



APPENDIX D

DESIGN VARIATION PACKAGE

Submittal/Approval Letter

To: George K. Borchik, PE,
District or Turnpike Design Engineer

Date: October 5, 2012

Financial Project ID: 426905-1-22-01 New Construction RRR

Federal Aid Number: SFT1251R

Project Name: I-95 at Ellis Road PD&E Study

State Road Number: N/A

Co./Sec./Sub.: Brevard County

Begin Project MP: N/A

End Project MP: N/A

Full Federal Oversight: Yes No

Request for Design Exception , Design Variation

(For Design Exception or Variations Requiring Central Office Approval)

Re-submittal: Yes No Original Ref# _____ - _____ - _____

Requested for the following element(s):

- | | | | |
|--|---|---|--|
| <input checked="" type="checkbox"/> Design Speed | <input type="checkbox"/> Lane Widths | <input type="checkbox"/> Shoulder Widths | <input type="checkbox"/> Bridge Widths |
| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input type="checkbox"/> Other _____ | | |

A design variation is requested for a 5 mph reduction in design speed, from 50 mph to 45 mph. The 50 mph design speed is required by the applicable sections of the Department's procedure entitled Strategic Intermodal System (SIS) Highway Component Standards and Criteria (effective September 14, 2011):

"The design speed for controlled access facilities shall be 65 MPH in rural areas and at least 50 MPH in FHWA urban clusters and urbanized areas."

Based on the Preferred Alternative from the I-95 at Ellis Road PD&E Study, the 45 mph design speed is more germane to the existing land use and frequency of sideroads, is less costly in terms construction and right-of-way costs, and matches into existing NASA Boulevard, which will ultimately also be part of the SIS to Melbourne International Airport and also does not meet SIS criteria.



Recommended by

Date 11/22/13

Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

District or Turnpike Design Engineer Date _____

District Structures Design Engineer Date _____

State Roadway Design Engineer Date _____

State Structures Design Engineer Date _____

State Chief Engineer Date _____

FHWA Division Administrator Date _____

Submittal/Approval Letter

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District or Turnpike Design Engineer

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State Road Number: N/A

Co./Sec./Sub.: Brevard County

Begin Project MP: N/A

End Project MP: N/A

Full Federal Oversight: Yes No

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(For Design Exception or Variations Requiring Central Office Approval)

Re-submittal: Yes No Original Ref# _____ - _____ - _____

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|---|---|---|--|
| <input type="checkbox"/> Design Speed | <input type="checkbox"/> Lane Widths | <input type="checkbox"/> Shoulder Widths | <input type="checkbox"/> Bridge Widths |
| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Access Class 3</u> | | |

A design variation is requested for a reduction in access management class, from Class 3 to Class 5 (45 mph or less). The Access Management Class 3 is required by the applicable sections of the Department's procedure entitled Strategic Intermodal System (SIS) Highway Component Standards and Criteria (effective September 14, 2011):

"For controlled access SIS highway component facilities, design criteria for new arterial roadway construction as designated in the Department's Plans Preparation Manuals (Topic Nos. 625-000-005 and 625-000-006) shall be used. The access management standards for controlled access segments of the SIS highway component shall be those contained in Access Class 2 or 3 as defined in Department Rule Chapter 14-97, F.A.C."

Based on the Preferred Alternative from the I-95 at Ellis Road PD&E Study, the Access Management Class 5 (45 mph or less) is more conducive to accommodating the frequency of entrances and sideroads. Ellis Road ties into existing NASA Boulevard, which will ultimately also be part of the SIS to Melbourne International Airport and also does not meet SIS criteria. NASA Boulevard utilizes a 5-lane section for a portion of this segment before transitioning to a median section with full median openings approximately 800 feet to 1,200 feet apart.



Recommended by: Tanya Kristoff Date: 11/22/13
Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

District or Turnpike Design Engineer Date _____

District Structures Design Engineer Date _____

_____ Date _____
State Roadway Design Engineer

_____ Date _____
State Structures Design Engineer

_____ Date _____
State Chief Engineer

_____ Date _____
FHWA Division Administrator

Submittal/Approval Letter

To: George K. Borchik, PE,
District or Turnpike Design Engineer

Date: October 5, 2012

Financial Project ID: 426905-1-22-01 New Construction RRR

Federal Aid Number: SFT1251R

Project Name: I-95 at Ellis Road PD&E Study

State Road Number: N/A

Co./Sec./Sub.: Brevard County

Begin Project MP: N/A

End Project MP: N/A

Full Federal Oversight: Yes No

Request for Design Exception , Design Variation

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| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Access Management</u> | | |

A design variation is required for the for the 646-foot distance between the proposed full median openings at the signalized ramp intersections within the Ellis Road / I-95 interchange. This distance is 51% under the allowable 1,320 feet between full median openings for Access Management Class 5 (45 mph or less).

Recommended by



Date 11/22/13

Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

Approvals:

District or Turnpike Design Engineer

District Structures Design Engineer

State Roadway Design Engineer

State Structures Design Engineer

State Chief Engineer

FHWA Division Administrator

Submittal/Approval Letter

To: George K. Borchik, PE,
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State Road Number: N/A

Co./Sec./Sub.: Brevard County

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Full Federal Oversight: Yes No

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| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Access Management</u> | | |

A design variation is required for the for the 1,120-foot distance between the proposed full median openings of Stan Drive and East Drive, as the distance is 15% under the allowable 1,320' full median opening distance for Class 5 (45 mph or less).

These median openings are proposed to accommodate the volume of traffic, including commercial vehicles, emanating from these sideroads.



Recommended by:

No. 55463

Date 11/24/12

Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

Approvals

District or Turnpike Design Engineer

Date _____

District Structures Design Engineer

Date _____

State Roadway Design Engineer

Date _____

State Structures Design Engineer

Date _____

State Chief Engineer

Date _____

FHWA Division Administrator

Date _____

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Federal Aid Number: SFT1251R

Project Name: I-95 at Ellis Road PD&E Study

State Road Number: N/A

Co./Sec./Sub.: Brevard County

Begin Project MP: N/A

End Project MP: N/A

Full Federal Oversight: Yes No

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| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Access Management</u> | | |

A design variation is required for the 483' distance between the proposed westbound split directional median opening at Shinn Avenue and the full median opening at Lake Ibis Drive, as the distance is 27% under the allowable 660 feet between a full and directional median openings.

This configuration is being proposed to accommodate the volumes of commercial traffic and improve accessibility to commercial properties on the north and south sides of Ellis Road.



Recommended by:

No. 55463

Tanya Kristoff
Responsible Professional Engineer

Date 1/22/13
Landscape Architect (Landscape-Only Projects)

District or Turnpike Design Engineer Date _____

District Structures Design Engineer Date _____

State Roadway Design Engineer Date _____

State Structures Design Engineer Date _____

State Chief Engineer Date _____

FHWA Division Administrator Date _____

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| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Access Management</u> | | |

A design variation is required for the 973-foot distance between the proposed full median openings of Lake Ibis Drive and Wickham Road, as this distance is 26% under the allowable 1,320' full median opening distance.

The full median opening at Lake Ibis Drive is proposed to facilitate access to the commercial strip along the west side of Wickham Road. The Lake Ibis Drive intersection occurs where the Ellis Road improvement ties into the recently widened portion of Ellis Road.



Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)
Tanya Kristoff Date 11/22/12

District or Turnpike Design Engineer Date _____ District Structures Design Engineer Date _____

State Roadway Design Engineer Date _____ State Structures Design Engineer Date _____

State Chief Engineer Date _____ FHWA Division Administrator Date _____

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| <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross Slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Stopping Sight Distance |
| <input type="checkbox"/> Horizontal Clearance | <input checked="" type="checkbox"/> Other <u>Border Width</u> | | |

A design variation is required for the reduction in border width along the entrance and exit ramps west of I-95. The required border width of 94 feet is requested to be reduced to 15 feet in order to eliminate impacts to the adjacent utility easements owned by Florida Gas Transmission and Florida Power and Light. The ramps are located within the existing right-of-way to avoid these existing utilities.



Recommended by:

Tanya Kristoff
No. 55463

Date 1/22/13

Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

Approved:

District or Turnpike Design Engineer

District Structures Design Engineer

State Roadway Design Engineer

State Structures Design Engineer

State Chief Engineer

FHWA Division Administrator