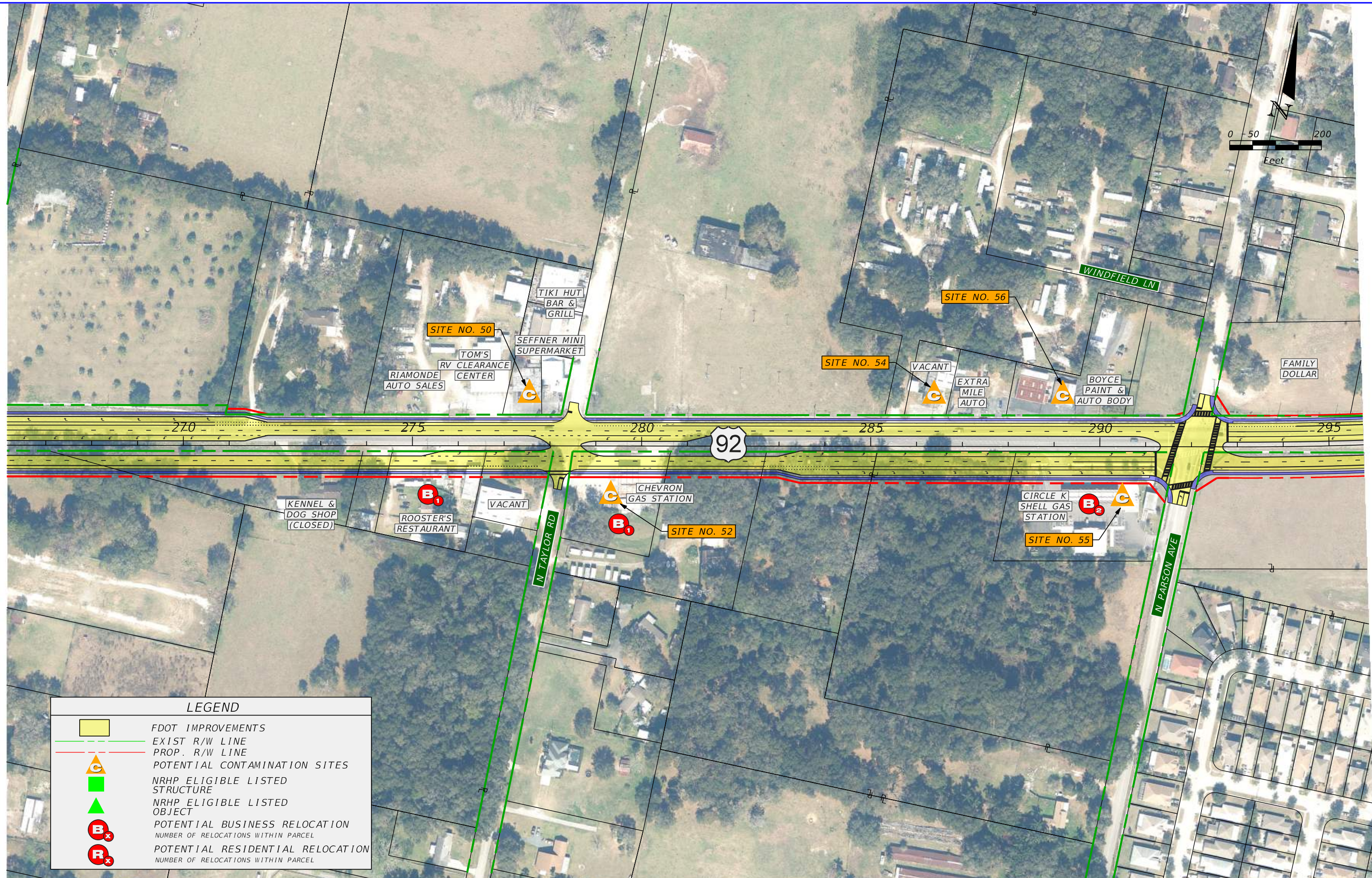
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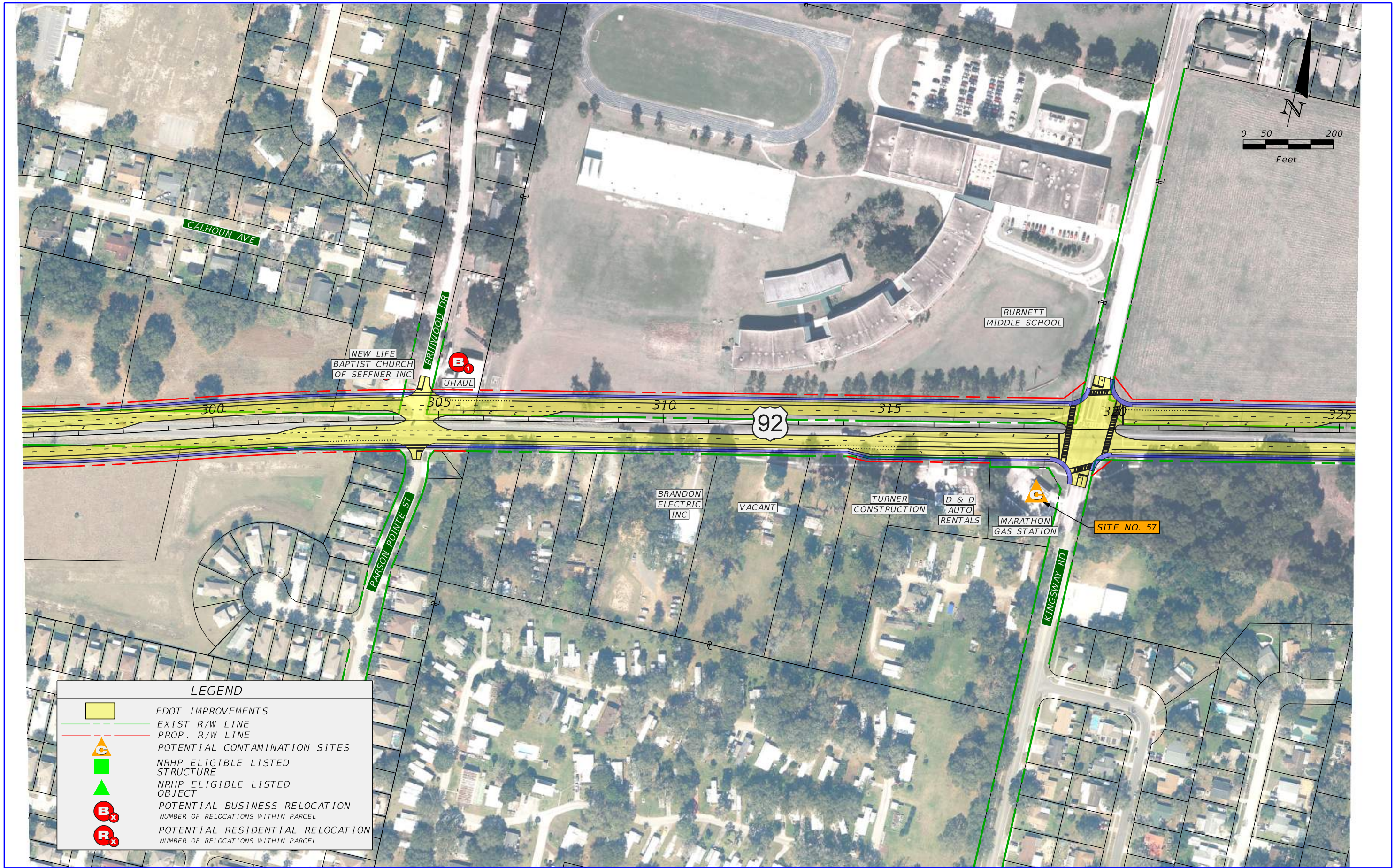
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 6



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	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

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	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
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	NRHP ELIGIBLE LISTED OBJECT
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 8



LEGEND

- FDOT IMPROVEMENTS
- EXIST R/W LINE
- PROP. R/W LINE
- POTENTIAL CONTAMINATION SITES
- NRHP ELIGIBLE LISTED STRUCTURE
- NRHP ELIGIBLE LISTED OBJECT
- B POTENTIAL BUSINESS RELOCATION
- R POTENTIAL RESIDENTIAL RELOCATION

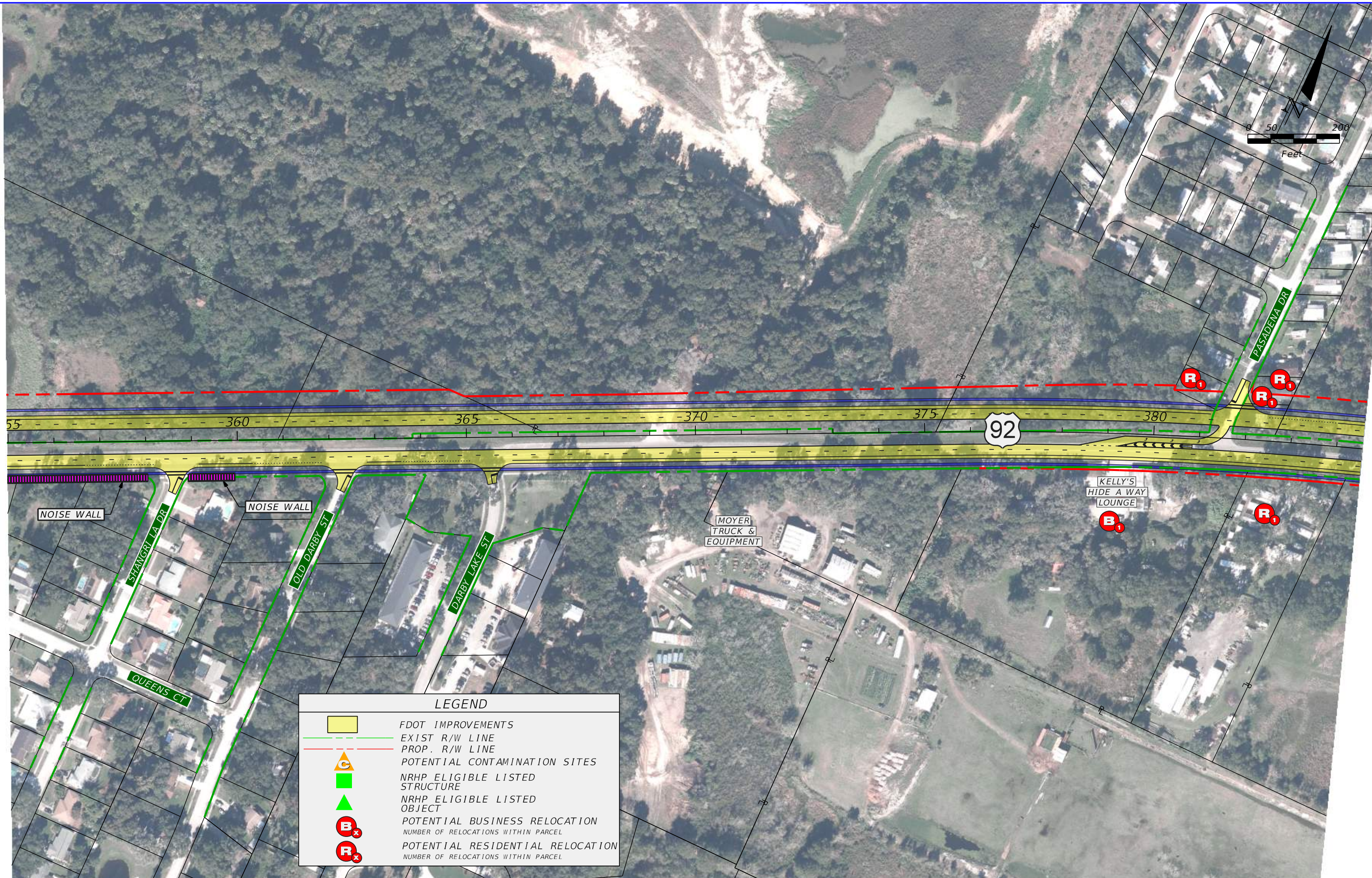
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9



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	PROP. R/W LINE
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	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

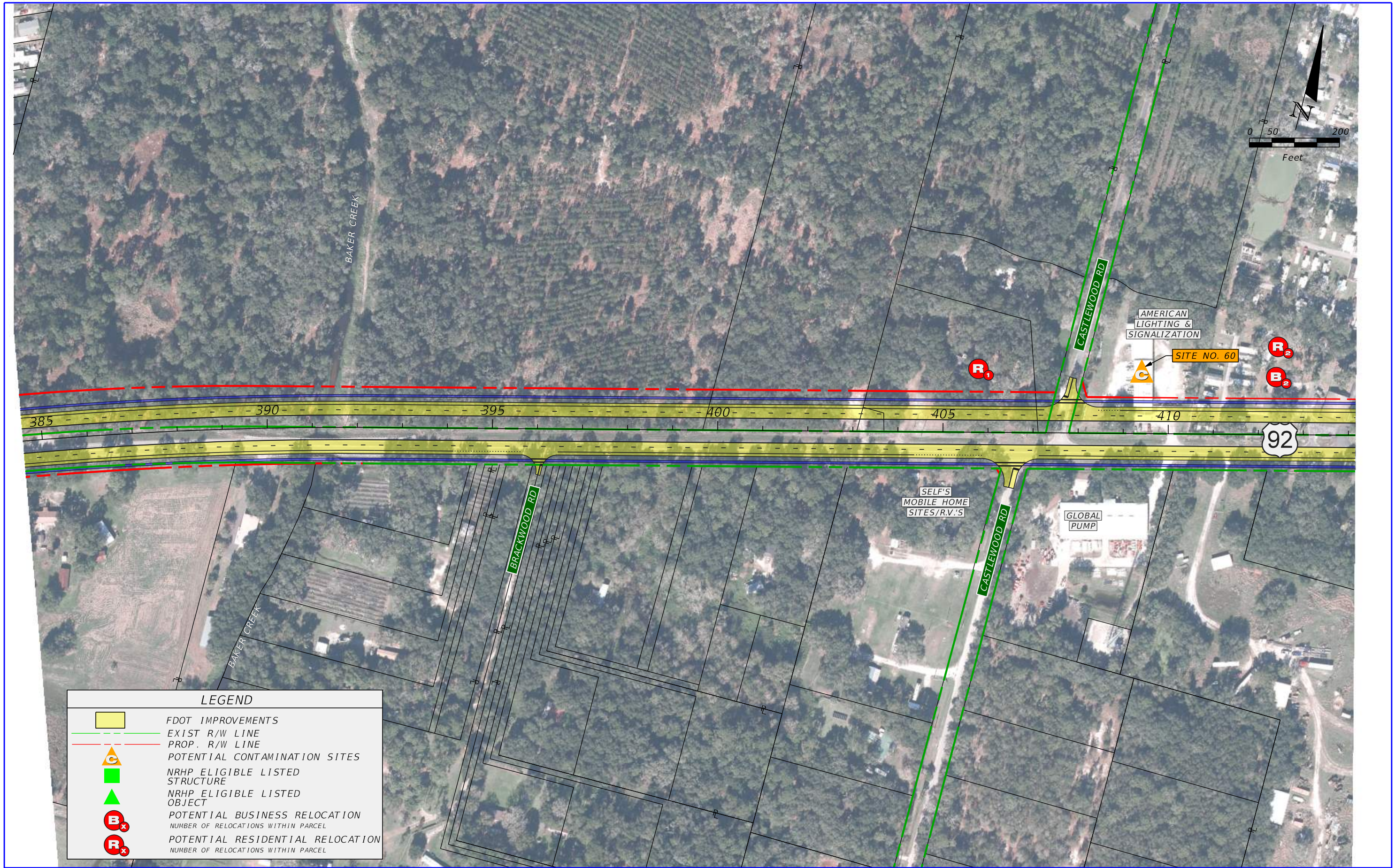
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 10



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	PROP. R/W LINE
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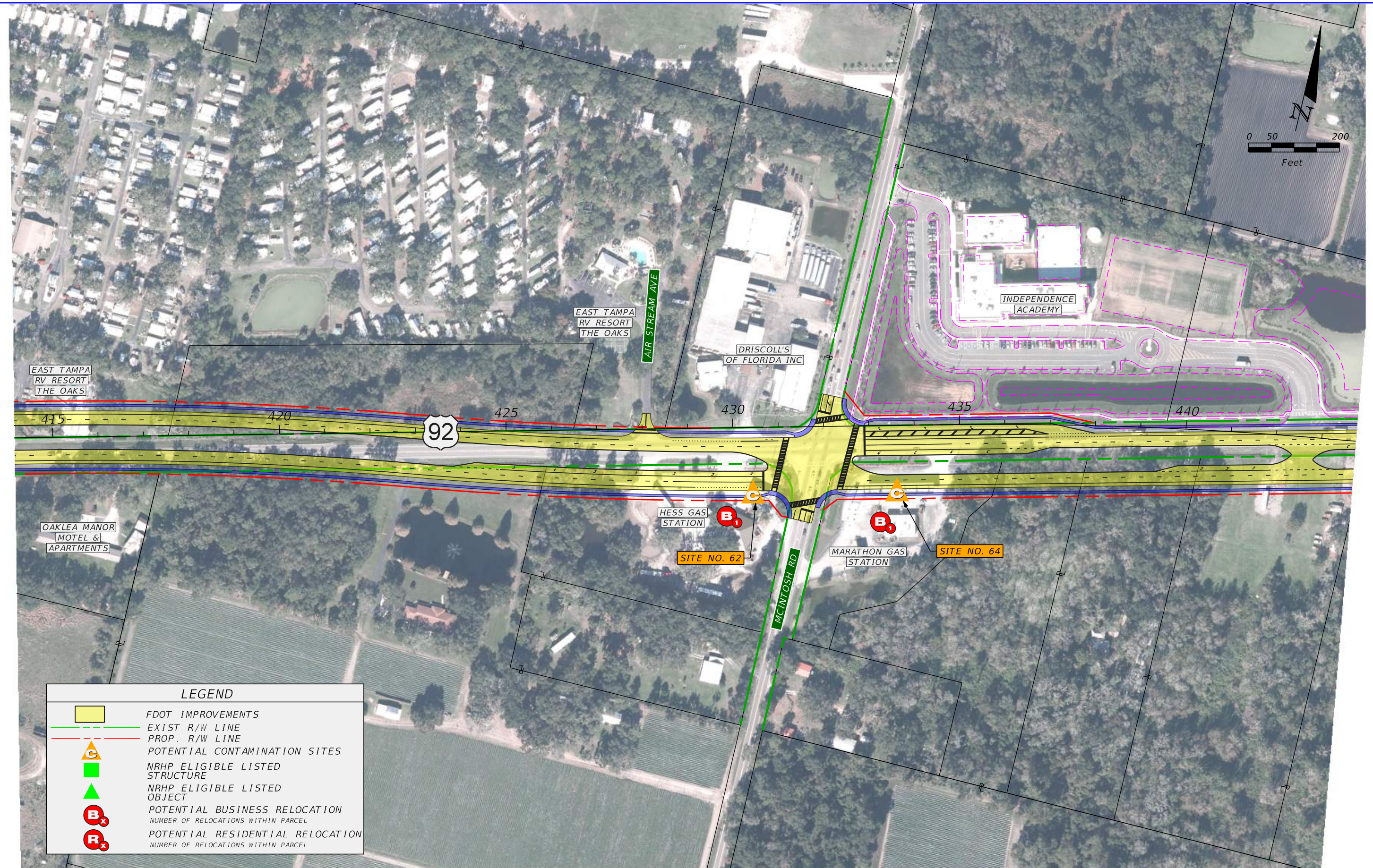
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 11



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	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
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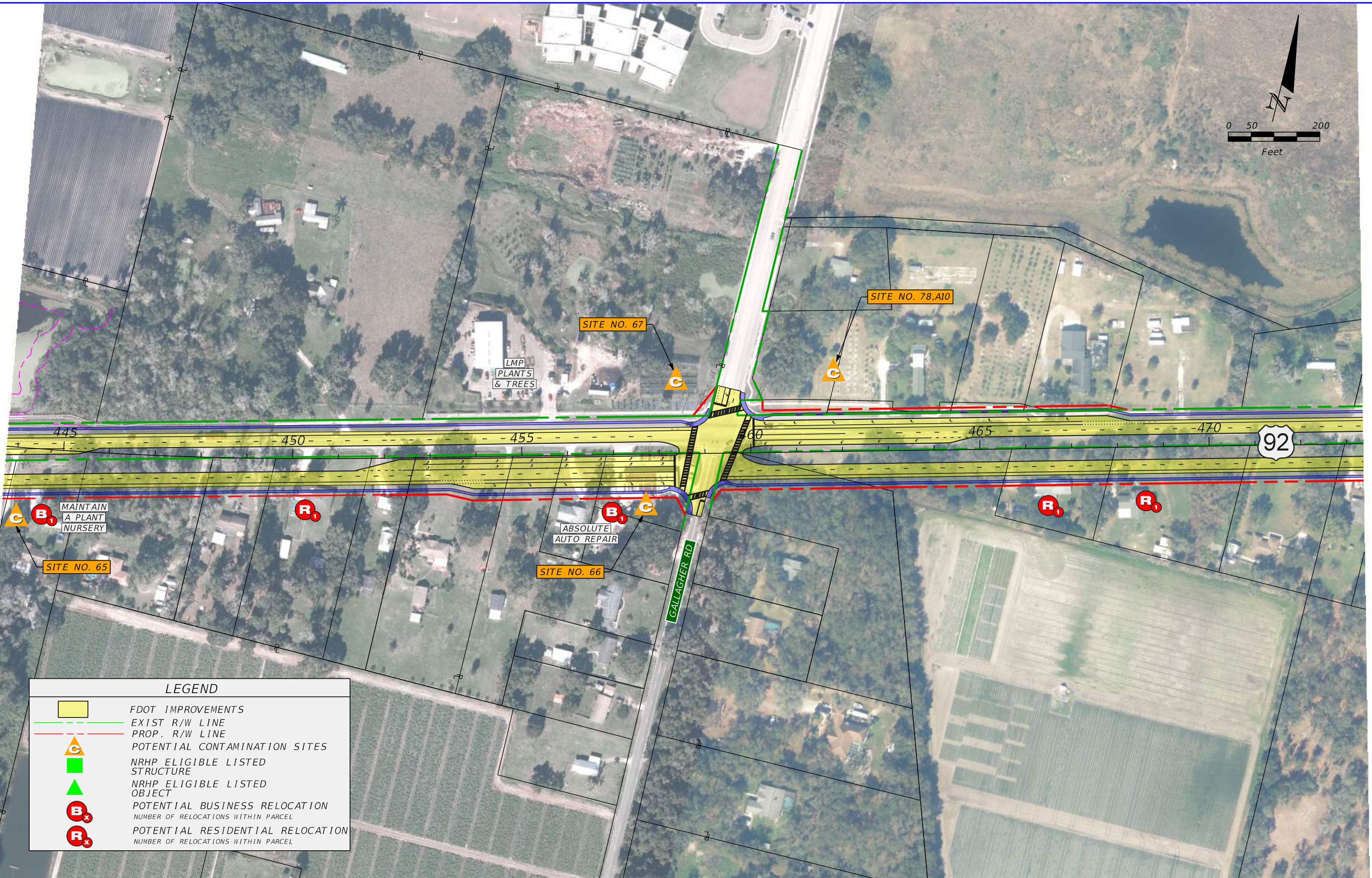
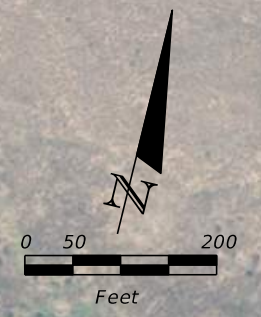
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 12



LEGEND	
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	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
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	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
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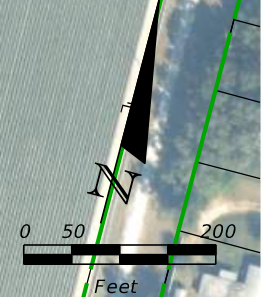
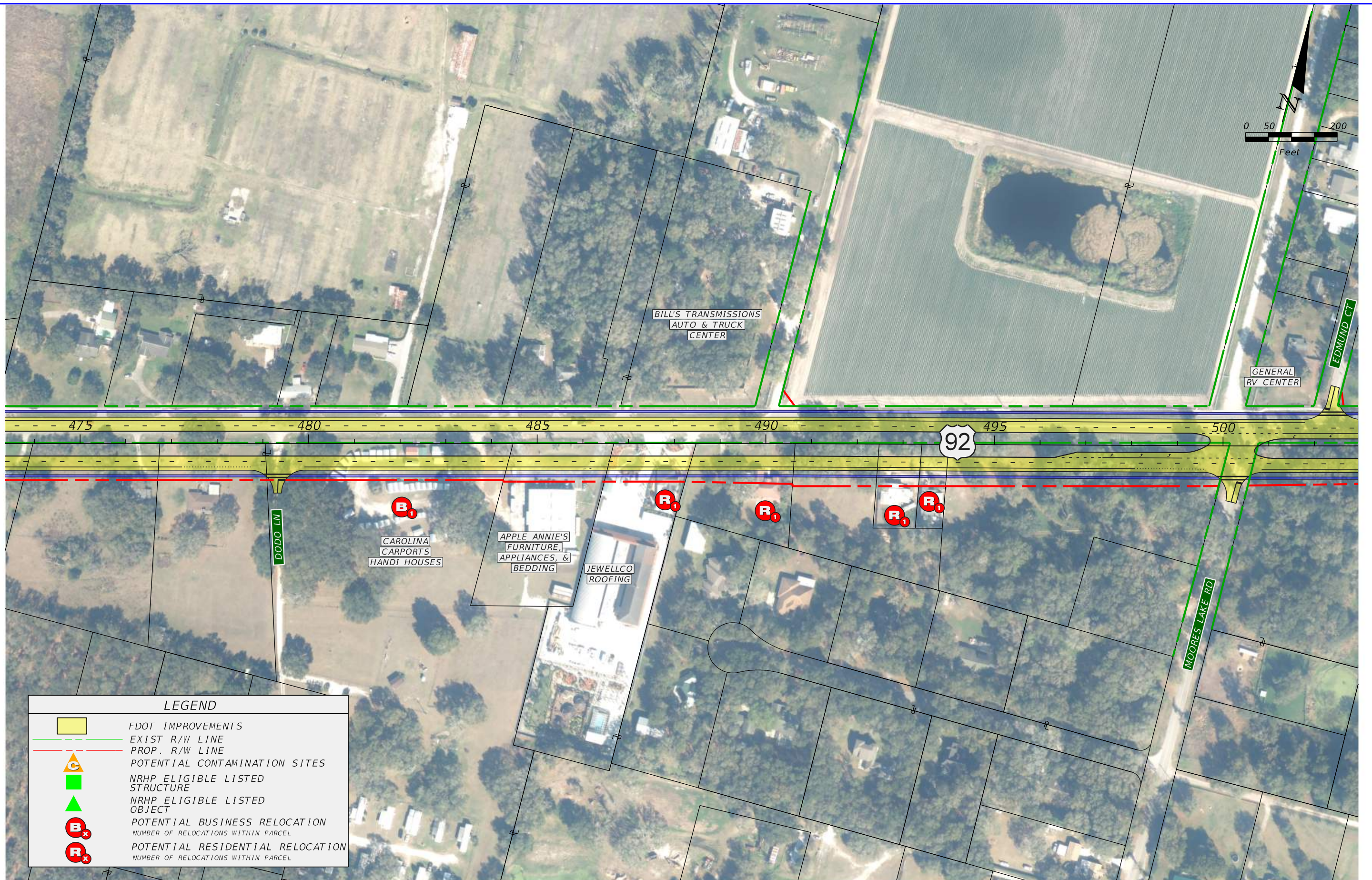
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 13



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	EXIST R/W LINE
	PROP. R/W LINE
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	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

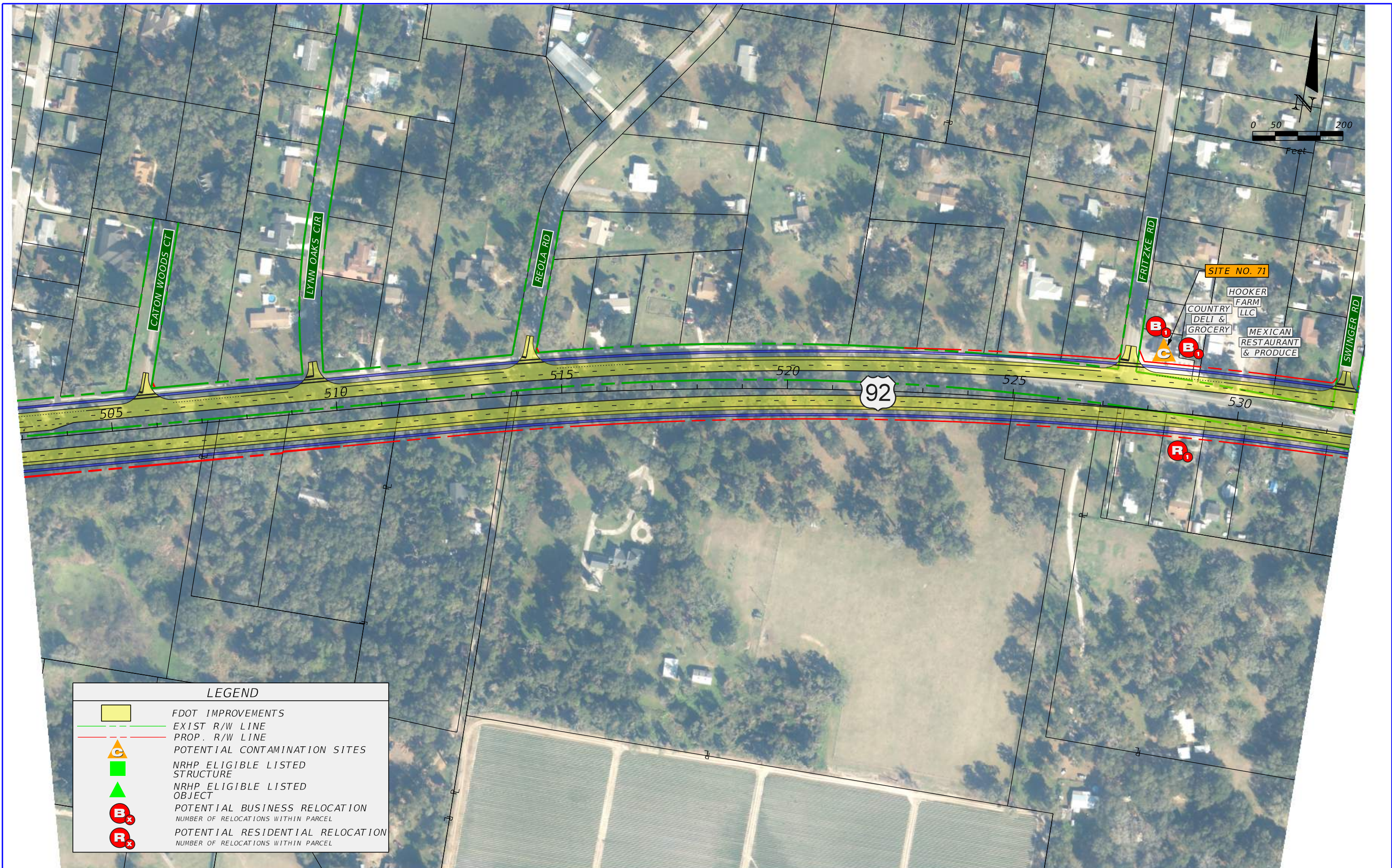
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 14



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
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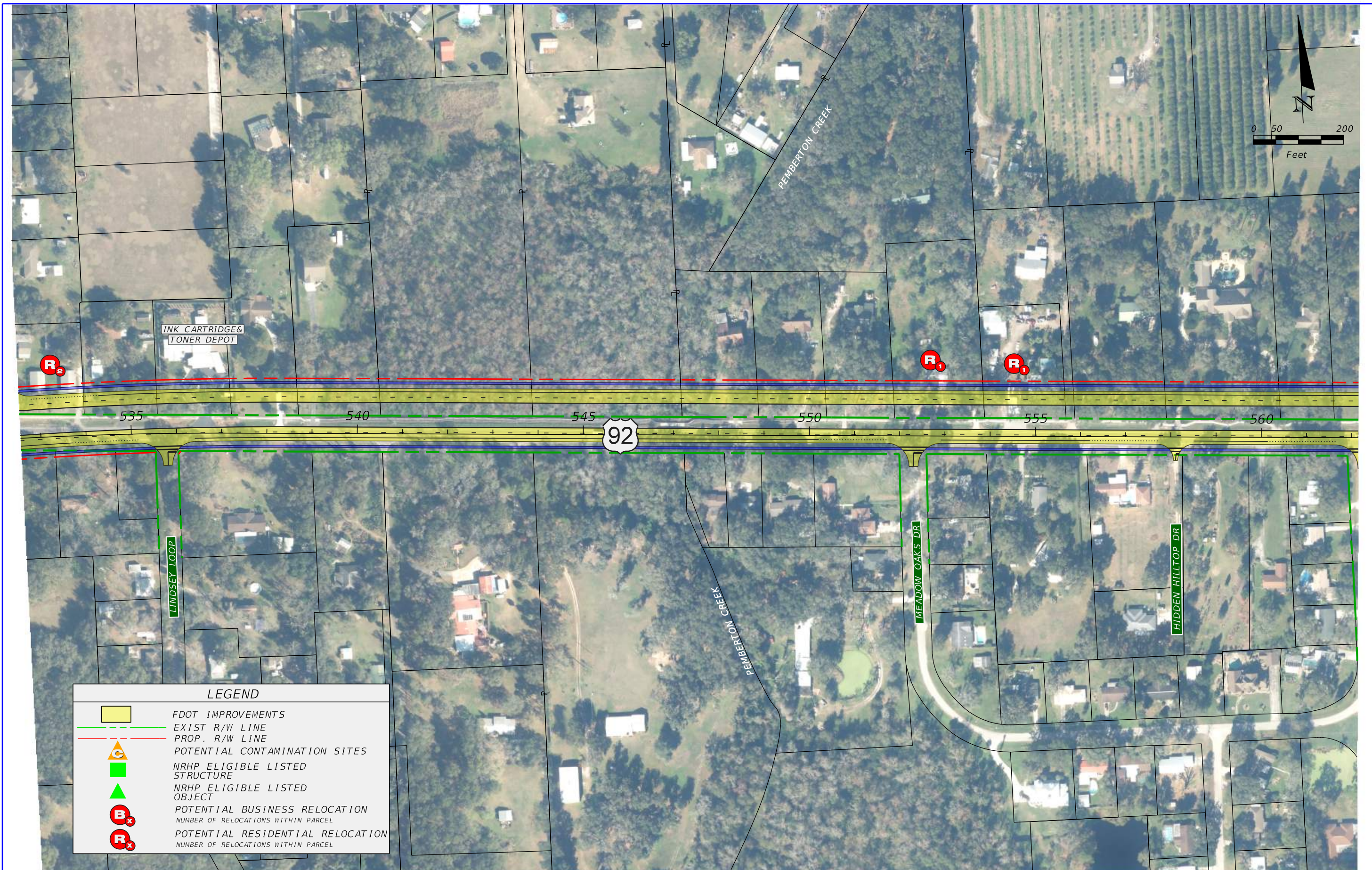
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 15



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

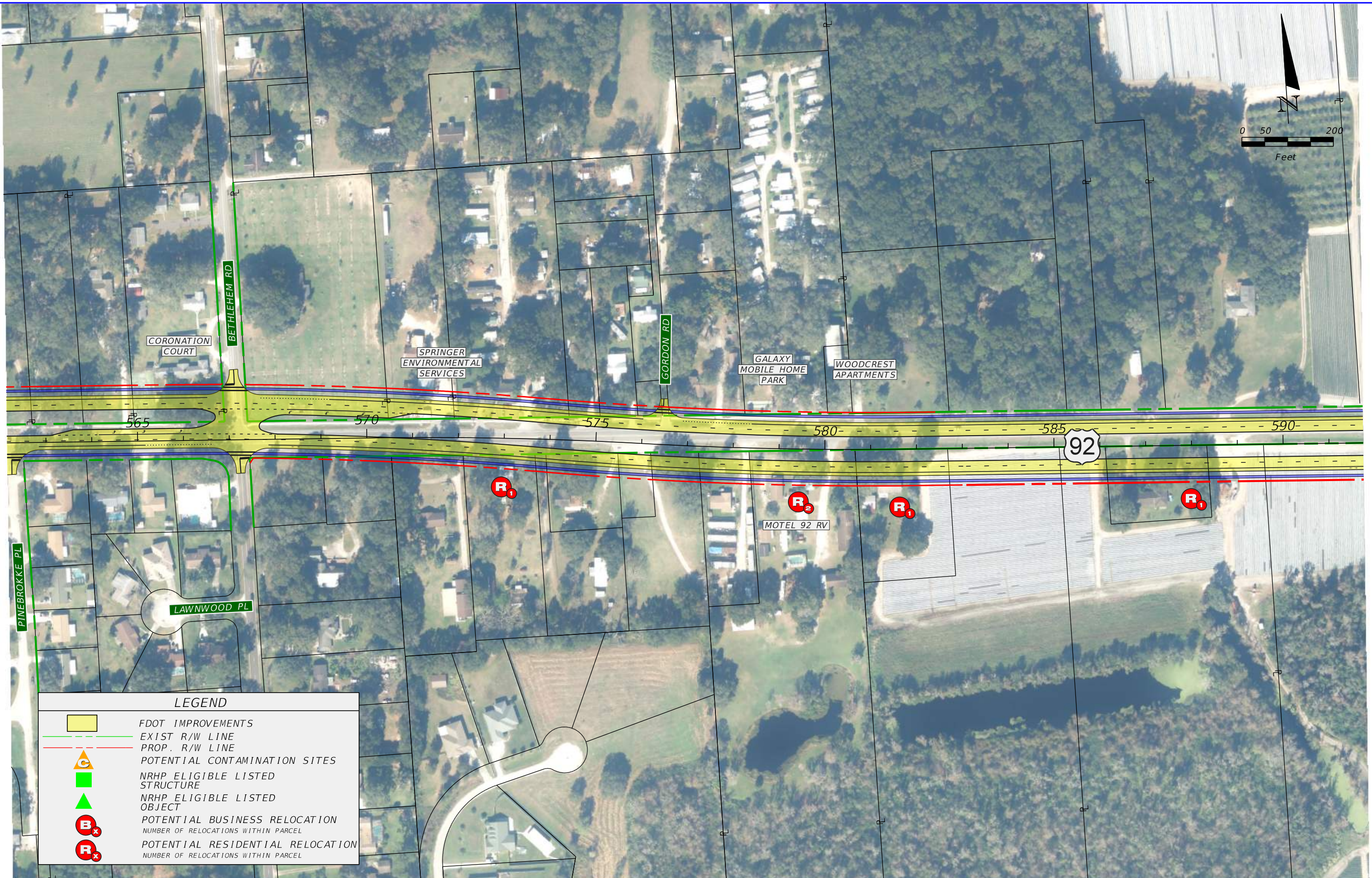
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US 92 / SR 600
 PLAN SHEETS SEG 8
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SHEET NO.
 16



LEGEND

- FDOT IMPROVEMENTS
- EXIST R/W LINE
- PROP. R/W LINE
- C POTENTIAL CONTAMINATION SITES
- NRHP ELIGIBLE LISTED STRUCTURE
- ▲ NRHP ELIGIBLE LISTED OBJECT
- B_x POTENTIAL BUSINESS RELOCATION
NUMBER OF RELOCATIONS WITHIN PARCEL
- R_x POTENTIAL RESIDENTIAL RELOCATION
NUMBER OF RELOCATIONS WITHIN PARCEL

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17



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
 Derek D. Dean, PE
 PE No. 51905
 Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

US 92 / SR 600
 PLAN SHEETS SEG 9
 PREFERRED ALIGNMENT

SHEET NO.
 18



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION
	NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION
	NUMBER OF RELOCATIONS WITHIN PARCEL

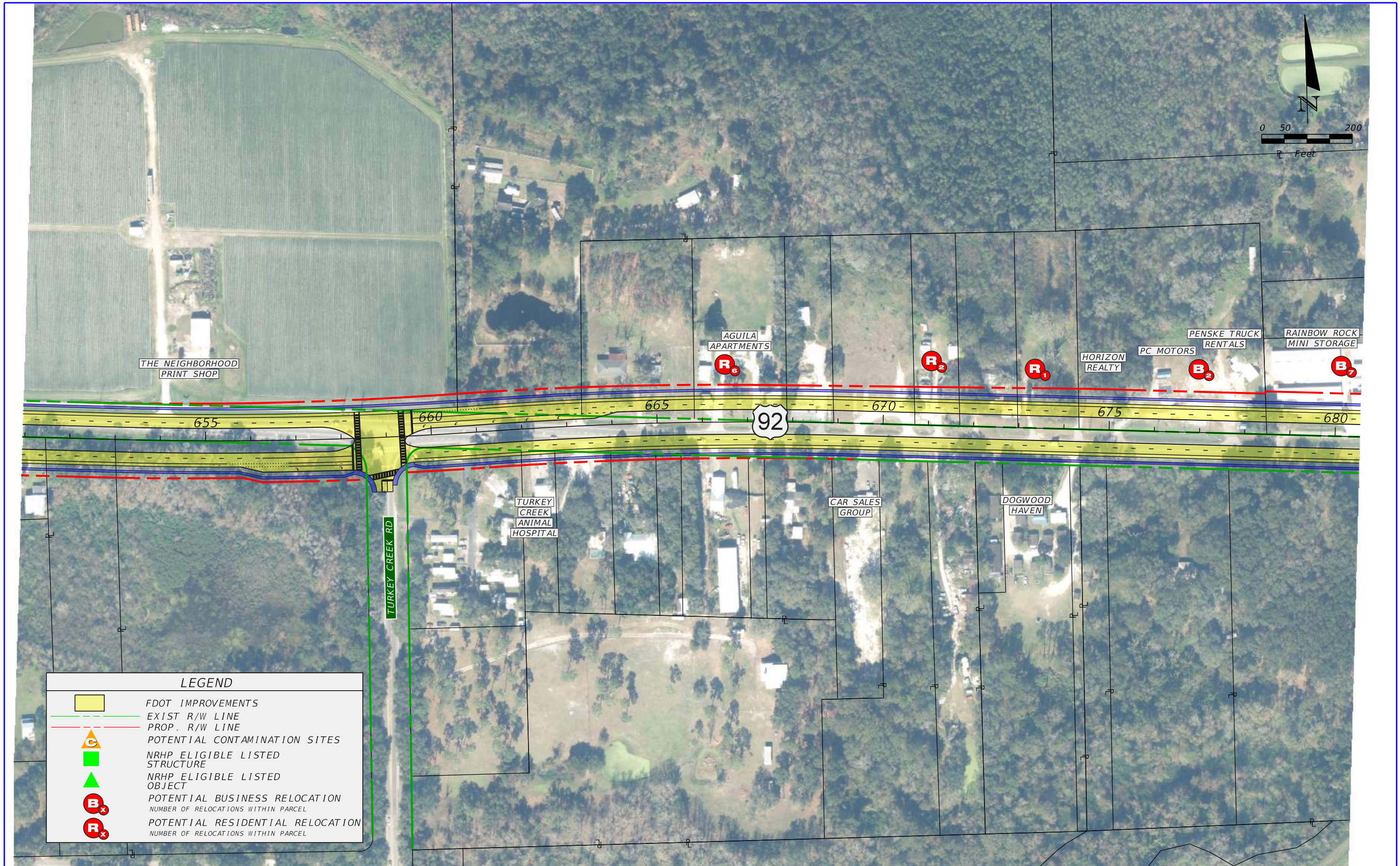
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US 92 / SR 600
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SHEET NO.
 19



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
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	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
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	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

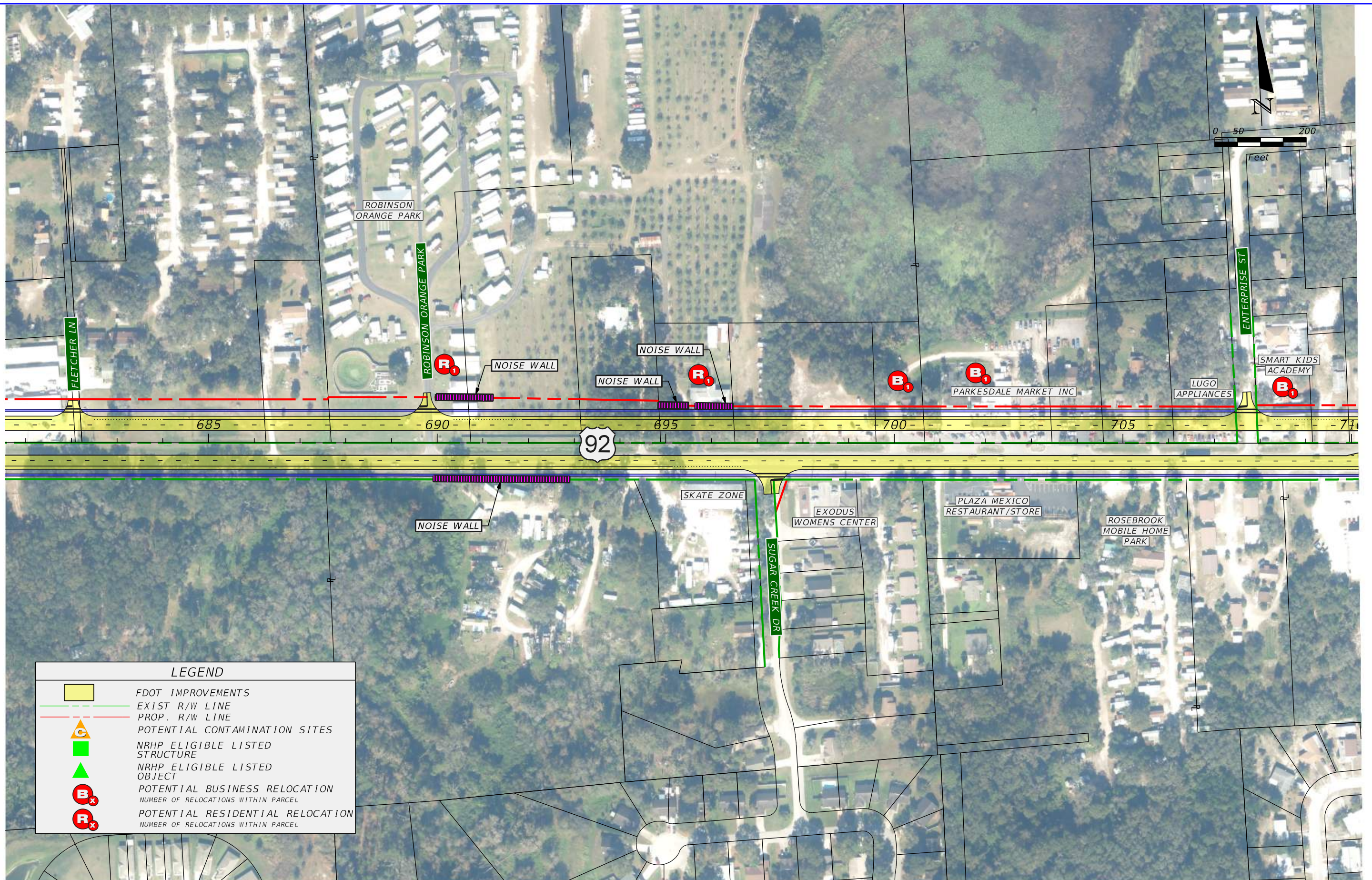
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

US 92 / SR 600
 PLAN SHEETS SEG 9
 PREFERRED ALIGNMENT

SHEET NO.
 20



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
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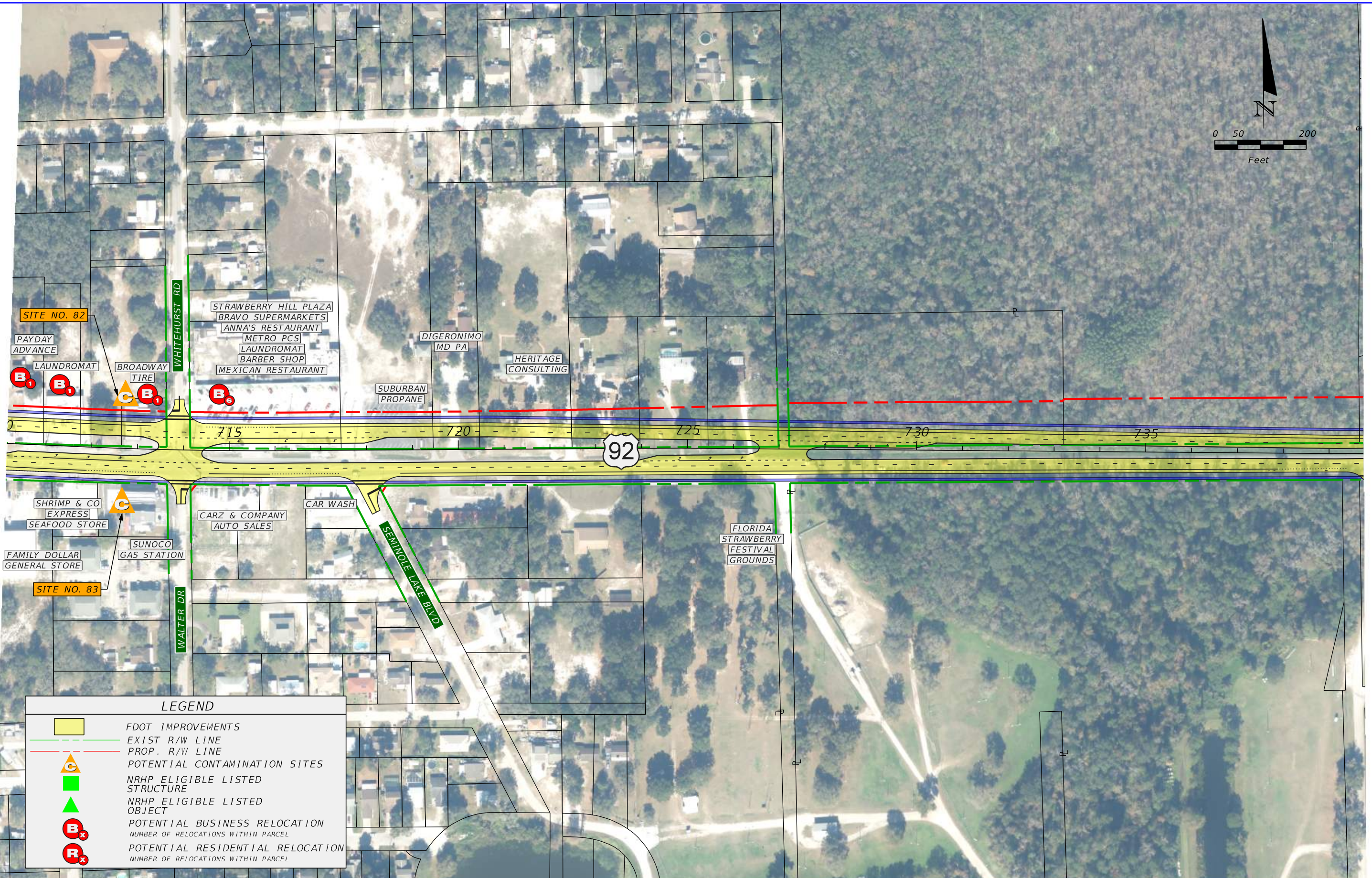
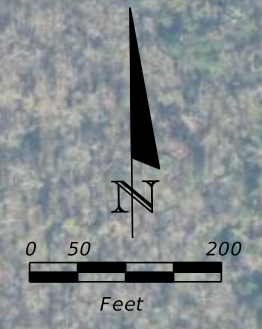
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

**US 92 / SR 600
 PLAN SHEETS SEG 9
 PREFERRED ALIGNMENT**

SHEET
NO.
21



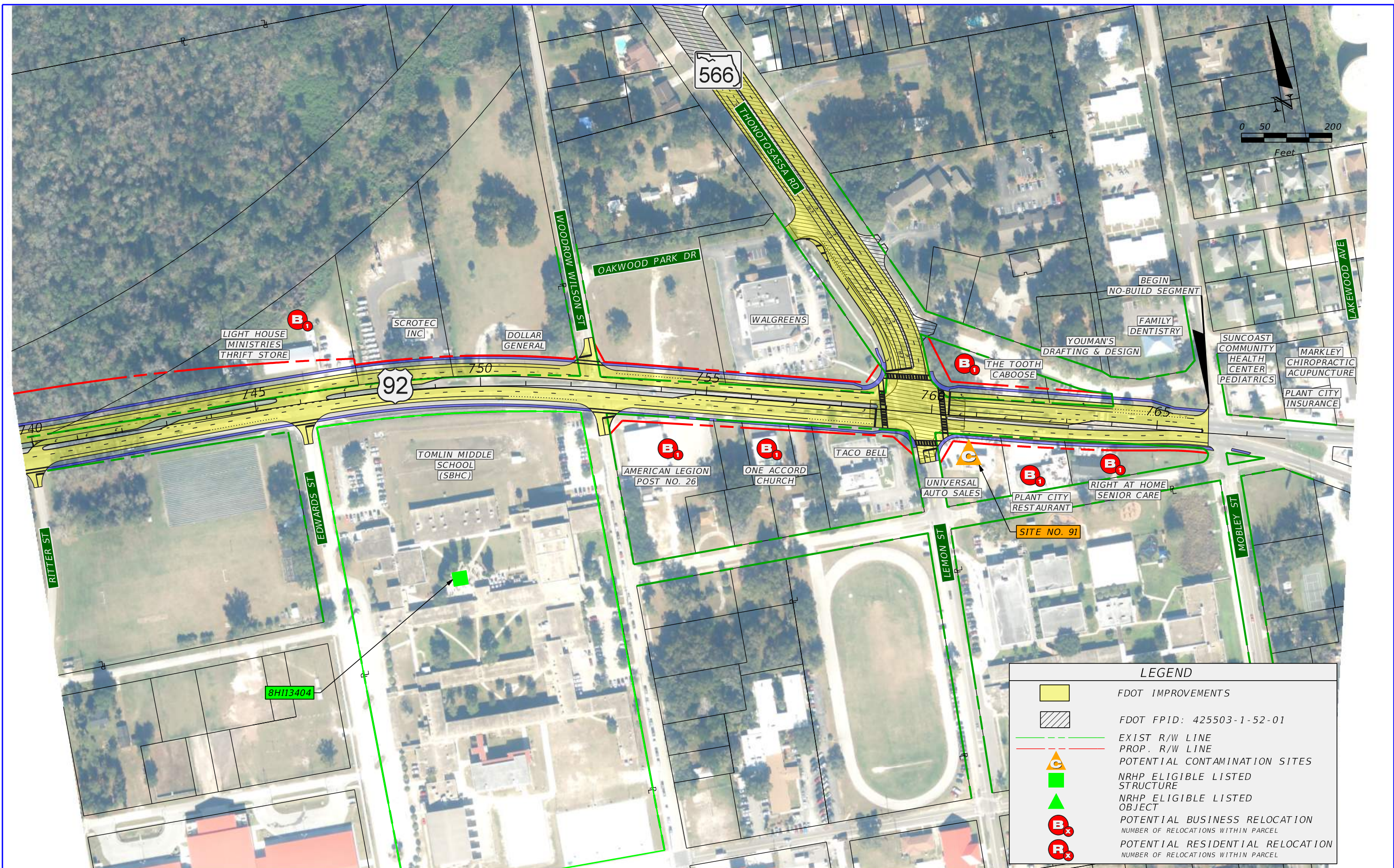
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DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

US 92 / SR 600
 PLAN SHEETS SEG 9
 PREFERRED ALIGNMENT

SHEET NO.
 22



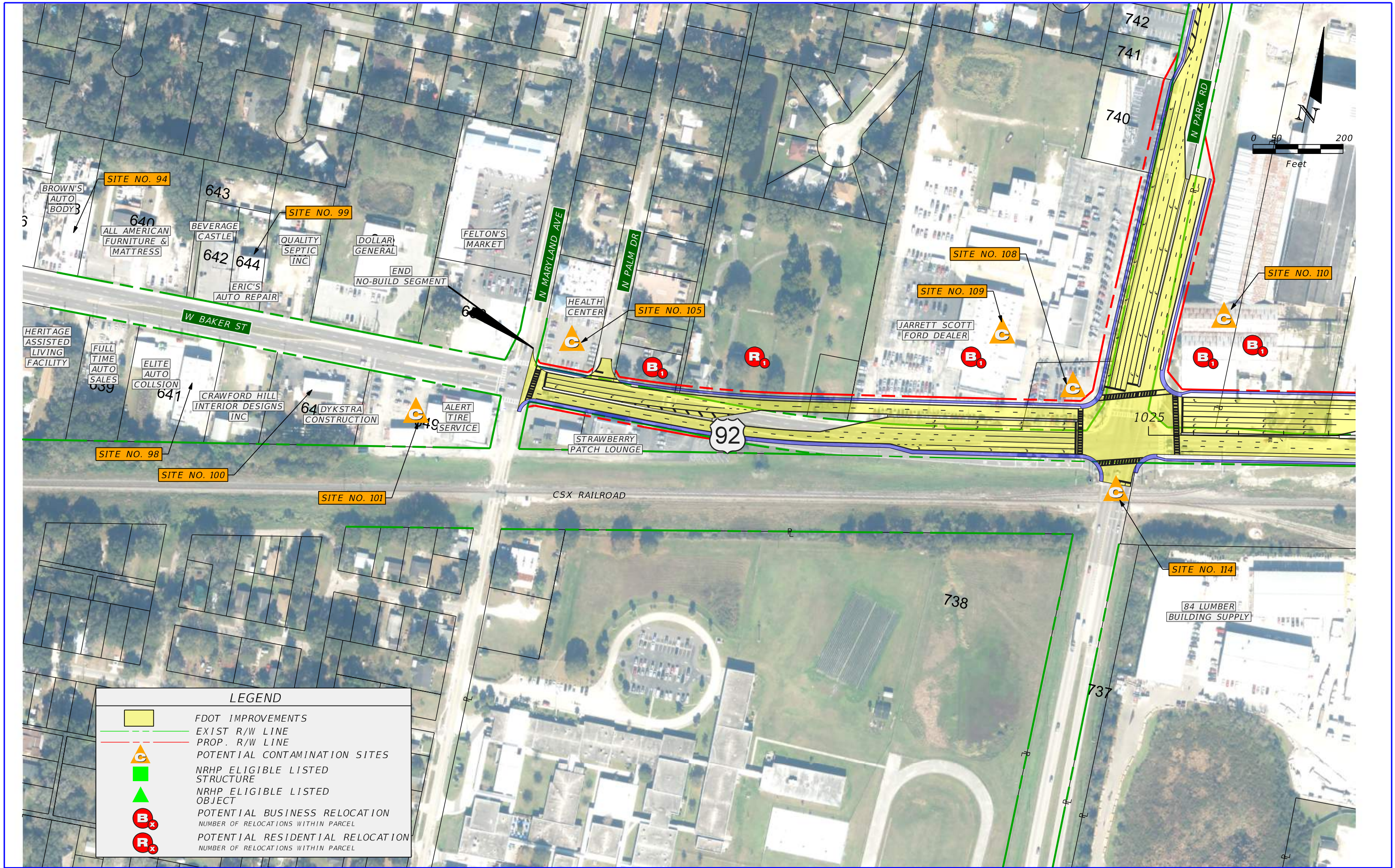
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

US 92 / SR 600
PLAN SHEETS SEG 9
PREFERRED ALIGNMENT

SHEET NO.
23



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
	POTENTIAL BUSINESS RELOCATION
	NUMBER OF RELOCATIONS WITHIN PARCEL
	POTENTIAL RESIDENTIAL RELOCATION
	NUMBER OF RELOCATIONS WITHIN PARCEL

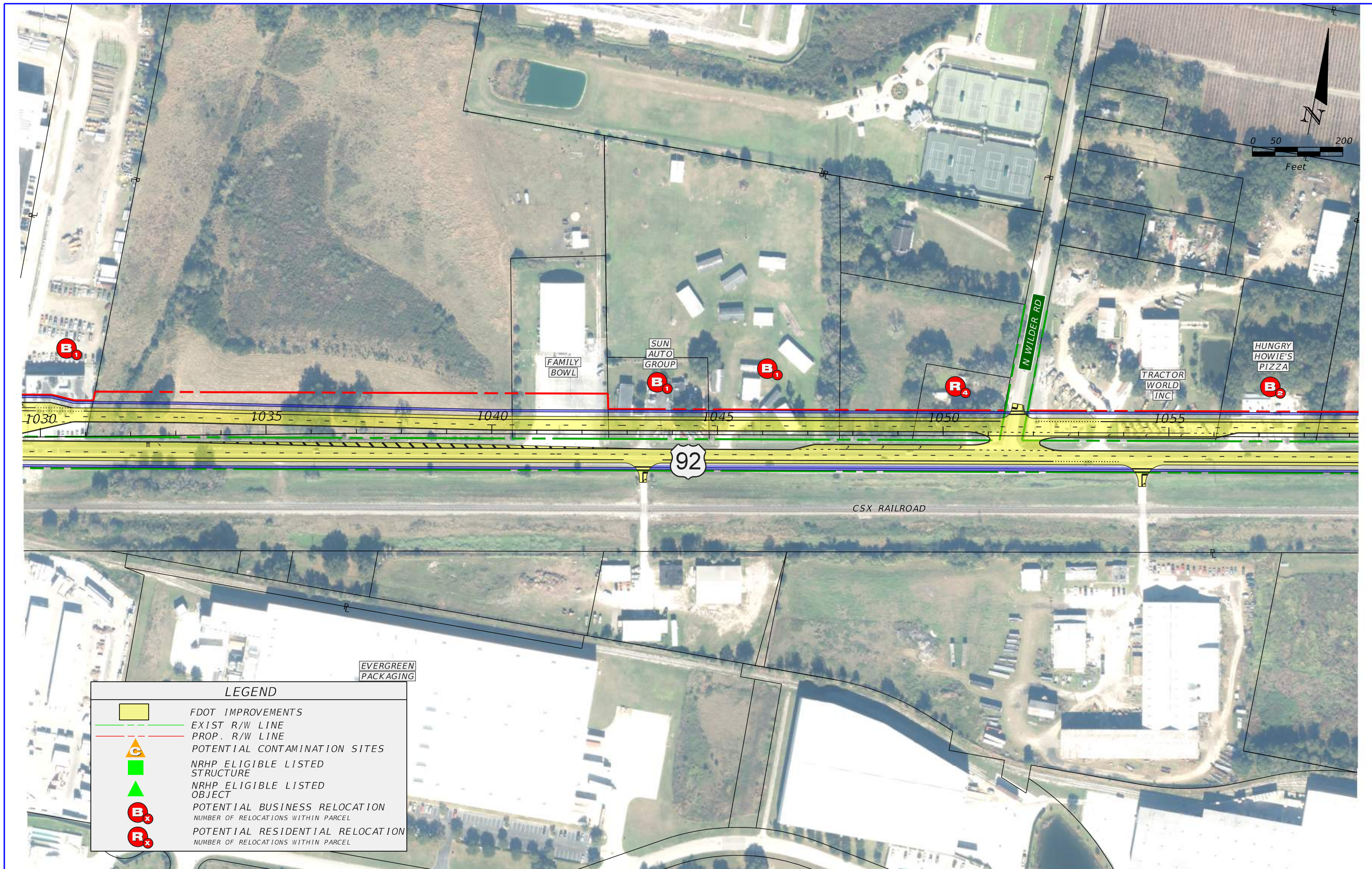
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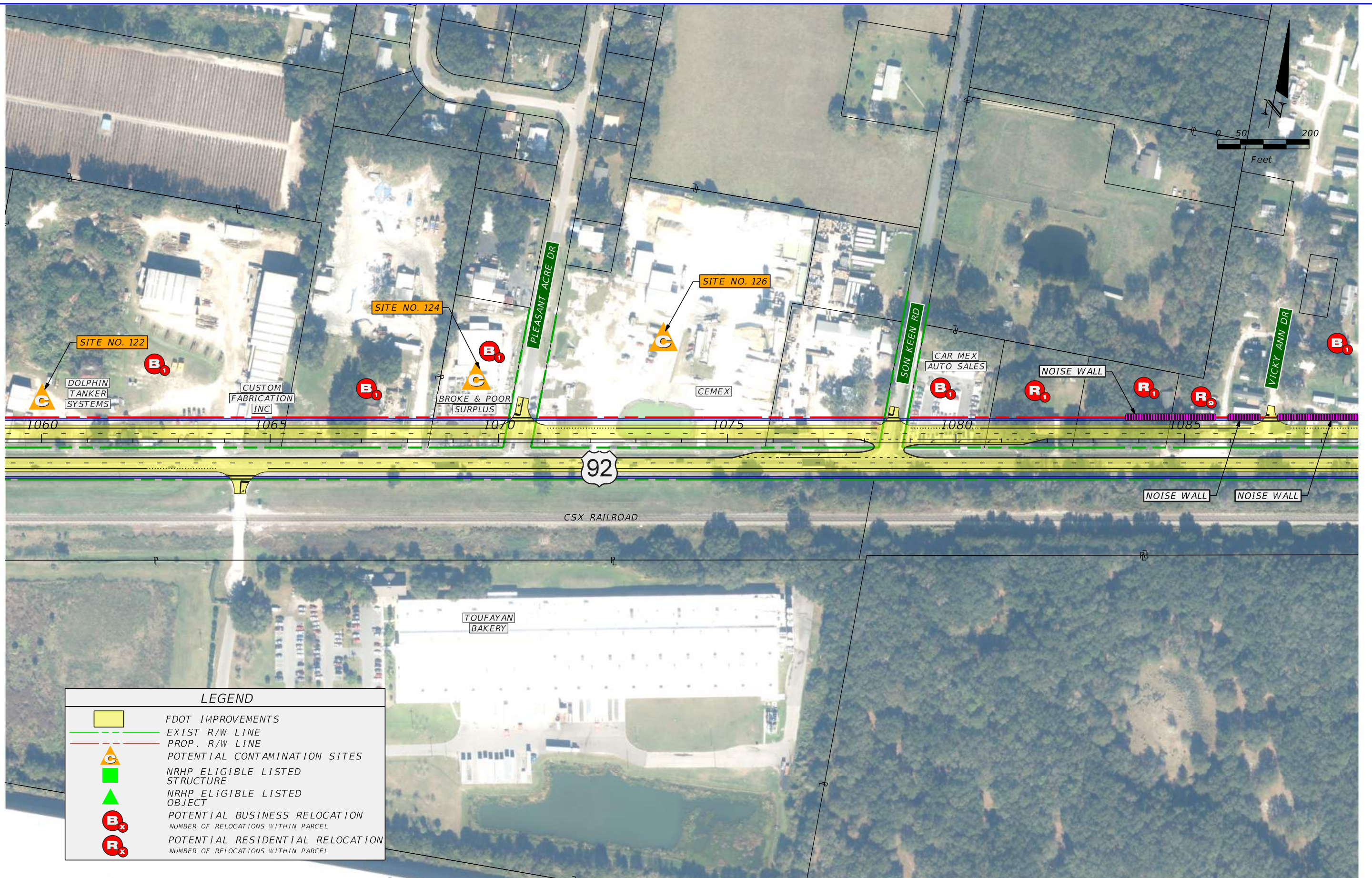
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

US 92 / SR 600
 PLAN SHEETS SEG 11
 PREFERRED ALIGNMENT

SHEET NO.
 24



REVISIONS				ENGINEER OF RECORD Derek D. Dean, PE PE No. 51905 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			US 92 / SR 600 PLAN SHEETS SEG 11 PREFERRED ALIGNMENT	SHEET NO. 25
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					600	HILLSBOROUGH	435749-1-22-01		



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
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REVISIONS				ENGINEER OF RECORD Derek D. Dean, PE PE No. 51905 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			US 92 / SR 600 PLAN SHEETS SEG 11 PREFERRED ALIGNMENT	SHEET NO. 26
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					600	HILLSBOROUGH	435749-1-22-01		



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
	NRHP ELIGIBLE LISTED OBJECT
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REVISIONS				ENGINEER OF RECORD Derek D. Dean, PE PE No. 51905 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			US 92 / SR 600 PLAN SHEETS SEG 11 PREFERRED ALIGNMENT	SHEET NO. 27
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					600	HILLSBOROUGH	435749-1-22-01		



LEGEND	
	FDOT IMPROVEMENTS
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
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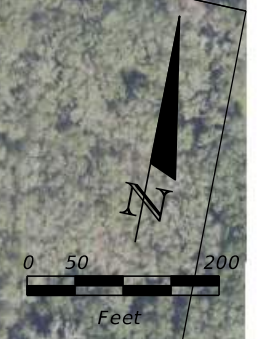
REVISIONS			
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ENGINEER OF RECORD
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

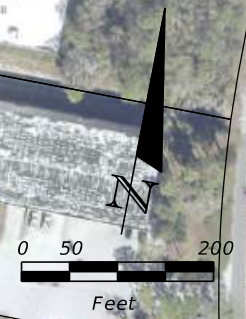
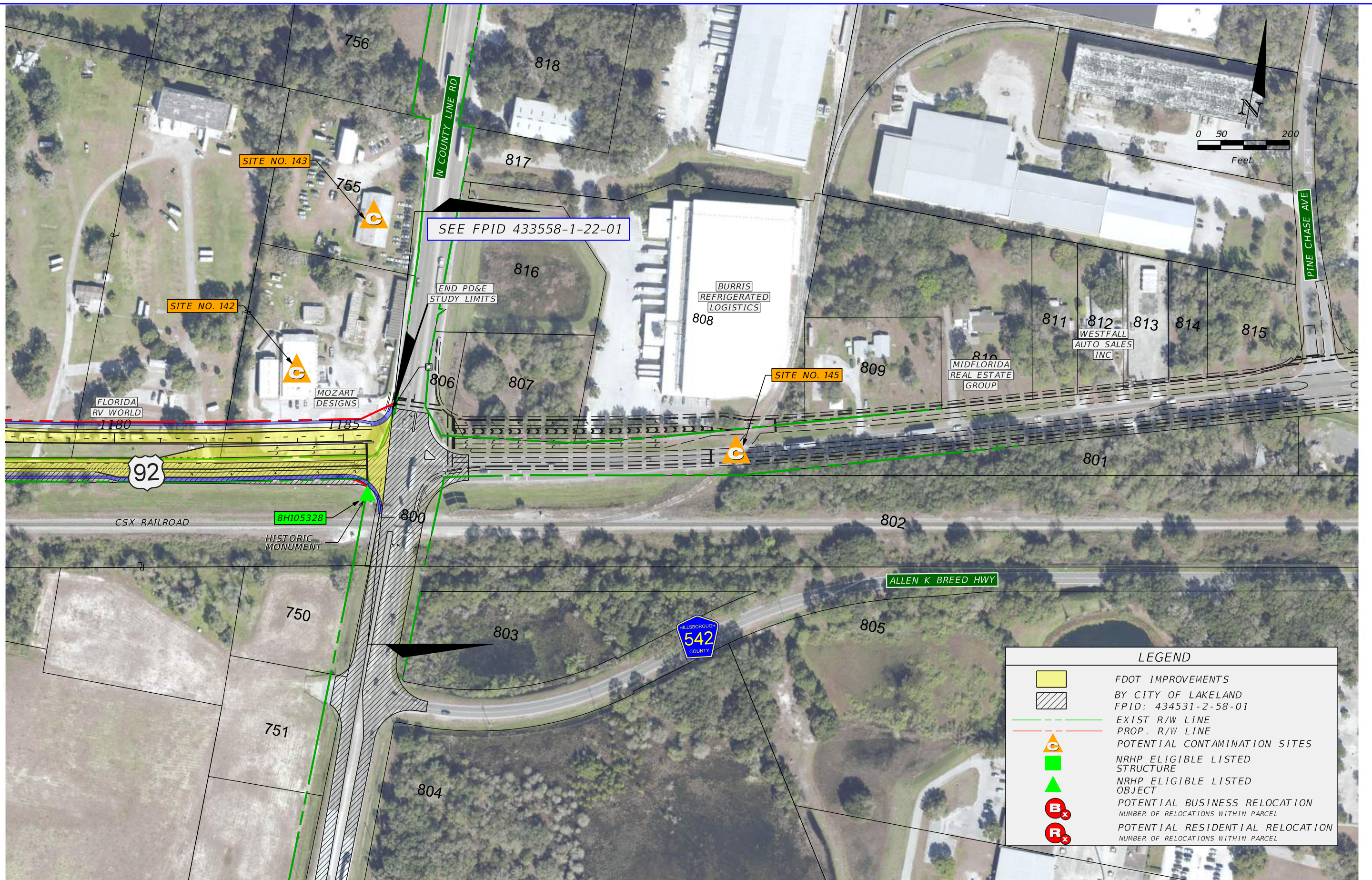
US 92 / SR 600
 PLAN SHEETS SEG 11
 PREFERRED ALIGNMENT

SHEET NO.
 28



LEGEND	
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	BY CITY OF LAKELAND FPID: 434531-2-58-01
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
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REVISIONS				ENGINEER OF RECORD Derek D. Dean, PE PE No. 51905 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			US 92 / SR 600 PLAN SHEETS SEG 11 PREFERRED ALIGNMENT	SHEET NO. 29
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					600	HILLSBOROUGH	435749-1-22-01		



LEGEND	
	FDOT IMPROVEMENTS
	BY CITY OF LAKELAND FPID: 434531-2-58-01
	EXIST R/W LINE
	PROP. R/W LINE
	POTENTIAL CONTAMINATION SITES
	NRHP ELIGIBLE LISTED STRUCTURE
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	POTENTIAL RESIDENTIAL RELOCATION NUMBER OF RELOCATIONS WITHIN PARCEL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
 Derek D. Dean, PE
 PE No. 51905
 Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
600	HILLSBOROUGH	435749-1-22-01

**US 92 / SR 600
 PLAN SHEETS SEG 11
 PREFERRED ALIGNMENT**

SHEET
NO.
30

Appendix C

Agency Correspondence



Florida Department of Transportation

RICK SCOTT
GOVERNOR

11201 N. McKinley Drive
Tampa, Florida 33612-6456

JIM BOXOLD
SECRETARY

September 7, 2016

Dr. Timothy A. Parsons, Ph.D., Director
State Historic Preservation Officer
Florida Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399-0250

Attention: Transportation Compliance Review Program

RE: SR 600 (US 92) Project Development and Environment (PD&E) Study
Re-Evaluation from East of I-4 to East of County Line Road
Work Program Item Segment No.: 435749-1
FAP No.: TBD
Hillsborough County, Florida

Dear Dr. Parsons:

The Florida Department of Transportation (FDOT), District Seven is preparing a Project Development and Environment (PD&E) Study Re-Evaluation for the proposed widening of SR 600 (US 92) from east of Interstate 4 (I-4) to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The original PD&E Study was completed in 1994. The Study recommended a build alternative from east of I-4 to Mobley Street and from Park Road to County Line Road. The no-build alternative was selected for the segment between Mobley Street and Park Road with the exception of improving one section of Baker Street where it was recommended for conversion to an urban section between Mobley Street and Whitehall Street. Due to a change in design standards and existing conditions, the project's PD&E study is being re-evaluated. The no-build alternative between Mobley Street and Park Road remains as the recommended alternative. Sidewalk and drainage improvements were made to the section of Baker Street between Mobley Street and Whitehall Street which meet the intent of the original PD&E study recommendation for this segment of the project.

A Cultural Resource Assessment Survey (CRAS) Update was prepared for this project and submitted to your office on March 17, 2016. In July 2016, the CRAS Update was revised based on comments provided by Alyssa McManus (letter dated May 10, 2016). At this time, edits were made to the original report and select pages were resubmitted. The CRAS Update was again revised in August 2016. At this time, the eligibility for previously recorded Frame Vernacular style residence located at 104 Thrasher Road (8HI04739) was updated and revised pages resubmitted. Enclosed are

2016 SEP -8 PM 1:21
FDOT
DISTRICT SEVEN
HISTORIC PRESERVATION

one set of revised pages to the CRAS Update (February 2016, Revised August 2016) that were prepared for the above referenced project.

The CRAS Update included background research and a field survey. The purpose was to locate and identify any archaeological sites and historic resources located within the project area of potential effect (APE) and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). This is an update to the CRAS that was prepared for the original PD&E Study. The SR 600 (US 92) PD&E Re-evaluation will replicate the original PD&E approved alignment with modifications as needed. As a result, the project is planned to be mostly developed within the existing right-of-way. A CRAS of the original PD&E corridor was performed in 1991-1992 (ACI 1993), and approved by the SHPO in October 1993. Therefore, systematic archaeological field survey will focus only on areas of new right-of-way. For historic resources, the APE is defined as the properties adjacent to the existing and proposed right-of-way. As contained within these adjacent properties, only the historic resources located within 200 feet of the existing and proposed right-of-way were recorded and evaluated. No improvements to the approximate two-mile long one-way pair system through Plant City between Mobley Street and Park Road (Segment 10) are anticipated. However, the historic resources located along Reynolds Street (US 92 Eastbound) between Mobley Street and Park Road were included in the CRAS. Stormwater management facilities and floodplain compensation sites have been preliminarily sized for the project's ongoing PD&E Study, and an addendum to the CRAS will be prepared to document the historical and archaeological evaluations for these locations later in the PD&E Study.

Background research indicated that 14 previously recorded archaeological sites are located, at least in part, within the project archaeological APE. All were evaluated as ineligible for listing in the NRHP by the SHPO. Limited field survey did not confirm the presence of any of these sites within the project APE. Field survey focused on areas of newly proposed right-of-way yielded negative results. Given these results, and the findings of previous investigations, there are no archaeological sites within the project APE that are listed, eligible, or considered potentially eligible for listing in the NRHP.

Historical/architectural field survey resulted in the identification of 510 historic resources within the project APE, including 102 extant previously recorded and 408 newly identified encompassing 476 buildings, 26 historic districts and building complex resource groups, four bridges, two objects, and two linear resources. In addition, 20 previously recorded historic resources were confirmed demolished.

As a result of field survey, 71 NRHP-listed, eligible and potentially eligible historic resources were located within the SR 600 (US 92) project APE. Of these, 44 were previously listed or determined eligible by the SHPO, and 27 were newly evaluated as potentially eligible. These include two historic districts, three building complex resource groups, one object, and 65 buildings.

Dr. Timothy Parsons, SHPO
SR 600 (US 92) Project Development and Environment (PD&E) Study
Re-Evaluation from East of I-4 to East of County Line Road
Work Segment No.: 435749-1
September 7, 2016
Page 3 of 4

No NRHP-listed, eligible, or potentially eligible historic resources were identified within evaluation Segments 2 through 8. Twelve historic resources, including one potentially eligible building complex resource group (8HI04634) with 11 contributing resources, are contained within Segment 1; nine historic resources, including one potentially eligible building complex resource group (8HI13404) with eight contributing resources, are contained within Segment 9; and one individually significant historic resource (8HI05328) is located within Segment 11. Forty-nine of the total significant historic resources are contained within Segment 10, the no-build alternative. These include one NRHP listed individual property (8HI00174) plus three historic districts and building complex resource groups (8HI05386, 8HI05923, and 8HI13405) that collectively contain 45 contributing resources within the project APE. Although there are significant historic resources identified within Segment 10, the proposed project should have no effect on the resources since this segment will only have a no-build alternative.

A previously recorded Frame Vernacular style residence located at 104 Thrasher Road (8HI04739), was determined ineligible by the SHPO in 1993 and was re-evaluated as part of this study (August 2016). After revisiting the site and collecting additional background information this resource remains ineligible for listing in the NRHP. This residence is located within build Segment 11.

This information is being provided in accordance with the provisions of the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 CFR, Part 800, as well as the provisions contained in the revised Chapter 267, Florida Statutes.

Provided you approve the recommendations and findings in the enclosed cultural resource document, please sign below for concurrence. If you have any questions, please contact me at (813) 975-6496 or robin.rhinesmith@dot.state.fl.us or Rebecca Spain Schwarz at (813) 281- 8308 or rebecca.spain-schwarz@atkinsglobal.com.

Sincerely,



Robin M. Rhinesmith
Environmental Administrator

RR/RSS
Enclosure

cc:	Cathy Kendall (FHWA)	Roy Jackson (FDOT SEMO)
	Lilliam Escalera (FDOT)	Alex Hull (Inwood)
	Rebecca Spain Schwarz (Atkins/GEC)	Marion Almy (ACI)

Dr. Timothy Parsons, SHPO
SR 600 (US 92) Project Development and Environment (PD&E) Study
Re-Evaluation from East of I-4 to East of County Line Road
Work Segment No.: 435749-1
September 7, 2016
Page 4 of 4

The Florida State Historic Preservation Officer finds the attached Cultural Resource Assessment Survey Update complete and sufficient and concurs with the recommendations and findings provided in this cover letter for SHPO/DHR Project File Number 2016-1350. Or, the SHPO finds the attached report contains ___ insufficient information.

SHPO Comments:

We acknowledge that a separate effects document will be submitted for SHPO review for segments 1, 9 and 11. We concur with finding of no effect for segs 2-8 and a finding of no adverse affect for segment 10.

For Isi J. Alden Igo, Deputy SHPO
Timothy A. Parsons, Ph.D.
Director, Florida Division of Historical Resources
& State Historic Preservation Officer

9/16/2016
Date



Florida Department of Transportation

RICK SCOTT
GOVERNOR

11201 N. McKinley Drive
Tampa, Florida 33612-6456

RACHEL D. CONE
INTERIM SECRETARY

March 14, 2017

Timothy A. Parsons, Ph.D., Director
State Historic Preservation Officer
Florida Division of Historical Resources
500 South Bronough Street
Tallahassee, FL 32399-0250

Attention: Alyssa McManus, Transportation Compliance Review Program

**Re: Section 106 Consultation Case Study Report
SR 600 (US 92) Project Development and Environment (PD&E)
Re-Evaluation from East of I-4 to East of County Line Road
Hillsborough County, Florida
WPI Seg. No.: 435749-1
Federal Aid Project No.: MAF-212-1(34)**

Dear Dr. Parsons:

The Florida Department of Transportation (FDOT), District Seven is preparing a Project Development and Environment (PD&E) Study Re-Evaluation for the proposed widening of SR 600 (US 92) from east of Interstate 4 (I-4) to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The original PD&E Study was completed in 1994. The Study recommended a build alternative from east of I-4 to Mobley Street and from Park Road to County Line Road. The no-build alternative was selected for the segment between Mobley Street and Park Road with the exception of improving one section of Baker Street where it was recommended for conversion to an urban section between Mobley Street and Whitehall Street. Due to a change in design standards and existing conditions, the project's PD&E study is being re-evaluated. The no-build alternative between Mobley Street and Park Road remains as the recommended alternative. Sidewalk and drainage improvements were made to the section of Baker Street between Mobley Street and Whitehall Street which meet the intent of the original PD&E study recommendation for this segment of the project.

Enclosed is one (1) copy of the Section 106 Consultation Case Study Report (March 2017) that was prepared for the above referenced project and a CD containing a PDF file of this document. As part of the PD&E Study Re-Evaluation, a Cultural Resource Assessment Survey (CRAS) Update was prepared in February 2016 and revised in August 2016. The project was divided into 11 Evaluation Segments based on changes in land use and the proposed typical sections in comparison with the land use and typical sections from the original PD&E Study. Segments 1 through 9 and Segment 11 include the Recommended Build Alternatives while Segment 10, from Mobley Street

to just west of Park Road, remains with the Recommended No-Build Alternative which was identified in the original PD&E Study.

As a result of the CRAS Update, three (3) historic resources that are eligible for listing in the National Register of Historic Places (NRHP) were identified within the SR 600 (US 92) project are of potential effect (APE) for the Segments that include a Recommended Build Alternative. These significant historic properties include: Camp Knox Tourist Court Resource Group (8HI04634) and its 11 contributing resources (8HI12994-HI13003, 8HI13032) contained in Segment 1; Tomlin Middle School Resource Group (8HI13404) and its eight (8) contributing resources (8HI13246-HI13253) contained in Segment 9; and the Polk County Line Obelisk (8HI05328) contained in Segment 11. No NRHP-listed or eligible historic resources were identified within Recommended Build Alternatives Evaluation Segments 2 through 8. There were 49 significant historic resources contained within the project APE of Segment 10, the Recommended No-Build Alternative. These include one NRHP-listed individual property, plus three historic districts and building complex resource groups that collectively contain 45 contributing resources. Although there are significant historic resources identified within Segment 10, the proposed project will have no effect on the resources since this segment is a Recommended No-Build Alternative. The SHPO approved the recommendations and findings in the CRAS Update on September 16, 2016.

The objective of this Section 106 Consultation Case Study Report is to evaluate the potential effects (primary and secondary) of the proposed undertaking to the three historic properties located within the project APE for the Segments that include a Recommended Build Alternative, as identified above. FDOT has applied the Criteria of Adverse Effect found in 36 CFR Part 800.5 and has determined that the project will have **no effect** on the NRHP-eligible Tomlin Middle School Resource Group (8HI13404) and its eight (8) contributing resources (8HI13246-HI13253), **no effect** on the Polk County Line Obelisk (8HI05328), and **no adverse effect** on the NRHP-eligible Camp Knox Tourist Court Resource Group (8HI04634) and its 11 contributing resources (8HI12994-HI13003, 8HI13032), as discussed in the enclosed document.

In addition, the following two commitments pertaining to cultural resources will be included in the list of commitments for this project and will be carried forward through future project phases:

1. A proposed noise barrier was evaluated during the proposed project's PD&E Re-evaluation study for the Camp Knox Tourist Court Resource Group (8HI04634). The proposed noise barrier should result in *no adverse effect* to this historic resource. However, the noise barrier will be evaluated further during the proposed project's future design phase to affirm that it remains a cost reasonable and feasible barrier. The FDOT District Seven will continue to coordinate with the State Historic Preservation Officer (SHPO) during the design phase regarding potential effects to this historic resource.
2. FDOT District Seven will coordinate with the SHPO if there are any alterations to the proposed project's design which may alter its effects on significant historic resources.

Timothy A. Parsons, Ph.D., Director
SR 600 (US 92) Project Development and Environment (PD&E)
Re-Evaluation from East of I-4 to East of County Line Road
Hillsborough County, Florida
WPI Seg. No.: 435749-1
March 14, 2017
Page 3 of 3

This information is being provided in accordance with the provisions of the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 CFR, Part 800, as well as the provisions contained in the revised Chapter 267, *Florida Statutes*.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016, and executed by FHWA and FDOT.

If you have any questions, or if I may be of assistance, please contact me at (813) 975-6496 or robin.rhinesmith@dot.state.fl.us or contact Rebecca Spain Schwarz at (813) 281-8308 or rebecca.spain-schwarz@atkinsglobal.com.

Sincerely,



Robin M. Rhinesmith
Environmental Administrator

Enclosures

CC: Brittany Bianco, FDOT OEM
Lilliam Escalera, FDOT
Marion Almy, ACI

Roy Jackson, FDOT OEM
Alex Hull, Inwood
Rebecca Spain Schwarz, Atkins

The Florida State Historic Preservation Officer (SHPO)/Florida Division of Historical Resources (FDHR) finds the attached Section 106 Consultation Case Study Report complete and sufficient and ✓ concurs/ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number 2016-1350 B. Or, the SHPO/FDHR finds the attached Case Study Report contains insufficient information.

SHPO/FDHR Comments:

Additional consultation will be needed to assess
needed to address the noise wall.

For
Timothy A. Parsons, Ph.D., Director
State Historic Preservation Officer
Florida Division of Historical Resources

4/3/2017
Date



FWS Log No. 2017-I-0144
The proposed action is not likely to adversely affect resources protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) provided the standard protection measures for the eastern indigo snake are incorporated into the project plan. This finding fulfills the requirements of the Act.



Jay B. Herrington
Jay B. Herrington
Field Supervisor

1-10-17
Date

Florida Department of Transportation

RICK SCOTT
GOVERNOR

11201 N. McKinley Drive
Tampa, Florida 33612

ANANTH PRASAD, P.E.
SECRETARY

December 8, 2016

Ms. Zakia Williams
U.S. Fish and Wildlife Service
U.S. Department of the Interior
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: Endangered Species Act Section 7 Coordination
SR 600 (US 92) From East of I-4 to East of County Line Road
Hillsborough County, Florida
WPI Segment No: 435749-1

Dear Ms. Williams:

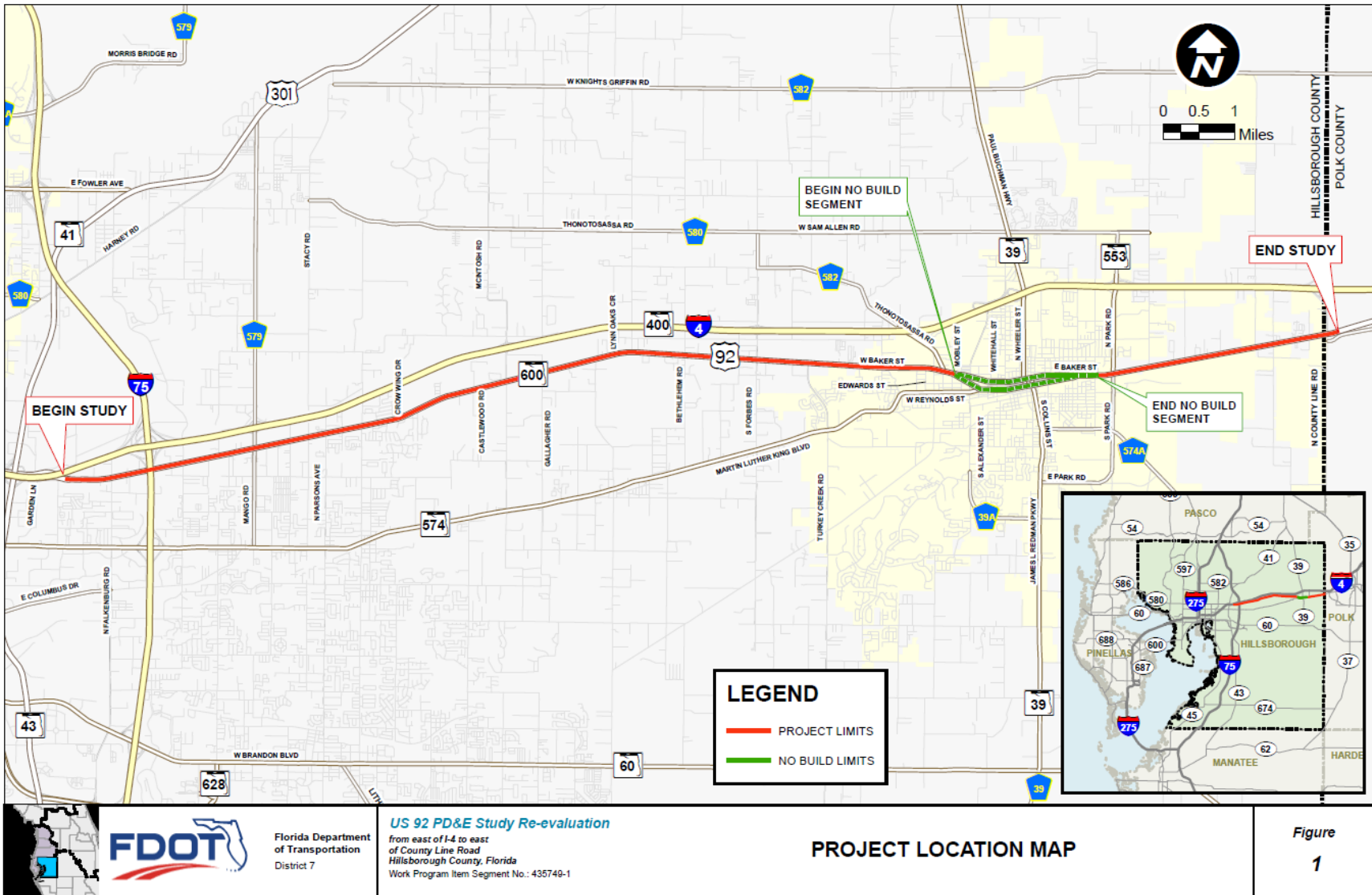
The Florida Department of Transportation, District Seven, is conducting a Project Development and Environment Study Re-evaluation for the proposed widening of State Road 600 (US 92) from east of Interstate 4 to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The environmental document that is being reevaluated is a Type 2 Categorical Exclusion (Approved by the FHWA on March 24, 1994) (Figure 1).

This Draft Wetland Evaluation and Biological Assessment Report (WEBAR) was prepared as part of this PD&E study. This report summarizes potential impacts to wetlands, federal- and state-listed species and their habitats. Identification of measures to avoid, minimize, and mitigate for any potential impacts are also discussed.

Proposed Project

The study generally recommended four and six-lane build alternatives from east of I-4 to Mobley Street and from Park Road to County Line Road. However, the no-build

Ms. Zakia Williams, USFWS
 WPI Segment # 435749-1-22-01
 SR 600 (US 92) From East of I-4 to East of County Line Road



alternative was selected for the segment between Mobley Street and west of Park Road with the exception of improving one section of Baker Street between Mobley and Whitehall Street where it was recommended for conversion to an urban section. It is noted that sidewalk and drainage improvements have since been made to the section of Baker Street between Mobley Street and Whitehall Street that meet the intent of the original PD&E Study recommendation for this project segment. Therefore, the no-build alternative between Mobley Street and Park Road remains as the recommended alternative.

Due to a change in design standards and existing conditions, the proposed project's PD&E Study is being re-evaluated. The no-build alternative between Mobley Street and Park Road remains as the recommended alternative. The PD&E Study Re-evaluation addresses the area from east of I-4 to Mobley Street and from west of Park Road to County Line Road. Proposed intersection improvements at Park Road necessitate the extension of the build segment between Park Road and County Line Road to include a tie in to the existing roadway along US 92 to the west of Park Road.

Wetlands

Pursuant to Executive Order 11990 (Protection of Wetlands) and USDOT Order 5660.1A (Preservation of the Nation's Wetlands), an analysis of the potential impacts on wetlands and associated wildlife was conducted for the alignment alternatives. The analysis also included measures to minimize adverse impacts and avoid to the fullest extent possible disturbance or impacts to wetlands. The analysis shows that some wetland impacts would be unavoidable; however, these wetland impacts would occur to previously disturbed wetlands adjacent to the existing roadway.

Based on the results from the alternatives analysis, there are no practicable alternatives to the proposed construction in wetlands that can address the needs of the project. Based on the recommended alignments, the anticipated wetland and surface water impacts will be approximately 11.33 acres, consisting of 9.84 acres of forested wetlands, 1.43 acres of herbaceous wetlands and 0.06 acres of surface water. Mitigation will be provided to compensate for all unavoidable loss of wetland function as required by the appropriate regulatory agencies.

Protected Species and Habitat

Federally protected species assessed for this project include the following: American alligator (*Alligator mississippiensis*), Audubon's crested caracara (*Caracara plancus audubonii*), Eastern indigo snake (*Drymarchon couperi*), Florida scrub-jay (*Aphelocoma coerulescens*), Florida sand skink (*Neoseps reynoldsi*), and the wood stork (*Mycteria americana*). Additionally, review for the de-listed, federally protected, bald eagle (*Haliaeetus leucocephalus*) and the candidate species gopher tortoise (*Gopherus polyphemus*) were also conducted.

The study corridor is located within USFWS Consultation Areas for the Audubon's crested caracara, Florida scrub-jay and sand skink. A finding of no effect was also assigned for

Ms. Zakia Williams, USFWS
WPI Segment # 435749-1-22-01
SR 600 (US 92) From East of I-4 to East of County Line Road

U.S. Fish and Wildlife Service Critical Habitat. A finding of no effect was assigned for Audubon's crested caracara, Florida scrub-jay, and sand skink. A finding of may affect, but not likely to adversely affect was assigned for the American alligator, Eastern indigo snake, gopher tortoise, bald eagle, and wood stork.

The Draft WEBAR is attached for your review. The FDOT respectfully requests a response from the U.S. Fish and Wildlife Service within 30 days. If you have any questions or need additional information, please contact me at (813) 975-6455 or email me at nicole.selly@dot.state.fl.us.

Sincerely,



Nicole Selly
Environmental Specialist

NCS

cc: Lilliam Escalera, FDOT
Robin Rhinesmith, FDOT

The U.S. Fish and Wildlife Service finds the attached project documentation complete and sufficient and _____ concurs/ _____ does not concur with the recommendations and findings provided herein.

USFWS Comments:

Zakia Williams (or Designee)
U.S. Fish and Wildlife Service
North Florida Ecological Services Office

Date

Alex Hull

To: Jason Houck
Subject: RE: Document Review Confirmation for US 92 Draft WEBAR COMPLETE REPORT

Alex B. Hull, PE

INWOOD CONSULTING ENGINEERS

3000 Dovera Dr., Suite 200, Oviedo, FL 32765

Office: 407-971-8850

Mobile: 321-303-6253

Direct: 407-542-0309

From: Selly, Nicole [<mailto:Nicole.Selly@dot.state.fl.us>]
Sent: Wednesday, December 28, 2016 10:58 AM
To: Lilliam Escalera <lilliam.escalera@dot.state.fl.us>; Jason Houck <jhouck@inwoodinc.com>
Subject: FW: Document Review Confirmation for US 92 Draft WEBAR COMPLETE REPORT

A review was received for the following:

Event: 435749-1 US 92 from East of I-4 to East of County Line Road WEBAR Review
Document: US 92 Draft WEBAR COMPLETE REPORT
Submitted By: Jennifer Goff
Global: Yes
Comments:

The Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the Draft Wetland Evaluation and Biological Assessment Report (WEBAR) for the above-referenced project, prepared as part of the Project Development and Environment (PD&E) Reevaluation Study. We provide the following comments and recommendations for your consideration in accordance with Chapter 379, Florida Statutes and Rule 68A-27, Florida Administrative Code (F.A.C.).

The project involves an evaluation of widening US 92 (SR 600) from a two-lane roadway to a four-lane divided roadway between just east of I-4 to east of County Line Road in Hillsborough County. The total project length is approximately 18.1 miles, but the No Build Alternative has been selected for a segment approximately 2 miles long between Mobley Street and Park Road in Plant City. This WEBAR also includes an analysis of 21 Stormwater Management Facility and 14 Floodplain Compensation alternative sites. The project vicinity is a mix of residential and commercial development, agriculture, upland forests, herbaceous and forested wetlands, and man-made ponds and lakes.

The WEBAR evaluated potential project impacts to 22 wildlife species classified under the Endangered Species Act as Federally Endangered (FE) or Threatened (FT), or by the State of Florida as Threatened (ST) or Species of Special Concern (SSC). Listed species were evaluated based on range and potential appropriate habitat or

because the project is within a U.S. Fish and Wildlife Service Consultation Area. Included were: Eastern indigo snake (FT), sand skink (FT), American alligator (FT due to similarity in appearance to the American crocodile), crested caracara (FT), wood stork (FE), Florida scrub jay (FT), gopher frog (SSC), gopher tortoise (ST), Suwannee cooter (SSC), Florida pine snake (SSC), short-tailed snake (ST), Florida burrowing owl (SSC), Southeastern American kestrel (ST), Florida sandhill crane (ST), roseate spoonbill (SSC), limpkin (SSC), snowy egret (SSC), little blue heron (SSC), tricolored heron (SSC), white ibis (SSC), Sherman's fox squirrel (SSC), and Florida mouse (SSC).

Also evaluated were the bald eagle, which was delisted by state and federal agencies, but this species remains protected under state rule in Section 68A-16.002, F.A.C. and by the federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), and the Florida black bear, which is protected by the FWC pursuant to the Florida Black Bear Conservation Rule 68A-4.009 F.A.C.

Project biologists made a finding of "no effect" for the sand skink, crested caracara, Florida scrub jay, Suwannee cooter, Florida pine snake, short-tailed snake, and Florida black bear due to a lack of suitable habitat for these species within the project area. The biologists determined that the project "may affect, but is unlikely to adversely affect" all the other species. We agree with these determinations.

We support the project commitments for protected species, which include the following.

1. The standard FDOT Construction Precautions for the Eastern Indigo Snake will be followed during construction.
2. Due to the presence of gopher tortoise habitat within the project area, a gopher tortoise survey in appropriate habitat will be performed within construction limits within 72 hours to 90 days prior to construction. The survey will follow the latest survey criteria from the FWC's Gopher Tortoise Permitting Guidelines and the FDOT will secure any required relocation permit from the FWC.
3. Impacts to potential wood stork suitable foraging habitat will be evaluated during the design phase, and mitigation for unavoidable impacts will be provided as appropriate. This, along with other required wetland mitigation, is anticipated to provide mitigation for the loss of foraging habitat for other listed wading bird species.

The wildlife surveys did not record individual or nest sitings of Florida burrowing owls, Southeastern American kestrels, Florida sandhill cranes, Sherman's fox squirrels, or bald eagles, largely due to either very limited or suboptimal habitat for these species within the project area. Should a nest of any of these species be discovered

near the project limits prior to or during construction, please coordinate with the FWC staff identified below to discuss avoidance, minimization, and permitting options.

The WEBAR identified 11.33 acres of wetlands that will be impacted by the project, including 9.84 acres of forested wetlands, 1.43 acres of herbaceous wetlands, and 0.06 acres of surface waters. Mitigation would be provided via one or more of several mitigation banks or using the FDOT Mitigation Program with the Southwest Florida Water Management District. We agree with the findings of this evaluation.

We appreciate the opportunity to provide input on highway design and the conservation of fish and wildlife resources. Please contact Brian Barnett at (772) 579-9746 or email

brian.barnett@MyFWC.com

to initiate the process for further overall coordination on this project.

Alex Hull

From: Laura Clark
Sent: Wednesday, March 23, 2016 5:11 PM
To: Alex Hull
Subject: US 92 - HART Existing and Planned Transit

Alex,

I spoke with Steve Feigenbaum, HART Director of Service Development, and he confirmed that HART does not serve Plant City or the project area at this time. He also stated that HART doesn't have any current plans to provide transit service along the US 92 corridor in the future.

Plans for a future transit route along US 92 were included in the Go Hillsborough Transportation Plan; however, Plant City requested that the route be removed from the plan as they would prefer to use their sales tax elsewhere.

Thanks,

Laura E. Clark, AICP
PROJECT MANAGER

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