



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P. E.
SECRETARY

April 14, 2022

ADDENDUM NO. 7

To: **ALL DESIGN BUILD FIRMS**

FINANCIAL ITEM NUMBER: 415474-2-52-01, 415474-2-52-02, and 415474-2-56-01
CONTRACT NUMBER: E3U76
DESCRIPTION: Design Build for SR 30 (US 98) Brooks Bridge No. 570034

PROPOSALS TO BE RECEIVED: May 4, 2022 (as per this Addendum)

This is your authorization to make the following changes to the Request for Proposal package you now have for the subject project:

Attached for your use is a redline revision to the RFP document previously distributed. The following is a summary of the revisions:

Cover

- Document denoted as **Final RFP, Addendum 7**

Attachments

- Revised Division I Design-Build Specifications to reflect the January 2022 Specifications
- Added the Special Provision number to the Division I Damage Recovery Special Provision
- Revised Division II and III Special Provisions to reflect the January 2022 Specifications
- Added Developmental Specification 564 Duplex Coating for Structural Steel

Section I. Introduction, Utilities

- Clarified casing requirements

Section I. Introduction, Demolition of the Existing Bridge Superstructure and Substructure

- Clarified requirements

Section I. Introduction, Demolition of the Existing Bridge Superstructure and Substructure

- Added point of contact for Okaloosa County permitted artificial reef sites

Section VI. Design and Construction Criteria, D. Utility Coordination, Table A

- Corrected FPID number for OCWS relocation

Section VI. Design and Construction Criteria, I. Structure Plans, 2. Criteria, h., i.

- Deleted language to clarify requirement

Section VI. Design and Construction Criteria, I. Structure Plans, 2. Criteria, pp.

- Revised requirement

Section VI. Design and Construction Criteria, R. Signalization and Intelligent Transportation System Plans, 1. General

- **Clarified requirement**

Please use this information when preparing your proposal.

All PROPOSAL HOLDERS please acknowledge receipt of the addendum on the Design Build Proposal of form (form no. 375-020-12), in the space provided.

Sincerely,



Ranae Dodson
Procurement Manager

cc: Kerrie Harrell, Alaina Webb, File

Please sign below to acknowledge receipt of Addendum No. 7.

Acknowledged by: _____

Florida Department of Transportation
District 3

FINAL

DESIGN-BUILD

REQUEST FOR PROPOSAL
for

SR 30 (US 98) Brooks Bridge No. 570034

Roadway Section No. 57030000

**Bridge Replacement and Roadway Improvement Design and
Construction**

Okaloosa County

**Financial Projects Number(s): 415474-2-52-01,
415474-2-52-02, 415474-2-56-01**

Federal Aid Project Number(s): N/A

Contract Number: E3U76

[Addendum No. 1 – 09/13/2021](#)

[Addendum No. 2 – 09/16/2021](#)

[Addendum 3 – 10/07/2021](#)

[Addendum 4 –12/21/2021](#)

[Addendum No. 5 – 02/21/2022](#)

[Addendum No. 6—02/25/2022](#)

[Addendum No. 7—04/12/2022](#)

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ATTACHMENTS

The Attachments listed below are hereby incorporated into and made a part of this Request for Proposal (RFP) as though fully set forth herein.

Project Advertisement

Division I Design-Build Specifications (Revised)

Award and Execution of Contract – Public Records (SP0030900DX)
Legal Requirements and Responsibility to the Public – Laws to be Observed – Compliance with Federal Endangered Species Act and Other Wildlife Regulations (Manatee) (SP0070104-4)
Legal Requirements and Responsibility to the Public – Laws to be Observed – Compliance with Federal Endangered Species Act and Other Wildlife Regulations (Sawfish) (SP0070104-5)
Legal Requirements and Responsibility to the Public – Laws to be Observed – Compliance with Federal Endangered Species Act and Other Wildlife Regulations (Sea Turtle) (SP0070104-6)
Legal Requirements and Responsibility to the Public – Laws to be Observed – Compliance with Federal Endangered Species Act and Other Wildlife Regulations (Sturgeon) (SP0070104-8)
Legal Requirements and Responsibility to the Public – Laws to be Observed – Compliance with Federal Endangered Species Act and Other Wildlife Regulations (Seagrass Beds) (SP0070104-9)
Legal Requirements and Responsibility to the Public – Equal Opportunity Requirements (SP0072700)
Legal Requirements and Responsibility to the Public – Preference to State Residents (SP0072800)
Legal Requirements and Responsibility to the Public – E-Verify (SP0072900)
Legal Requirements and Responsibilities to the Public-Scrutinized Companies (SP0073000)
Prosecution and Progress – Prosecution of Work – Partnering (SP0080306)
Prosecution and Progress – Limitations of Operations – Night Work Along Coastal Road (SP0080401)
Prosecution and Progress – Limitation of Operations – Contaminated Material (Mercury-Containing Devices and Lamps) (SP0080409)

Prosecution and Progress - Damage Recovery (SP 0081200)

Incentive-Disincentive (SP0081300ID)

Divisions II and III Special Provisions (Revised) identified by the Department to be used on the Project:

Mobilization (SP1010000DB)
Contractor Quality Control General Requirements (SP1050813DB)
Structures Foundations (SP4550000DB)
Value Added Bridge Component (SP475000DB)
Landscaping (SP5800000)

Road Weather Information System (RWIS) (DEV 688)

Duplex Coating for Structural Steel (DEV 564)

General

- A01 ~~Revised Revised~~ Pavement Design (~~Approved April 2021~~ ~~October 2021~~ ~~December 2021~~)
- A02 Right of Way Maps with CADD files
- A03 Approved Design Speed Variation (January 2020)
- A04 2021 FDM Section 121 BrProjDev-Calculations

Permit Applications

- A05 FDEP ERP and State 404 Application

PD&E Documents

- A06 FONSI and Environmental Assessment (April 2019)
- A07 Endangered Species Biological Assessment and Biological Opinion (October 2017)
- A08 Contamination Screening Evaluation Report (May 2016)

Reevaluation

- A09 Reevaluation

Utilities

- A10 UWHC Executed Agreement – Cox Communications
- A11 UWHC Executed Agreement – AT&T Florida
- A12 UWHC Executed Agreement – Uniti Fiber
- A13 UWHC Executed Agreement – Centurylink
- A14 UWHC Executed Agreement – Okaloosa County Water and Sewer
- A15 96th Communications Squadron Cyber Infrastructure Design Guide (February 2020)
- A16 96TW-2019-00302-00006 Brooks Bridge Cyber Infrastructure Relocation FDOT RFI with Addition 1

Species Protection

- A17 NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions (March 2006)
- A18 NMFS and FWS Construction Special Provisions, Sturgeon Protection Guidelines (September 2012)
- A19 FWC Manatee and Sea Turtle Construction Conditions for In-Water Work Associated with FDOT Projects [2012]

Bid Price Proposal Forms:

1. Design Build Proposal of Proposer (375-020-12)
2. **Revised** Design Build Bid Blank (375-020-17)
3. Design Build Bid or Proposal Bond (375-020-34)
4. Vendor Certification Regarding Scrutinized Companies List (No. 375-030-60)
5. Design Build Bid Proposal (700-010-65)

Other Contract Forms:

1. Design Build Contract Bond (No. 375-020-14)
2. Contract Affidavit (No. 375-020-30)
3. Design Build Contract (No. 375-020-13)
4. Stipend Agreement

REFERENCE DOCUMENTS

The following documents are being provided with this RFP. Except as specifically set forth in the body of this RFP, these documents are being provided for reference and general information only. They are not being incorporated into and are not being made part of the RFP, the contract documents or any other document that is connected or related to this Project except as otherwise specifically stated herein. No information contained in these documents shall be construed as a representation of any field condition or any statement of facts upon which the Design-Build Firm can rely upon in performance of this contract. All information contained in these reference documents must be verified by a proper factual investigation. The bidder agrees that by accepting copies of the documents, any and all claims for damages, time or any other impacts based on the documents are expressly waived.

Concept Plans and Design Documentation

- R01 Brooks Bridge Concept Plans (December 2020)
- R02 Brooks Concept CADD Files (Brooks Concept CADD.zip)
- R03 Typical Section Package (Approved February 2021)
- R04 Pond Siting Report Technical Memorandum (December 2020)
- R05 Drainage Design Documentation (December 2020)
- R06 Drainage Models (Brooks Drainage Models.zip)
- R07 Okaloosa County Water and Sewer Relocation Plans (April 2021)
- R08 Coastal Hydraulics Memorandum (September 2020)
- R09 Report of Geotechnical Exploration (BDR) (October 2018)
- R10 Report of Geotechnical Exploration (Ponds) (October 2018)
- R11 Report of Geotechnical Exploration (Pond 1) (July 2020)
- R12 Bridge Technical Memorandum (Single Alternative BDR) – Vol. I (January 2021)
- R13 Bridge Technical Memorandum (Single Alternative BDR) – Vol. II (January 2021)
- R14 Brooks Bridge BDR – Plans (January 2021)
- R15 Brooks Traffic Models (Brooks Traffic Models PDE.zip)

General

- R16 Okaloosa County Water and Sewer Standard Specifications and Design Manual ([link only](http://www.co.okaloosa.fl.us/sites/default/files/doc/dept/ws/Spec_Manual.pdf)) (http://www.co.okaloosa.fl.us/sites/default/files/doc/dept/ws/Spec_Manual.pdf)
- R17 Preliminary Utility Information Package
- R18 Draft Submerged Aquatic Vegetation Report Addendum (November 2019)
- R19 Okaloosa County's Artificial Reef Permit Information
- R20 Project Traffic Forecasting Report (January 2021)
- R21 Brooks Bridge Utility Mapping Report (3/10/21)
- R22 Brooks Bridge Utility Mapping CADD (UTEXRD01.dgn)
- R23 Irrigation Plan for Conference Center
- R24 E2N80 Final As-Built Plans (Sidewalk)
- R25 SR 30 (US 98) Emergency Operations Plans Katrina

Aesthetics

- R26 Brooks Bridge Aesthetics Online Meeting Results (April 2021)
- R27 Brooks Bridge Sample Aesthetics Interpretation and Views (July 2021)

Existing Bridge Plans & Inspection Report

R28 Bridge Inspection Report (October 2020)
R29 Existing Bridge As-Built Plans (1965)
R30 Existing Bridge Plans (Black and White Copy)
R31 Existing Crutch Bent Plans
R32 Existing Pile Driving Records
R33 Existing Dolphins and Fender System Plans
R34 Old Swing Bridge Plans

Reference PD&E Documents

R35 Location Hydraulic Report (February 2018)
R36 Pond Siting Report (October 2018)
R37 Public Involvement Summary Report (December 2018)
R38 Design Traffic Report (December 2016)
R39 Preliminary Engineering Report (December 2018)
R40 Wetlands Evaluation Report (October 2017)
R41 Noise Study Report (January 2018)
R42 Navigation Study (August 2015)
R43 Essential Fish Habitat Report (July 2016)
R44 Cultural Resources Assessment Survey (May 2016)
R45 Conceptual Stage Relocation Plan (December 2018)
R46 Air Screening Report (October 2017)

Reference Reevaluation Documents

R47 Contamination Technical Memorandum (January 2021)
R48 Cultural Resource Assessment Survey Technical Memorandum
R49 SHPO Concurrence to Cultural Resource Assessment Survey Technical Memorandum
(1/14/21)

Other Reference Documents

R50 Hydrographical Conditions Survey

R51 Okaloosa County Preliminary Santa Rosa Blvd Concept

I. Introduction.

The Florida Department of Transportation (Department) has issued this Request for Proposal (RFP) to solicit competitive bids and proposals from Proposers for the replacement of Brooks Bridge (Bridge No. 570034) over Santa Rosa Sound in Okaloosa County, Florida. This project will also include roadway widening, new roadway connections, and milling and resurfacing within the limits of SR 30 (US 98) from west of SR 145 (Perry Avenue) to Pier Road, side street reconstruction, intersection reconstruction, signalization, Intelligent Transportation Systems, stormwater ponds, storm-drainage, signing and pavement marking, and replacement of the fender system.

It is the Department's intent to promote the use of innovative design concepts, components, details, and construction techniques for bridge structures as discussed in Part 1, Chapter 121 of the FDOT Design Manual (FDM). The Design-Build Firm may submit a Technical Proposal that includes innovative concepts if they are discussed with the Department and approved in accordance with Part 1, Chapter 121 of the FDM using the Alternative Technical Concept (ATC) process.

The Design-Build Firm shall include a Landscape Architect duly authorized to practice Landscape Architecture in the State of Florida consistent with State Statute 481 part II. The Design-Build Firm's Landscape Architect (DBLA) shall review and identify future unencumbered landscape areas for this Project. This Project shall reserve landscape opportunities and implement the FDOT Highway Beautification Policy. Landscape construction will be performed by others and not included with this Project with the exception of required landscaping to be installed within the limits of the proposed roundabouts. Landscape opportunity areas shall be identified in the Design-Build Firm's Plans as "future landscape areas to be constructed by others". Coordination will be required by the Design-Build Firm and the District Landscape Architect. Coordination between Design-Build Firm's Landscape Architect, the District Landscape Architect and Engineer will be required during the Design-Build plans development process to ensure landscape opportunities are accommodated within the project limits. The DBLA shall be included in the project kick-off meeting and subsequent progress meetings.

Right-of-way acquisition is currently ongoing to acquire the needed right-of-way for the project as depicted by the latest right-of-way maps. The anticipated right-of-way clear date for the Project is October 22, 2022. This right-of-way clear date has been utilized to determine the maximum contract duration established in this RFP by the Department. The Design-Build Firm shall utilize this date in determining their schedule for the Project that will be submitted in accordance with the Design-Build Division I Specifications. The Design-Build Firm will be required to obtain a right-of-way certification from the Department for ANY construction activities prior to commencing work.

Description of Work

The Design-Build Firm will be required to design and construct roadway widening on SR 30 from west of SR 145 to west of Pier Road and two new bridges spanning Santa Rosa Sound. Except as allowed by Section I.A. of this RFP, design and construction shall be consistent with the approved Environmental Assessment (EA) with Finding of No Significant Impact (FONSI) and Reevaluation. The project includes bridge replacement, roadway widening, milling and resurfacing, new roadway connections, side street reconstruction, intersection reconstruction, signalization, stormwater ponds, storm drain, and replacement of the fender system.

On the west (Fort Walton Beach) side of the bridge, side street work includes reconstruction/widening/milling and resurfacing of SR 145 (Perry Avenue) and Perry Avenue South,

realignment of Brooks Street, realignment of Florida Blanca Place, and construction of Pond 1. *See Figure 1.*



Figure 1: Fort Walton Beach Side Overview of Work

On the east (Okaloosa Island) side of the bridge, side street work includes reconstruction of Santa Rosa Boulevard, a new North Connection between SR 30 and Santa Rosa Boulevard on new alignment, reconstruction of the roundabout at the intersection of the North Connection and Santa Rosa Boulevard, a new Eastbound Connection between SR 30 and Santa Rosa Boulevard on new alignment, roundabout construction at the Eastbound Connection intersection with the Hotel Entrance Road, reconstruction of the Hotel Entrance Road, reconstruction of Business Access Road, and Ponds 2, 4, 7A and 8. *See Figure 2.*



Figure 2: Okaloosa Island Side Overview of Work

Roadway Widening, Milling and Resurfacing on SR 30

The required design speeds for SR 30 are 40 mph from west of SR 145 to the east end of the new bridges, and 45 mph from the east end of the new bridges to End Project. The maximum grade allowed on SR 30 shall not exceed 5%.

SR 30 will be widened **and reconstructed** from west of SR 145 to west of Pier Road. The typical section for the west bridge approach along SR 30 from SR 145 to the Begin Bridge will consist of six-11 ft travel lanes, a 10 ft median with 4 inch concrete cap, 10 ft inside shoulders, 10 ft outside shoulders, 38 in single-slope shoulder barrier on the inside and outside, 12 ft shared use paths on both sides of the roadway, 3.5 ft bridge ped./bicycle railing (aluminum) with 6 inch curb on both sides, and retaining wall. Some variation in the median width, inside shoulder width, and median barrier location will be allowed to accommodate transition from the existing roadway to the bridge typical section. At the intersection of SR 30 and SR 145, provide one 11 ft eastbound dedicated left turn lane and one 11 ft westbound right turn lane.

The typical section for the east road way approach along SR 30 from End Bridge to the new connections to Santa Rosa Boulevard will consist of six-11 ft travel lanes, a 22 ft curbed median, 10 ft outside shoulders, 38 in single-slope shoulder barrier on the outside, 12 ft shared use paths on both sides of the roadway, 3.5 ft bridge ped./bicycle railing (aluminum) with 6 inch curb on both sides, and retaining wall. Transition from the bridge typical section, including the transition of median width and transition from the bridge traffic railing to Type E curb shall occur within this typical section. At the intersection of SR 30 and New North Connection, provide one 11 ft westbound right turn lane. At the intersection of SR 30 and the Eastbound Connection, provide one 11 ft eastbound right turn lane and one 11 ft westbound dedicated left turn lane.

The typical section for SR 30 from the new connections to Santa Rosa Boulevard to west of Pier Road will consist of four 11 ft travel lanes, a 22 ft curbed median, a 10 ft shoulder (5 ft paved) in the eastbound direction, a 10 ft shoulder (5 ft paved) in the westbound direction, and a right turn lane in the eastbound direction serving business access roads. In addition, a left turn lane shall be provided in the westbound direction serving the commercial driveway at Station 143+00. Bicycles will be accommodated on a dedicated 5 ft bicycle lane/keyhole in the eastbound direction and on the 5' paved shoulder in the westbound direction. Pedestrians will be accommodated on the existing 5 ft sidewalk in the eastbound direction and 8 ft sidewalk in the westbound direction.

The typical section for SR 30 from west of Pier Road to Pier Road will consist of four 11 ft travel lanes, a raised 4 ft to 8 ft concrete traffic separator, a 10 ft shoulder (5 ft paved) in the eastbound direction, a 10 ft shoulder (5 ft paved) in the westbound direction, a 11 ft eastbound right turn lane serving Pier Road, and two 11 ft eastbound left turn lanes serving Pier Road with a minimum length to match the existing turn lanes. Bicycles will be accommodated on a dedicated 5 ft bicycle lane/keyhole in the eastbound direction and on the 5' paved shoulder in the westbound direction. Pedestrians will be accommodated on the existing 5 ft sidewalk in both the eastbound and westbound directions.

The Design Build Firm will be required to mill and resurface SR 30 from STA 100+00 west of SR 145 to the beginning of reconstruction west of SR 145, and to facilitate pavement marking transitions and match the project limit for the adjacent resurfacing project later defined in this RFP. The Design-Build Firm shall also mill and resurface SR 30 from the end of reconstruction west of Pier Road to east of Pier Road to facilitate pavement marking transitions to the existing roadway.

SR 30 Bridge Replacement over Santa Rosa Sound

The existing SR 30 bridge spanning Santa Rosa Sound shall be replaced with two three-lane parallel bridges on independent foundations. Each bridge shall consist of three 11 ft travel lanes, 10 ft inside shoulders, 10 ft outside shoulders, 36 in single-slope traffic railing on the inside and outside, 12 ft shared use paths, and 3.5 ft ped./bridge railing (aluminum) with 6 inch curb on both sides.

The bridges shall begin west of Pond 1 in Fort Walton Beach and end east of Santa Rosa Blvd on Okaloosa Island.

A minimum of 10 feet of space shall be provided between the bridges for maintenance inspection purposes with the only exception being at the Begin Bridge first span where a minimum of 8-ft is required between the bridges. Greater horizontal separation between the bridges is preferred to facilitate maintenance activities.

The minimum vertical clearance of the main span over the navigation channel shall be 65 feet above the mean high-water elevation of Santa Rosa Sound at the main channel crossing.

A fender system shall be constructed parallel to the channel, and symmetrically around the centerline of the channel. A minimum 150-foot horizontal clearance in the main channel between the fenders is required. There are subaqueous utilities located within the limits of construction of the fender system. Design and construction of the fender system must be coordinated with subaqueous utility owners. Gulf Power (to remain in place and energized), AT&T Corporate (to remain in place) and Okaloosa Gas District (to remain in place and in service) have subaqueous facilities within the anticipated footprint of the new fender system and are to remain in place. The Design-Build firm's fender design shall avoid impacts to these subaqueous facilities.

Roadway Widening on SR 145

SR 145 (Perry Avenue SE) shall be milled, resurfaced, and widened from SR 30 to the Publix Entrance. The typical section will consist of milling and resurfacing the existing 12 ft lanes and widening adjacent to the northbound lanes to add a dedicated right turn lane into Publix, curb and gutter, and a ~~5 ft to~~ 6 ft concrete sidewalk adjacent to the northbound lanes. The existing sidewalk adjacent to the southbound lanes will remain. At the intersection with SR 30, lane requirements include a southbound shared left, right, thru lane and a southbound left turn lane. The required design speed for SR 145 is 30 mph.

Roadway Widening on Perry Avenue South

Perry Avenue South will be widened and reconstructed from Brooks Street to SR 30. The typical section will consist of reconstruction, widening and milling/resurfacing to provide five 11 ft lanes, a 7 ft buffered bicycle lane, 8 ft concrete sidewalk adjacent to the northbound lanes, curb and gutter, and 14 ft of pavement adjacent to the southbound lanes for replacement of existing on street parking. The existing sidewalk adjacent to the southbound lanes will remain. At the intersection with Brooks Street, lane requirements include a southbound right turn lane and a southbound left turn lane. At the intersection with SR 30, lane requirements include a northbound left turn lane, a northbound thru lane and a northbound right turn lane. The required design speed for Perry Avenue South is 30 mph.

The Design Build Firm will be required to mill and resurface portions of the existing on street parking area along Perry Avenue South.

Brooks Street Realignment

Brooks Street shall be realigned to accommodate the roadway widening on SR 30 and the bridge replacement. The typical section shall consist of two 11 ft travel lanes, curb and gutter, and an 8 ft sidewalk along the left side of the typical section adjacent to the curb. The required design speed for Brooks Street is 20 mph.

Florida Blanca Realignment

Florida Blanca Place shall be realigned to accommodate the roadway widening of SR 30 and the bridge replacement. The typical section shall consist of two 11 ft travel lanes, curb and gutter, and 6 ft sidewalk along the right side of the typical section adjacent to the curb. The required design speed for Florida Blanca Place is 20 mph.

Business Access Road Reconstruction

The Business Access Road that connects businesses adjacent to SR 30 to Santa Rosa Boulevard near the east bridge landing shall be reconstructed and realigned to preserve access for businesses, accommodate the construction of Pond 8, and allow replacement of the bridges. The typical section shall consist of two 12 ft travel lanes with curb and gutter. The required design speed for Business Access Road is 15 mph.

Business Access Road shall be constructed in a closed loop configuration with a single point of access to Santa Rosa Blvd.

Alternative Business Access Road configuration, pavement design, or typical sections that meet design requirements and the needs of adjacent businesses may be implemented provided they have been approved by the Department. The Design-Build Firm will be required to adhere to Section VI. F. Subsection 2. of the RFP for the alternate pavement design proposed.

Roadway Widening on Santa Rosa Boulevard

Santa Rosa Boulevard will be widened to five lanes from west of the new Eastbound Connection to its intersection with the new North Connection. The typical section shall consist of four 11 ft travel lanes, a ~~15~~ **12** ft two way left turn lane, curb and gutter, 7 ft buffered bike ~~lanes~~ **lanes** on both sides, and 6 ft concrete sidewalk on both sides. Traffic signals shall be constructed at the intersection of Santa Rosa Boulevard and the Eastbound Connection. At the intersection with the new Eastbound Connection, lane requirements **also** include a northbound left turn lane, a northbound thru/right lane, and a southbound left turn lane. The required design speed for Santa Rosa Boulevard is ~~30~~ **35** mph.

If the Design-Build Firm received an approved ATC regarding an alternate pavement design proposal, they will also be required to adhere to Section VI. F. Subsection 2. of the RFP for the alternate pavement design proposed.

Roadway and bicycle/pedestrian improvements on Santa Rosa Blvd outside of the Brooks Bridge project limits are being developed by Okaloosa County. The Design-Build Firm will be required to coordinate lane configuration, lane widths, and bicycle pedestrian facilities with the County during the design process. Okaloosa County's Santa Rosa Blvd preliminary concept has been included as a Reference Document in this RFP.

New North Connection Roadway Construction

A new North Connection will be constructed to connect SR 30 to Santa Rosa Boulevard. The typical section will consist of two 11 ft travel lanes, 7 ft buffered bike lanes on both sides, 6 ft sidewalk on both sides, and curb and gutter. A northbound right turn lane will be required to serve the loading dock at Emerald Coast Convention Center. A traffic channelization island will be constructed at the intersection of New North Connection and SR 30 to facilitate right in, right out traffic movements. The required design speed for North Connection is 30 mph.

Santa Rosa Boulevard Roundabout

A roundabout shall be constructed at the intersection of Santa Rosa Boulevard and the New North Connection. The roundabout shall have a minimum inscribed circle diameter (ICD) of 130 ft. The roundabout typical section will consist of one 20 ft lane and 10 ft sidewalk within the limits of the roundabout. The center of the roundabout will consist of a 90 ft diameter truck apron and a 60 ft diameter central island. The minimum design vehicle for this roundabout is a WB-62FL. Landscaping is required in the central island in conformity with FDOT Design Manual 213.9 and 213.12. Landscaping shall be designed and installed in a similar style and quality as the landscaping at the existing Hilton Garden Inn and Holiday Inn Resort entrance roundabout. Irrigation shall be installed. Okaloosa County Convention Center has an existing irrigation system that includes elements within and adjacent to the existing roundabout on Santa Rosa Boulevard. In coordination with Okaloosa County, the Design-Build Firm will be allowed to modify the system to accommodate proposed irrigation for landscaping within the Santa Rosa Boulevard roundabout. Any proposed modification to the Convention Center irrigation system must be submitted to Okaloosa County for approval. Vertical obstructions shall be in place prior to opening roundabout to traffic.

Eastbound Connection Roadway Construction

A new Eastbound Connection shall be constructed to connect Santa Rosa Boulevard and SR 30. The typical section shall consist of two to four 11 ft lanes in a similar configuration as shown in the Concept Plans, curb and gutter, a 7 ft minimum **e width** raised median with traffic separator, a 12 ft shared use path along the left side of the typical section, and a 6 ft concrete sidewalk along the right side of the typical section. At the intersection with SR 30, lane requirements include dual northbound right turn lanes. Left turns will

be restricted. At the intersection with Santa Rosa Boulevard, lane requirements include a westbound left turn lane with a minimum length of 410 ft, and a shared westbound left/right turn lane. The required design speed for the Eastbound Connection is 20 mph.

Eastbound Connection Roundabout

A roundabout shall be constructed to provide access to the Hotel Entrance Road. The roundabout shall have a minimum inscribed circle diameter (ICD) of 130 ft for westbound traffic and a 154 ft ICD for eastbound traffic. The roundabout typical section will consist of one 12 ft lane and 12 ft sidewalk in the westbound direction and two 12 ft lanes and 6 ft sidewalk in the eastbound direction. The center of the roundabout will consist of a 106 ft diameter truck apron and a 60 ft diameter central island. The minimum design vehicle for this roundabout is a WB-40. Landscaping and/or community aesthetic features are required in the central island in conformity with FDOT Design Manual 213.9 and 213.12. Landscaping shall be designed and installed in a similar style and quality as the landscaping at the existing Hilton Garden Inn and Holiday Inn Resort entrance roundabout. Irrigation shall be installed. Vertical obstructions shall be in place prior to opening roundabout to traffic.

Hotel Entrance Roadway Construction

A Hotel Entrance Road shall be constructed on the southern end of the Eastbound Connection roundabout to tie into access at the Holiday Inn Resort off SR 30. The typical section will consist of two 12 ft travel lanes, raised median varying in width from 0 to 7 feet adjacent to the roundabout, curb and gutter, and a 6 ft sidewalk adjacent to the northbound lane. The required design speed for the Hotel Entrance Road is 15 mph. The existing roundabout at the south end of the proposed Hotel Entrance Road shall be removed.

Turn Lanes

A summary of required turn lanes are listed below. Turn lane widths and lengths shall be determined via applicable criteria, but shall at a minimum meet the requirements below.

<u>Mainline</u>	<u>Direction</u>	<u>Cross Street</u>	<u>Width (Ft.)</u>	<u>Total Length including Taper (Ft.)</u>
<u>SR 30</u>	<u>EBL</u>	<u>Perry Ave.</u>	<u>11</u>	<u>220</u>
<u>SR 30</u>	<u>WBR</u>	<u>Perry Ave.</u>	<u>12</u>	<u>460</u>
<u>SR 30</u>	<u>WBR</u>	<u>North Connector</u>	<u>11</u>	<u>428</u>
<u>SR 30</u>	<u>WBL</u>	<u>EB Connector</u>	<u>11</u>	<u>365</u>
<u>SR 30</u>	<u>EBR</u>	<u>EB Connector</u>	<u>11</u>	<u>560</u>
<u>SR 30</u>	<u>EBR</u>	<u>Hotel Entrances/Pier Road</u>	<u>11</u>	<u>956</u>
<u>SR 30</u>	<u>WBL</u>	<u>Hotel Entrances (Sta. 143+00)</u>	<u>11</u>	<u>245</u>
<u>SR 30</u>	<u>EBL</u>	<u>Pier Road</u>	<u>11 (2)</u>	<u>412</u>
<u>N. Perry</u>	<u>NBR</u>	<u>Publix</u>	<u>12</u>	<u>200</u>
<u>N. Perry</u>	<u>SBL</u>	<u>SR 30</u>	<u>12</u>	<u>440</u>
<u>S. Perry</u>	<u>NBL</u>	<u>SR 30</u>	<u>11</u>	<u>170</u>
<u>S. Perry</u>	<u>NBR</u>	<u>SR 30</u>	<u>11</u>	<u>140</u>
<u>S. Perry</u>	<u>SBL</u>	<u>Brooks St.</u>	<u>11</u>	<u>173</u>
<u>Santa Rosa Blvd</u>	<u>SBL</u>	<u>EB Connector</u>	<u>15</u>	<u>228</u>
<u>Santa Rosa Blvd</u>	<u>NBL</u>	<u>EB Connector</u>	<u>15</u>	<u>116</u>

<u>North Connector</u>	<u>NBR</u>	<u>Convention Center Loading Dock</u>	<u>11</u>	<u>198</u>
<u>EB Connector</u>	<u>WBR/L</u>	<u>Santa Rosa Blvd</u>	<u>11</u>	<u>410</u>

Permanent Access

The Design-Build Firm shall provide permanent driveway access to all properties and businesses better than or equal to existing access regarding width and material type.

All median openings shall be provided as shown in the Concept Plans included in this RFP.

Drainage

The Design-Build Firm will develop a drainage system to convey, treat, and attenuate runoff from the project. The Design-Build Firm will provide stormwater treatment and attenuation. Five stormwater management ponds are anticipated within the project limits: Ponds 1, 2, 4, 7A, and 8. Pond 1 is located in Fort Walton Beach. Ponds 2, 4, 7A, and 8 are located on Okaloosa Island.

The Design-Build Firm shall provide maintenance access to the stormwater ponds as follows:

- Pond 1 - Access shall be provided via one 15-foot minimum-width curb cut **concrete** driveway adjacent to the pond and located along the west side of Brooks St. so as to provide safe ingress and egress by maintenance vehicles and equipment.
- Pond 2 - Access shall be provided via one 15-foot minimum width curb cut **concrete** driveway adjacent to the pond and located along the east side of the west Business Access Rd. so as to provide safe ingress and egress by maintenance vehicles and equipment.
- Pond 8 - Access shall be provided via one 15-foot minimum width curb cut **concrete** driveway adjacent to the pond and located along the north side of the Eastbound Connection roadway so as to provide safe ingress and egress by maintenance vehicles and equipment.
- Pond 4 - Access shall be via the WB SR 30 (US 98) roadway shoulder adjacent to south side of the pond. A paved maintenance access turnout is not required for this pond.
- Pond 7A - Access shall be provided via one 15-foot minimum width curb cut **concrete** driveway adjacent to the pond and located along the south side of Santa Rosa Blvd. so as to provide safe ingress and egress by maintenance vehicles and equipment.

Access to all ponds shall be appropriately designed and stabilized to withstand maintenance equipment and vehicles.

Utilization of linear ponds adjacent to SR 30 will not be allowed.

Within the limits of reconstruction, the Design-Build Firm shall replace the existing drainage system with a new drainage system. No existing drainage structures/pipes will be allowed to remain in service within the reconstruction limits upon final acceptance.

Stormwater has been observed to stage on the south side of SR 30 west of Pier Road. Design-Build Firm's drainage design should address this issue.

Signing and Pavement Marking

The Design-Build Firm shall evaluate and provide guide signs, regulatory signs, warning signs, and pavement markings for all roads and driveways within the project limits. Pavement subject to temporary striping for maintenance of traffic beyond the limits of construction or widening shall be milled and resurfaced. All signs shall be new in conformance with MUTCD, TEM and Standard Plans and all applicable design bulletins.

Signalization and Intelligent Transportation Systems

Three signalized intersections will be constructed, including full signalization at SR 30 and SR 145 (Perry Avenue), SR 30 and Eastbound Connection, and Santa Rosa Boulevard and Eastbound Connection. The existing traffic signals at the intersection of SR 30 and Santa Rosa Boulevard will be removed.

The signalized intersection at SR 30 and SR 145 shall incorporate pedestrian signals and crosswalks on the north, south, east and west sides of the intersection to facilitate the movement of pedestrians.

The signalized intersection at SR 30 and the Eastbound Connection shall incorporate pedestrian signals and crosswalks on the south side of SR 30 to facilitate the movement of pedestrians across the Eastbound Connection.

The signalized intersection at Santa Rosa Boulevard and the Eastbound Connection shall incorporate pedestrian signals and crosswalks on the south, north and east side of the intersection to facilitate movement of pedestrians across Santa Rosa Boulevard and the Eastbound Connection, respectively.

All new signalized intersections in this project shall be constructed with new mast arm pole, high-definition IP addressable CCTV camera, NEMA TS2 Type 1 Controller Cabinets and Advance Traffic Controllers compatible with the current operating software at the Okaloosa County Traffic Operations Center. Standalone CCTV camera with Camera Lowering Device (CLD) on both sides of the bridge on the roadway approach-departure portion to monitor traffic conditions on the bridge is required for this project.

A fully autonomous Road Weather Information System (RWIS) on or near the bridge is required in this project and shall be connected via fiber optic-based communication to the Okaloosa County Traffic Management Center with Center-to-Center connectivity to the D-3 RTMC in Chipley to receive all transmitted data for operations and maintenance. The standalone CCTV cameras with CLD and the RWIS sites will be monitored and maintained by the Department from the District RTMC in Chipley.

Induction loop detection shall be used for design of permanent vehicular detection at all signalized intersections.

The Design-Build firm shall design, construct, operate, and maintain a smart work zone (SWZ) to include CCTV cameras maintaining full coverage through the duration of construction.

Lighting

The Design-Build Firm shall design and construct lighting along SR 30 within the limits of the new bridges and approaches within limits of retaining wall. Lighting constructed by Design Build Firm shall meet aesthetic requirements defined in the RFP. The Design-Build Firm shall design and construct the underdeck lighting for the portions of the project where US 98 is elevated at Santa Rosa Blvd. and at Brooks Street.

The Design-Build Firm shall design all remaining lighting which will be constructed by Gulf Power. See Figures 3 and 4 below depicting the approximate limits of lighting design and construction west and east of the proposed bridges. There is existing lighting on SR 30, Brooks Street, Florida Blanca Place, and Santa

Rosa Boulevard. The Design-Build Firm will be required to coordinate and complete the design **for /** replacement/relocation of any lighting on these streets disturbed during construction. The Design-Build Firm shall coordinate design of the lighting to be installed by others with Gulf Power. The Design Build Firm shall also coordinate with the City of Fort Walton Beach and Okaloosa County, as appropriate.

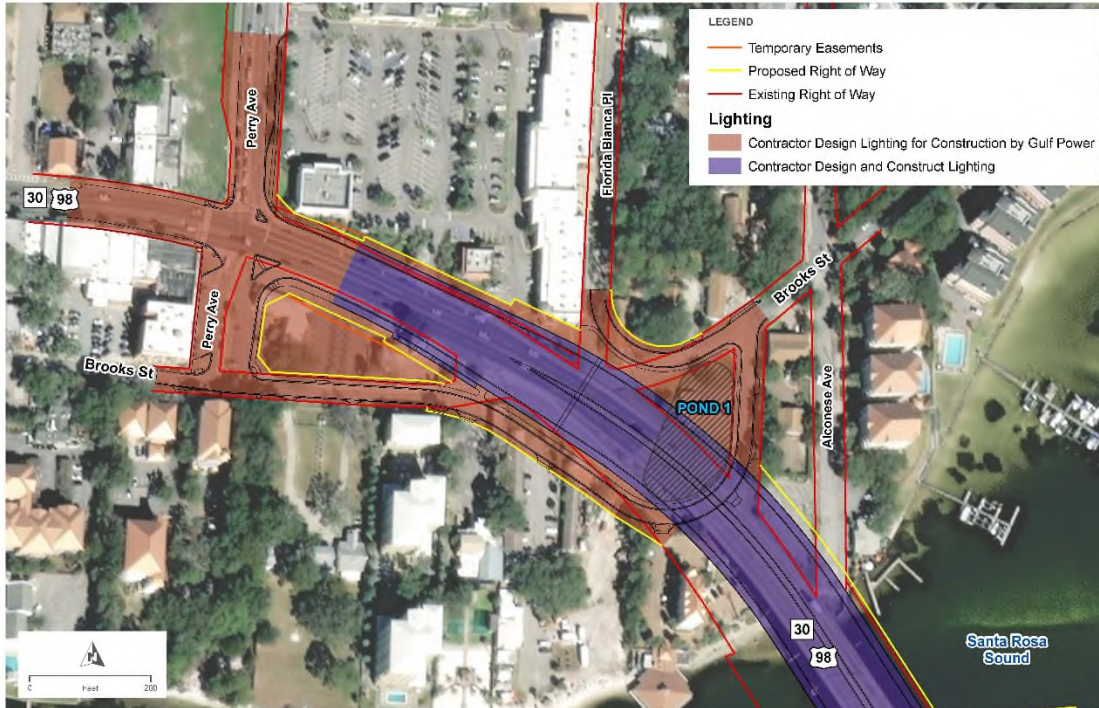


Figure 3: Lighting Design and Construction – West of Bridges

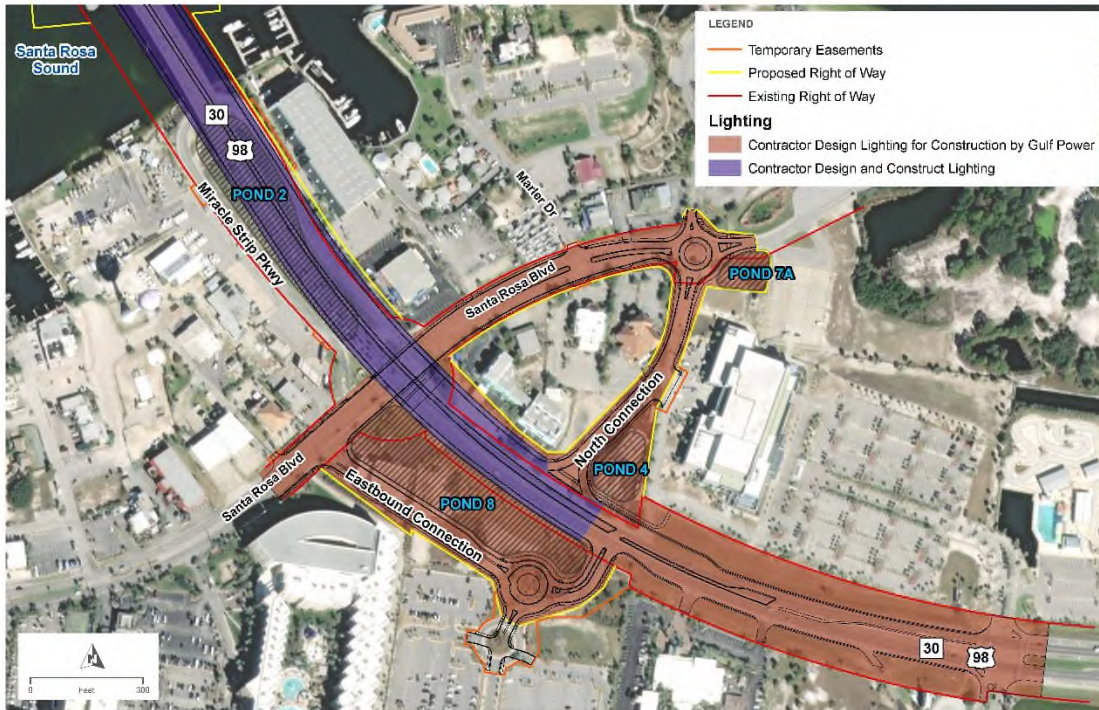


Figure 4: Lighting Design and Construction - East of Bridges

The proposed lighting is to be **typical** FDOT Conventional Lighting of the Light Emitting Diode (LED) type with full cutoff distribution to reduce sky glow as much as possible. High mast lighting is not allowed on this project.

The existing lighting in conflict with the proposed design shall be removed. **Temporary lighting shall be provided if existing lighting is removed prior to installation of proposed lighting.** The Design-Build Firm shall remove lighting in conflict and stockpile on site for the Department's contamination contractor to remove from the project. Contact the District Contamination Coordinator at (850) 330-1511.

Lighting Requirements:

- Lighting Design Analysis Report (LDAR)
- Power Design Analysis Report (PDAR)
- All new LED highway lighting system on SR 30, North Connection, and Eastbound Connection
- Navigational lighting
- Underdeck lighting at all overpass locations
- All signalized intersections
- Roundabout Lighting
- Side Street Lighting
- Shared use path on bridges
- Replace impacted lighting at Brooks Bridge Waterfront Park/ Brooks Bridge Fishing Park
- Aesthetic lighting

Brooks Bridge Waterfront Park / Brooks Bridge Fishing Park

The Design-Build Firm shall provide all needed design and construction services to restore the Brooks Bridge Waterfront Park and the Brooks Bridge Fishing Park. During construction, the Brooks Bridge Waterfront Park and the Brooks Bridge Fishing Park will be temporarily closed to public use for safety reasons. Following construction, the Design-Build Firm shall restore both of these park facilities including all current amenities to at least pre-construction conditions in coordination with the City of Fort Walton Beach. The Brooks Bridge Waterfront Park currently includes 44 public parking spaces, including handicap, motorcycle and bicycle parking; sidewalk as part of the Fort Walton Beach Boardwalk; pavers, shoreline stabilization, benches, picnic tables, lighting, landscaping, fencing, and a kayak/canoe launch. The Brooks Bridge Fishing Park (aka: City of Fort Walton Beach Fishing Park; currently includes lighting, bench, trash can, and shoreline stabilization. All park features impacted by construction shall be replaced with new amenities incorporating maintainable materials. The location, type, and configuration of the post-construction amenities shall be similar in scope and quality to the pre-construction amenities.

Ongoing Right-of-Way Acquisition Process

The Department's Right-of-Way Office is acquiring the necessary right-of-way for the project either by negotiated settlement or by the exercise of eminent domain (condemnation). The anticipated right-of-way clear date for the Project is included in the RFP. The right-of-way requirements for the Project are based on the maps as developed from the requirements of the conceptual plans included as a Reference Document in this RFP. Right-of-way maps provided are for informational purposes only. Design-Build Firm's verification with the public records is advised to confirm the accuracy of the maps. Construction activities cannot occur on acquired property until it has been certified as "clear" by the Department's Right-of-Way Office and a right-of-way certification has been issued by the Department. During the right-of-way acquisition process there are often instances where design commitments are made based on agreements with owners during settlement negotiations or as part of final negotiated settlements.

Such agreements are required to enable successful negotiations with property owners. Oftentimes, these agreements are of benefit to both the property owner and the Department. These agreements include, but are not limited to profile grade, driveway connections, culverts, ditch profiles, median openings, etc. Any design commitments made in settlement must be incorporated in the design and construction of the Project to not only function as a safe and efficient roadway, but for it to also consider the desires and needs of adjoining property owners. Any Right-of-way Commitments for these specific items are included as attachments to this RFP.

There will likely be agreements with property owners made during remaining right-of-way acquisition negotiations. As the right-of-way process progresses there may be commitments that will be forthcoming. Any right-of-way commitments made by the Department and subsequently issued to the awarded Design-Build Firm after contract execution shall be incorporated into the plans and design documents for the Project and be constructed as part of the Project. After Contract execution, if additional installations/modifications are required, the Department will negotiate with the Design-Build Firm on an appropriate supplemental agreement for the required work or in the Department's discretion pay for such work pursuant to Subarticle 4-3.2, Division I, Design-Build Specifications for this contract.

As the negotiation phase of any right-of-way parcel acquisition comes to a close there will likely be a need for one or more parcels that have not been acquired by negotiation to be condemned. Any such condemnation action will be initiated by the Department and will immediately require assistance and court testimony from the Engineer of Record for the Design-Build Firm regarding both public purpose and the reasonable necessity of specific parcels for the project. The Design-Build Firm will be required to provide any and all documentation immediately as may be requested by the Department to aid in the Right-of-Way acquisition process. The Design-Build Firm's Engineer of Record is required to be available as needed by the Department to assist in the Right-of-Way acquisition process. If the Design- Build Firm's Engineer of

Record is required to act as an expert witness (i.e. for deposition or court testimony) the Department will enter into a separate contract with the Design-Build Firm's Engineer of Record for this effort.

After right-of-way acquisitions are complete, the Department will have its demolition contractor (under a separate contract) remove all building, concrete slabs, concrete driveways, signs, septic tanks, and wells during its clearing activities. The Design- Build Firm will be responsible for any remaining clearing and grubbing including but not limited to existing fencing, trees, concrete removal, etc.

All design and construction activities for the project will be required to remain within the Department's right-of-way. The Department Right-of-Way Maps are available on the internet. These maps are the controlling document in reference to right-of-way line location. The concept plans may or may not accurately depict the right-of-way being acquired by the Department.

During the right-of-way acquisition negotiation process, the Department may obtain rights-of-entry or easements from property owners and document this specific access right in the Right-of-Way Commitments. For this reason, the Right-of-Way Commitments that include property access rights shall overrule the Right-of-Way Maps and the concepts plans.

Portions of the right-of-way being acquired by the Department are owned by Eglin Air Force Base. The Department will not consider proposed design changes which require additional Eglin Air Force Base property.

Right of Way Acquisition Process for Unique Proposals by Design-Build Firms

It is the Department's intent that all Project construction activities be conducted within the Right of Way. The Design-Build Firm may submit a Technical Proposal that requires the acquisition of additional Right of Way if the subject acquisition was approved during the Alternative Technical Concept (ATC) process. Any Technical Proposal that requires the acquisition of additional Right of Way will not extend the contract duration as set forth in the Request for Proposal under any circumstances. The Department will have sole authority to determine whether the acquisition of additional Right of Way on the Project is in the Department's best interest, and the Department reserves the right to reject the acquisition of additional Right of Way.

If a Design-Build Firm intends to submit a Technical Proposal that requires the acquisition of additional Right of Way, the Design-Build Firm shall discuss such a proposal with the Department as part of the ATC process. If a Design-Build Firm submits a Technical Proposal that requires the acquisition of additional Right of Way and the Design-Build Firm fails to obtain Department approval as part of the ATC process, then the Department will not consider such aspects of the Proposal during the Evaluation process. If the Design-Build Firm's Technical Proposal requires additional Right of Way approved by the ATC process, the additional Right of Way will be required to be directly acquired by the Department. The Design-Build Firm shall submit, along with the Technical Proposal, Right of Way maps and legal descriptions including area in square feet of any proposed additional Right of Way parcels in the Technical Proposal. The additional Right of Way will be acquired by the Department in accordance with all applicable state and federal laws, specifically including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs (42 USC Chapter 61) and its implementing regulations. This includes completing a State Environmental Impact Report (SEIR) or National Environmental Policy Act (NEPA) evaluation as appropriate. All costs concerning the acquisition of additional Right of Way will be borne solely by the Design-Build Firm. These costs include, but are not limited to consultant acquisition, appraisal services, court fees, attorney and any expert fees, property cost, etc. The Department will have sole discretion with respect to the entire acquisition process of the additional Right of Way.

If the Design-Build Firm's Technical Proposal requires additional Right of Way, the acquisition of any such Right of Way shall be at no cost to the Department, and all costs associated with securing and making ready for use such Right of Way for the Project shall be borne solely by the Design-Build Firm as a part of the Design-Build Firm's Lump Sum Price Bid. The Department will not advance any funds for any such Right of Way acquisition and the Design-Build Firm shall bear all risk of delays in the acquisition of the additional property, regardless of cause or source. No additional contract time will be granted.

The Design Build Firm shall provide to the Department an estimate of the purchase price of the land from the property owner and any conditions related to the purchase. The Department will provide to the successful Design-Build Firm an estimate of all costs related to the acquisition and use of the additional Right-of-Way for the project. At the time the Design-Build Firm returns the executed contract to the Department, the Design-Build Firm will provide the Department funds equal to the amount of the Department's estimate along with a Letter of Credit approved by the Department in an amount equal to 100% of the Department's estimate. If additional funds beyond the Department's estimate are anticipated, the Design-Build Firm shall be solely responsible for all such costs and provide the same to the Department upon ten (10) days written notice from the Department. The Letter of Credit is for the purpose of securing the obligations of the Design-Build Firm with respect to the acquisition and use of additional Right-of-Way. The Letter of Credit will be released upon the Department's determination that all costs related to the acquisition of and making ready for use of the additional Right-of-Way have been satisfied. Any remaining funds provided will be returned to the Design-Build Firm.

Any additional Right of Way must be acquired prior to the commencement of any construction on or affecting the subject property. The Design-Build Firm waives any and all rights or claims for information, compensation, or reimbursement of expenses with respect to the Design-Build Firm's payment to the Department for costs associated with the acquisition of the additional Right of Way. The additional Right-of-Way cannot be used for any construction activity or other purpose until the Department has issued an applicable parcel clear letter or a Right of Way Certification for Construction.

If the Department's attempt to acquire the additional Right of Way is unsuccessful, then the Design-Build Firm shall provide a design of the Project within existing Right of Way and be required to complete the Project solely for the Lump Sum Price Bid, with no further monetary or time adjustments arising therefrom. Under no circumstances will the Department be liable for any increase in either time or money impacts the Design-Build Firm suffers due to the Design-Build Firm's proposed acquisition of additional Right of Way, whether or not the acquisition is successful.

Intelligent Transportation Systems (ITS)

The Design-Build Firm shall provide a fiber optic-based communication trunk line **and lateral drops** connecting the signalized intersections and tie to the existing communication network of the Okaloosa County traffic management center. The conduits for the ITS **shall be comprised of two 2-inch HDPE and** shall be provided along SR 30 and inside the bridge railings to support the field-to-center connectivity of the signalized intersection Advance Traffic Controllers. The Design-Build Firm shall provide conduit **system** for all lighting and ITS requirements included in this document for the full project limits. For the waterway crossing, the Design-Build Firm shall install three – 2" conduit in each traffic railing on each bridge. All conduits available in the traffic railings are anticipated to be needed for lighting (**navigation and roadway**), **signal**, and ITS elements. The Design-Build Firm shall provide a design that also considers future conduit locations feasible for private utility companies that would be hidden from an exterior profile view of the bridges and be located between the beam bays with hangers designed to support the conduits.

ITS subsystems are later defined in this RFP document. The ITS subsystems for this project shall include **at a minimum** Advance Traffic Controllers for traffic signals, High Definition IP addressable CCTV cameras at each signalized intersection, two (2) high definition IP addressable CCTV camera to cover full viewing of the bridge over the waterways, fully autonomous Road Weather Information System (RWIS), Induction loop vehicular detection for signalized intersections, and ~~96- 144~~ counts of single mode fiber optic cables for communication with lateral connection to the Local Area Network inside the cabinets for traffic signal controllers and CCTV cameras. The ITS subsystems constructed as part of this project will be operated and maintained from Okaloosa County Traffic Operations Center with the exception of the two standalone CCTV with CLD and RWIS sites. The ITS ~~field devices, supporting infrastructure and equipment within the~~ scope of this Project shall include, **but not be limited to: field devices, supporting infrastructure,** communications design, **hardware power** design, technical specifications, design plans, fiber optic cable splicing plan(s), test plans, **Systems Engineering documents such as** Project Systems Engineering Management Plan (PSEMP), Requirements Traceability Verification Matrix (RTVM), utility coordination, design documentation report, **Intelligent Transportation Systems Facility Management (ITSFM), development of system test and acceptance procedures,** and incidental items as applicable to this Project. **Develop and submit each ITS test plans to the Department for review and approval. Use only equipment and components that meet the requirements of the RFP, which are listed on the Department's Approved Products List (APL) - and are compatible with SunGuide®. ITS components will be connected to the District 3 Regional Transportation Management Center via center to center connection to Okaloosa County Traffic Operations Center.**

Aesthetics

General Approach - The approach to an aesthetically pleasing Brooks Bridge shall start from a holistic understanding of the site context and differing conditions. The aesthetic approach shall work at the global scale of the project. FDOT conducted an online workshop to solicit public input on aesthetic elements and community values. The results are documented in the Brooks Bridge Aesthetic Workshop Survey Report (the "Aesthetic Survey Report") included as a Reference Document. The community overwhelmingly selected a "clean and contemporary" style over a historical or purely functional design. A contemporary design shall transition super structure depths in a gradual manner, provide consistent overhang cantilevers, and conceal conduits and drainage between girder lines. In addition, the Design Build Firm shall consider enhancements to piers, overlooks, railing, retaining walls, roadway lighting, aesthetic lighting, and pedestrian connectivity to provide a cohesive design that reflects community preferences as guided by the Aesthetic Survey Report. All aesthetic enhancements shall consider long term maintainability.

Sample aesthetic images are included as Reference Documents (Sample Aesthetic Interpretation and Views). These graphics provide examples of the visual quality of aesthetic elements required for this contract. The graphics represent one interpretation of the results of public involvement as documented in the Aesthetic Survey Report. The Design Build Firm is encouraged to develop its own interpretation of elements consistent with the Online Meeting Results. The Design-Build Firm may also propose a concept similar to the sample images provided.

Piers - The Contractor shall provide a contemporary pier form that is recognized to be representative of Fort Walton Beach and avoids typical highway pier forms. The pier geometry shall achieve shade and shadow differentiations by forming the pier to create surface variations. Considering the skewed alignment of the bridge over the navigational channel, the water and land piers shall be developed as a 'family of forms'. In order to address the urban design conditions of the low land piers, the design of the lowland piers can be a modification of the water pier form.

Overlooks - The Contractor shall provide a minimum of four (4) overlooks, including two on the eastbound bridge and two on the westbound bridge. Two overlooks (one on each bridge) shall be at the main span.

The other two shall be located as near as practical to the shoreline to provide easy access for pedestrians while preserving the privacy of structures on the land. Overlooks should be located to provide pleasing views of the waterway and surrounding area. Each overlook shall be a minimum of 300 SF not to include the 12 foot shared use path area. The overlook shape shall be curvilinear to avoid angular corners at the transition from the shared use path to the overlook. Each overlook shall have a canopy that is equal to or greater than the overlook surface area and include the majority of the adjacent shared use path area. Material selection shall be low maintenance and have a high resistance to wind induced damage or deformation. Illumination of the areas under the canopies shall be consistent with illumination along adjacent areas of the shared use path. **Divided benches shall be provided for pedestrian seating.**

Railing - The Contractor shall provide a contemporary railing system using low maintenance materials for a marine environment. The railing shall reduce the opportunities for birds to land. The railings shall be designed to FDOT Standards.

Retaining Walls - The Contractor shall design retaining walls finishes that have a contemporary design utilizing shallow (less than 4") relief and reflect public input documented in the Aesthetic Survey Report.

Roadway Lighting - The Contractor shall locate the roadway lighting poles **at the barrier between the shared use path and roadway** in a boulevard arrangement. The **lighting standards** should align transversely in plan rather than be staggered. The Contractor shall present concept plans with low height poles (in the 35' high range) that utilize LED light source with cut offs to avoid light spill into the water and neighborhoods. If needed to achieve the required foot candles on the path, secondary shared use path lighting shall be provided by luminaries embedded in the railing posts. Roadway lighting posts shall be of contemporary design with simple arms and without ornamentation. The same light posts shall be used throughout the corridor in locations where the Design Build Firm has responsibility for lighting construction.

Aesthetic Lighting -The Contractor shall provide aesthetic girder lighting on the bridge from abutment to abutment as well as aesthetic pier lighting. Aesthetic lighting shall include only white and/or blue lights along the girders and illuminating the piers. Lighting design and placement shall provide holistic aesthetic lighting; however, our preference is to reduce the total number of light fixtures to reduce maintenance efforts. The aesthetic lighting shall be located at the edge of the deck cantilever and focus lighting on the exterior girder on the north and south side only (not in between the two roadways). The fixtures shall be located in a chase designed to reduce the impacts of high wind and debris damaging the system. The color of the chase shall match the color of the deck material. Conduit boxes shall be placed behind the exterior girder unless the boxes can be located near the source without disrupting the light spread and out of causal viewing. The LED light spread shall be designed to be even across the face of the girder and not spill past the girder.

Pedestrian Connectivity -Connecting pedestrians to the bridge and providing pedestrian amenities was a desire of the public as described in the Aesthetic Survey Report. The Design Build Firm shall include a focus on connecting pedestrians and bicyclists to the bridge and enhancing opportunities for pedestrians and bicyclists to interact with the bridge, surrounding parks, and surrounding infrastructure.

Utilities

The Design-Build Firm will be responsible for providing utility adjustment plans and coordinating utility relocations. The Design-Build Firm shall be responsible for determining, through the use of non-destructive means, both the horizontal and vertical location of all existing utilities above and below ground within the project limits, and for coordinating with the Utility owner(s) for any necessary relocation and/or adjustment of their utilities through the development of a comprehensive utility work schedule. Existing utility location

information is provided in the RFP and Reference Documents. The Design-Build Firm shall avoid utility impacts as much as possible. Avoidance techniques, such as utility conflict structures, should be used to avoid impacts.

Along with coordinating utility relocations for the project, the Design-Build Firm is required to perform Utility Work by Highway Contractor (UWHC) for the following UA/O's.

1. Okaloosa County Water & Sewer (OCWS) – All Relocations – Conceptual UWHC Relocation Plans are provided based on the Concept Plans
2. Eglin AFB Communications – All Relocations – UWHC Relocation Plans to be coordinated
3. Cox Communications, Century Link, AT&T Florida, Okaloosa County Traffic Board of County Commissioners (BCC) Information Technology, and Uniti – Partial Relocations - Six (6) four-inch (4”) communications ducts to be placed under the bridge for use for relocation.

The Design-Build Firm shall design, permit, and relocate/adjust OCWS water and sewer facilities as required for the construction of the project. The approximate limits shown in the concept plans are the required begin and end limits for the new utility lines. The concept plans depict the required tie-in locations for each utility relocation, and item (i) describes the delineation of work between OCWS and the Design-Build firm as it relates to utility connections and tie-ins. ~~The concept plans indicate where casing will be required. All OCWS utility lines under the state roadways (SR 30 and SR 145) shall be cased. Location of crossings shall be coordinated with the utility owner. The Concept Plans depict the general intent of the Okaloosa County utility relocation. It is ultimately the Design-Build Firms responsibility to design and construct the utility relocations. All concept plan callouts labeled “proposed” and any additional conceptual line locations in the concept plans are the responsibility of the Design-Build Firm to design and construct.~~ The Design-Build Firm shall utilize new materials in compliance with OCWS Standard Specifications and Design Manual. Re-use of existing piping, appurtenances, and other equipment is not allowed unless specifically indicated in conceptual plans. All valves, ARVs, sampling locations, and related appurtenances that may be required for permitting, testing, and clearing the utility relocations shall be designed and installed by the Design-Build Firm. This work will be funded under FPID 415474-2-56-01 and shall be bid accordingly under the FPID.

Design of OCWS Utility Work

- a) The Design-Build Firm shall prepare a final engineering design, plans, technical special provisions, permit applications (including, but not limited to, OCWS, FDEP and the FDOT) for the utility work for Okaloosa County Water and Sewer in accordance with the OCWS Standard Specifications and Design Manual.
(http://www.co.okaloosa.fl.us/sites/default/files/doc/dept/ws/Spec_Manual.pdf). In the event of a conflict between the OCWS requirements and any FDOT Governing Regulations, the Department shall determine which provisions apply based on the intent and purpose of the OCWS Utility Work.
- b) The Plans Package shall be in the same format as the Department's contract documents for the Project and shall be suitable for reproduction.
- c) Unless otherwise specifically directed in writing, the Plans Package shall include any and all activities and work effort required to perform the utility work, including, but not limited to, all clearing and grubbing, permitting, survey, subsurface engineering (as required), utility coordination (telephone, fiber, cable, electrical, gas, etc.) and shall include traffic and erosion control plans.

- d) Construction costs for mobilization, clearing and grubbing and maintenance of traffic for this utility work are to be included in the main project and not in the utility relocations cost.
- e) The Plans Package shall be prepared in compliance with the FDOT Utility Accommodation Manual and the FDOT Design Manual, and the Department's contract documents for the Project. If the FDOT Design Manual conflicts with the FDOT Utility Accommodation Manual, the Utility Accommodation Manual shall apply where such conflicts exist.
- f) The Design-Build Firm shall prepare the Utility Work's technical special provisions, which are a part of the Plans Package, in accordance with the Department's guidelines on preparation of technical special provisions and shall not duplicate or change the general contracting provisions of the FDOT Standard Specifications for Road and Bridge Construction and any Supplemental Specifications for the Project.
- g) The Design-Build Firm shall provide a copy of the proposed Plans Package to the Department and OCWS for review at the following stages: 60%, 90% and 100% plans.
- h) The Design Build Firm shall at all times be and remain solely responsible for proper preparation of the Plans Package and for verifying all information necessary to properly prepare the Plans Package, including survey information as to the location (both vertical and horizontal) of the Utility Facilities.
- i) The utility work will include all utility facilities of OCWS which are located within the limits of the Project, except those facilities agreed to by OCWS to be performed by their forces, of which shall only include installing the final utility tie-ins to the existing system, for both water and sewer. All materials and labor related to the final utility tie-ins will be provided by OCWS, and shall include fittings, valves, tees, tapping sleeves, linestops, restraints and thrust blocking as required to complete the tie-in work. These exceptions shall be handled by the Design-Build Firm through utility coordination efforts. The Design-Build Firm shall coordinate the timing and scheduling of the tie-ins directly with OCWS.
- j) All new and existing residential and/or commercial service connections will be required to be designed and installed by the Design-Build Firm. It will be the Design-Build Firm's responsibility to determine the number and location of service connections required. Coordination of existing and proposed service connections will be confirmed with OCWS. The Design-Build Firm will be responsible for running the service to the meter and provide all testing. OCWS will be responsible for the connections to the meters.
- k) Utility facilities of OCWS shall not be mounted to the exterior faces of structures and **aerial** must be hidden from view. **The transition from aerial to ground shall be coordinated with OCWS. The OCWS Conceptual Plans inaccurately depict utilities mounted to the MSE wall. OCWS facilities shall not be mounted onto MSE wall.**
- l) The Design-Build Firm shall fully cooperate and coordinate the utility work with all other right of way users in the preparation of the Plans Package.
- m) Upon completion of the utility work, the facilities shall be deemed to be located on the Department's right-of-way under and pursuant to the Utility Permit to be issued by the Department. The Design-Build Firm shall facilitate and comply with all permit conditions, and provide all

disinfection, pressure testing, laboratory tests, permit certifications, record drawings, etc. to obtain regulatory approval and clearance to place the utilities in service.

Utilities Protected in Place

- a) It is the intent of OCWS to protect-in-place the existing 16" HDPE directionally bored force main crossing on the southern side of the proposed bridge work (Sta.111-Sta.206). Upon completion of the new navigational channel barrier system OCWS shall conduct a pressure test of the existing 16" HDPE directionally bored force main (OCWS) crossing to verify that the force main was not damaged during construction. OCWS shall cap the existing 16" HDPE force main on both ends of the existing bore as shown on the plans, and the force main shall be left in place for future use by OCWS.

Performance of OCWS Utility Work

- a) The Department shall perform all engineering inspection, and monitoring of the Utility Work to ensure that it is properly performed in accordance with the Plans Package. OCWS shall have representation on site periodically for consultation as necessary.
- b) Testing, monitoring and reporting shall be performed by the Design-Build Firm in accordance with standard industry practices for water and wastewater and in accordance with the OCWS Standard Specifications and Design Manual.
- c) All out of service OCWS mains, services, and appurtenances that are in conflict with the Design-Build Firm's Project design shall be removed and cost of removal be covered under FPID 415474-2-56-01. Should out of service facilities not require removal, then Design-Build Firm shall **fill the facilities with flowable fill and** cap them **and place them out of service** with costs being covered under FPID 415474-2-56-01.

Sequence of Construction

The Design-Build Firm shall follow the following proposed sequence of construction for all proposed OCWS water and sewer work:

OCWS Utility Relocations - Sewer

- a) Remove and relocate 6" force main (Sta.132 – Sta.138); OCWS to self-perform utility tie-ins to the existing system.
- b) Construct new 16" aerial flanged force main across newly constructed northern bridge span. Construct new 16" (underground) force main on both the east and west ends of the new bridge as required to connect to the existing force main system. OCWS to self-perform utility tie-ins to the existing force main system. Once the new 16" aerial force main on the northern bridge span is in service, Design-Build Firm shall disassemble and remove the existing 16" aerial force main across the existing bridge span.
- c) OCWS will cut and cap the existing 16" HDPE directionally bored force main crossing, and once all bridge work is completed OCWS will pressure test the bored force main to verify if any damage occurred during construction.
- d) Construct new 16" aerial flanged force main across newly constructed southern bridge span. Construct new 16" (underground) force main on both the east and west ends of the new bridge as required to connect to the existing force main system.

OCWS Utility Relocations - Water

- a) Remove and relocate 12" water main along SR30 (Sta.132 – Sta.148); OCWS to self-perform utility tie-ins to the existing system.
- b) Remove and relocate 6" water main along SR30 (Sta.135 – Sta.139); OCWS to self-perform utility tie-ins to the existing system.
- c) Remove, relocate, and adjust 6" and 12" water mains along Santa Rosa Blvd (Sta.46 – Sta.51); OCWS to self-perform utility tie-ins to the existing system.
- d) Remove, relocate, and adjust 6" water main along New North Connection Road (Sta.404 – Sta.406); OCWS to self-perform utility tie-ins to the existing system.
- e) Construct new 16" aerial flanged water main across newly constructed northern bridge span. Construct new 16" (underground) water main on both the east and west ends of the new bridge as required to connect to the existing water main system. OCWS to self-perform utility tie-ins to the existing water main system. Once the new 16" aerial water main on the northern bridge span is in service, Design-Build Firm shall disassemble and remove the existing 16" aerial water main across the existing bridge span.

The Design-Build Firm shall comply with the Utility Work by Highway Contractor Agreement that the Department executed with Okaloosa County Water & Sewer (see RFP Attachment Documents). **The Design-Build Firm is required to coordinate and resolve any comments or issues raised by Okaloosa County related to water and sewer relocations. The Design-Build Firm must receive Okaloosa County approval before RFC plans.**

During the Design-Build procurement process for this contract, the Design-Build Firm shall not coordinate directly with Okaloosa County Water & Sewer due to their work being a requirement of this RFP. All questions related to their utility work requirements will be required to go through the FDOT Bid Question website.

The Design-Build Firm shall design, permit, and relocate/adjust Eglin AFB Communications facilities as required for the construction of the project. The Design-Build Firm shall coordinate this work directly with Eglin AFB Communications in determining the appropriate relocation plan, materials, specifications, and guidelines required by Eglin AFB Communications. During the Design-Build procurement process for this contract, the Design-Build Firm shall not coordinate directly with Eglin AFB due to their work being a requirement of this RFP. All questions related to their utility work requirements will be required to go through the FDOT Bid Question website. See RFP Reference Documents for 96 CS Design Guide.

The Design-Build Firm shall design, furnish, and install conduit under the bridge for Cox Communications, Century Link, AT&T Florida, Okaloosa County **Traffic Board of County Commissioners (BCC) Information Technology**, and Uniti Fiber. Conduit shall be 4" stainless steel and shall include all appurtenances necessary for bridge attachment. **Stainless steel rigid conduits are to be Type 316 stainless steel with standard NPT threads. All elbows, nipples, couplings, connectors, hubs, clamps, u-bolts, plates, strut accessories and hardware are to be in kind with the stainless steel conduits. All components shall meet UL 6A and NEMA 4X standards, and be fully compliant with NEC. Aerial junction boxes or communication pull boxes are to be made with 316 stainless steel, double gang hub configuration, UL listed for US (Standard 514A), and sized for the conduits and quantities of conduits used. Spacing for the aerial junction boxes or communication pull boxes are to be determined by the Design-Build Firm based on the alignment of the bridge.** Conduit placement shall meet contract aesthetic

requirements and shall terminate on the roadway side of each abutment at a location accessible by standard vehicle for each UA/O. During the Design-Build procurement process for this contract, the Design-Build Firm shall not coordinate directly with ~~with~~ Cox Communications, Century Link, AT&T Florida, Okaloosa County Traffic and Uniti Fiber regarding work described within their respective Utility Work by Highway Contractor Agreement due to their work being a requirement of this RFP. All questions related to ~~the their~~ utility work described within their respective Utility Work by Highway Contractor Agreement requirements will be required to go through the FDOT Bid Question website. This work Work included in Utility Work by Highway Contractor Agreements will be funded under FPID 415474-2-52-02 and shall be bid accordingly under this FPID. Installation of conduit for Okaloosa County Board of County Commissioners (BCC) Information Technology shall be bid under 415474-2-52-01.

AT&T services will require a temporary crossing to be installed within one of the conduits described above. The AT&T subaqueous service will have to be relocated by AT&T to the temporary crossing prior to working within 10 ft of the limits of the subaqueous line. Post-construction of this project, AT&T intends to relocate their facilities from the temporary crossing back to their existing subaqueous line.

During utility coordination on side roads requiring utility relocations, location preference shall be given to utilities belonging to the roadway owner. Utilities impacted along side streets and requiring relocation are subject to utility permits required by the local government. The Design-Build Firm shall be responsible for obtaining utility permits for Okaloosa County Water and Sewer relocations and coordinating other utility relocation permits.

Permitting

FDOT will submit FDEP ERP and FDEP State 404 Permit applications based on the concept plans. The Design-Build Firm will be responsible for submitting and obtaining the USCG Bridge Permit and completing, modifying and obtaining the FDEP ERP and FDEP State 404 Permits based on the final design plans. All other permitting activities are the responsibility of the Design-Build Firm.

Demolition of the Existing Bridge Superstructure and Substructure

The Design-Build Firm shall demolish and remove the existing bridge, fender system and dolphins. The existing bridge substructure was not designed to resist vessel collision. It is the responsibility of the Design-Build Firm to protect the existing bridge from vessel collision during all phases of construction. The capacity of the existing bridge shall not be considered to resist vessel impact. External protection is required. The existing bridge substructure level of protection against vessel collision (dolphins and fender system) that is currently in place must be maintained throughout all phases of construction prior to demolition.

The Design-Build Firm shall be responsible for development of demolition plans outlining details for the work. Demolition plans must include at a minimum, but are not limited to the following: specific requirements pertaining to the demolition work, specific requirements and notes for the relocation (disposal) of the superstructure and substructure, miscellaneous shoreline and approach work, utility identification, maintenance of traffic (MOT) that will ensure all existing lanes remain open, storm water control, sedimentation control, and notes pertaining to the protection of endangered species

The original bridge at the project location was a swing bridge that was removed to construct the existing bridge. Foundational elements may be encountered.

The Department has obtained a Hydrographical Condition Survey for the project area. The Design-Build Firm shall review and evaluate findings of the survey in conjunction with their proposed design.

The Design-Build Firm will be required to remove any debris that may still be located under water (i.e. old piles from previously removed structures, footings from previously removed structures, portions of old marine vessels, etc.) that are in conflict with the new bridge and fender construction. Within the limits of the main span and fender system, any existing foundations must be removed to 24 inches below the mudline, taking into account long term scour depths when determining the elevation of the mudline. The existing bridge shall be removed in accordance with FDOT Specifications.

Okaloosa County currently has permitted artificial reef sites in the area. The Department's preference is to dispose of any feasible bridge debris in these permitted artificial reef sites. The Okaloosa County artificial reef information is included in the Reference Documents of this RFP. Coordinate with Alex Fogg, Destin-Fort Walton Beach Coastal Resource Manager, if utilizing the permitted artificial reef sites for bridge debris disposal.

The concrete debris from the existing bridge will become the responsibility of the Design-Build Firm.

Existing Vegetation Preservation and Exotic Vegetation Removal

It is the intent to always preserve existing vegetation including trees and palms that do not conflict with proposed improvements. Tree and palm protection shall comply with FDOT Standard Plans for Road and Bridge Construction (Standard Plans), Index 110-100. Within the Project limits and within the Project Right of Way, it will be the responsibility of the Design-Build Firm to identify and remove all Category 1 invasive exotics as defined by the Florida Exotic Pest Plant Council (www.fleppc.org) and as identified in the Landscape Opportunity Plan.

Miscellaneous

The intent of this Project is to replace, repair or rehabilitate all deficiencies noted in the RFP within the Project limits such that maintenance work required upon Final Acceptance is limited to routine work.

A. Design-Build Responsibility

The Design-Build Firm shall be responsible for survey, geotechnical investigation, design, preparation of all documentation and acquisition of all permits, maintenance of traffic, demolition, and construction on or before the Project completion date indicated in the Proposal. The Design-Build Firm shall coordinate all utility relocations.

The Design-Build Firm shall be responsible for compliance with Design and Construction Criteria (Section VI) which sets forth requirements regarding survey, design, construction, and maintenance of traffic during construction, requirements relative to Project management, scheduling, and coordination with other agencies and entities such as state and local government, utilities and the public.

The Design-Build Firm shall be responsible for reviewing the approved EA with FONSI and Reevaluation. The Design-Build Firm is responsible for coordinating with the District Environmental Office any engineering or other information related to Environmental Reevaluations. The Design-Build Firm will not be compensated for any additional costs or time associated with Reevaluation(s) resulting from proposed design changes.

The Design-Build Firm may propose changes which differ from the approved EA with FONSI and Reevaluation. Proposed changes must be coordinated through the Department. If changes are proposed to the

configuration, the Design-Build Firm shall be responsible for preparing the necessary documentation required for the Department to analyze and satisfy requirements to obtain approval of the Department, and if applicable, the Office of Environmental Management (OEM) for the NEPA document. The Design-Build Firm shall provide the required documentation for review and processing. Approved revisions to the configuration may also be required to be included in the Reevaluation of the NEPA document or SEIR Reevaluations, per Section O (Environmental Services/Permits/Mitigation) of the RFP. The Design-Build Firm will not be compensated for any additional costs or time resulting from proposed changes.

The Design-Build Firm shall examine the Contract Documents and the site of the proposed work carefully before submitting a Proposal for the work contemplated and shall investigate the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of all Contract Documents. Written notification of differing site conditions discovered during the design or construction phase of the Project will be given to the Department's Project Manager.

The Design-Build Firm shall examine boring data, where available, and make their own interpretation of the subsoil investigations and other preliminary data, and shall base their bid on their own opinion of the conditions likely to be encountered. The submission of a proposal is prima facie evidence that the Design-Build Firm has made an examination as described in this provision.

The Design-Build Firm shall demonstrate good Project management practices while working on this Project. These include communication with the Department and others as necessary, management of time and resources, and documentation.

The Design-Build Firm will provide litter removal and mowing within the project limits in accordance with Specification Section 107 with a 30-day mowing frequency and a bi-weekly litter removal. This includes debris on bridge deck which shall be removed within 30 minutes of notification. Monthly bridge sweeping is required.

B. Department Responsibility

The Department will provide contract administration, management services, construction engineering inspection services, environmental oversight, and quality acceptance reviews of all work associated with the development and preparation of the contract plans, and construction of the improvements. The Department will provide Project specific information and/or functions as outlined in this document.

In accordance with 23 CFR 636.109 of the FHWA, in a Federal Aid project, the Department shall have oversight, review, and approval authority of the permitting process.

The Department will determine the environmental impacts and coordinate with the appropriate agencies during the preparation of NEPA or SEIR Reevaluations. For federal projects, NEPA Reevaluations will be processed by the Department's EMO Office for approval by OEM pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the FHWA and the Department.

II. Schedule of Events.

Below is the current schedule of the events that will take place in the procurement process. The Department reserves the right to make changes or alterations to the schedule as the Department determines is in the best interests of the public. Proposers will be notified sufficiently in advance of any changes or alterations in the schedule. Unless otherwise notified in writing by the Department, the dates indicated below for

submission of items or for other actions on the part of a Proposer shall constitute absolute deadlines for those activities and failure to fully comply by the time stated shall cause a Proposer to be disqualified.

Date	Event
<u>2/28/2020</u>	Planned Advertisement
<u>7/12/2021</u>	Current Advertisement
<u>8/2/2021</u>	Letters of Interest for Phase I of the procurement process due in District Office by 4:00 PM local time.
<u>8/30/2021</u>	Proposal Evaluators submit Letter of Interest Scores to Contracting Unit 8:00 AM local time
<u>9/2/2021</u>	Contracting Unit provides Letter of Interest scores and Proposal Evaluators comments to Selection Committee 12:00 PM local time
<u>9/7/2021</u>	Public Meeting of Selection Committee to review and confirm Letter of Interest scores 9:00 AM local time
<u>9/7/2021</u>	Shortlist Posting Date
9/13/2021	Final RFP provided to Design-Build Firms continuing to Phase II of the procurement process 4:00 PM local time
9/21/2021	<p>Mandatory Pre-Proposal meeting at 1:30 PM local time <u>in Florida Department of Transportation, 1074 Highway 90, Chipley, FL 32428.</u> All Utility Agency/Owners that the Department contemplates an adjustment, protection, or relocation is possible are to be invited to the Mandatory Pre-Proposal Meeting.</p> <p><u>Please join my meeting from your computer, tablet or smartphone.</u> <u>https://global.gotomeeting.com/join/160016029</u></p> <p><u>You can also dial in using your phone.</u> <u>United States: +1 (786) 535-3211</u></p> <p><u>Access Code: 160-016-029</u></p> <p><u>Join from a video-conferencing room or system.</u> <u>Dial in or type: 67.217.95.2 or inroomlink.goto.com</u> <u>Meeting ID: 160 016 029</u> <u>Or dial directly: 160016029@67.217.95.2 or 67.217.95.2##160016029</u></p>
9/21/2021	<p>Utility Pre-Proposal Meeting facilitated by the District Utility Administrator at 1:30 PM local time <u>at Florida Department of Transportation, 1074 Highway 90, Chipley, FL 32428.</u></p> <p><u>Please join my meeting from your computer, tablet or smartphone.</u> <u>https://global.gotomeeting.com/join/160016029</u></p> <p><u>You can also dial in using your phone.</u> <u>United States: +1 (786) 535-3211</u></p> <p><u>Access Code: 160-016-029</u></p>

	<p>Join from a video-conferencing room or system. Dial in or type: 67.217.95.2 or inroomlink.goto.com Meeting ID: 160 016 029 Or dial directly: 160016029@67.217.95.2 or 67.217.95.2##160016029</p>
<u>10/1/2021</u>	Deadline for Design-Build Firm to request participation in One-on-One Alternative Technical Concept Discussion Meeting No. 1 4:00 PM local time
<u>10/8/2021</u>	Deadline for Design-Build Firm to submit preliminary list of Alternative Technical Concepts prior to One-on-One Alternative Technical Concept Discussion Meeting No. 1 4:00 PM local time
<u>10/14/2021</u>	One-on-One Alternative Technical Concept Discussion Meeting No. 1. 90 Minutes will be allotted for this Meeting.
<u>10/14/2021</u>	Deadline for Design-Build Firm to request participation in One-on-One Alternative Technical Concept Discussion Meeting No. 2, 4:00 PM local time
<u>10/22/2021</u>	Deadline for Design-Build Firm to submit preliminary list of Alternative Technical Concepts prior to One-on-One Alternative Technical Concept Discussion Meeting No. 2. 4:00 PM local time
<u>11/2/2021</u>	One-on-One Alternative Technical Concept Discussion Meeting No. 2. 90 Minutes will be allotted for this Meeting.
<u>11/16/2021</u>	Deadline for submittal of Alternative Technical Concept Proposals 4:00 PM local time.
<u>11/16/2021</u>	Final deadline for submission of requests for Design Exceptions or Design Variations. 4:00 PM local time.
12/21/2021 12/22/2021	Addendum issued for approved Design Exceptions. 4:00 PM local time
2/8/2022 2/15/2022	Deadline for submittal of questions, for which a response is assured, prior to the submission of the Technical Proposal. All questions shall be submitted to the Pre-Bid Q&A website.
2/15/2022 2/22/2022	Deadline for the Department to post responses to the Pre-Bid Q&A website for questions submitted by the Design-Build Firms prior to the submittal of the Technical Proposal.
2/17/2022 3/1/2022	Technical Proposals due in District Office by 2:00 PM local time.
2/17/2022 3/1/2022	Deadline for Design-Build Firm to “opt out” of Technical Proposal Page Turn meeting.
2/24/2022 3/8/2022 3/17/2022	Technical Proposal Page Turn Meeting. Times will be assigned during the Pre-Proposal Meeting. 30 Minutes will be allotted for this Meeting.
3/23/2022 4/5/2022	Question and Answer Written Responses. Deadline for the Department to provide a list of questions/clarifications for the Design-Build Firm to answer.
3/31/2022 4/12/2022	Deadline for submittal of Question and Answer Written Responses to the Department’s questions/clarifications from the Design-Build Firm. 4:00 PM local time

<u>4/7/2022</u> <u>4/19/2022</u>	Deadline for submittal of follow up questions to previously submitted Question and Answer Written Responses to the Department's questions/clarifications from the Design-Build Firm. 4:00 PM local time
<u>4/14/2022</u> <u>4/26/2022</u>	Deadline for submittal of Question and Answer Written Responses to the Department's follow up questions. 4:00 PM local time.
<u>4/14/2022</u> <u>4/26/2022</u>	Deadline for submittal of questions, for which a response is assured, prior to the submission of the Price Proposal. All questions shall be submitted to the Pre-Bid Q&A website.
<u>4/19/2022</u> <u>4/29/2022</u>	Deadline for the Department to post responses to the Pre-Bid Q&A website for questions submitted by the Design-Build Firms prior to the submittal of the Price Proposal.
<u>4/19/2022</u> <u>4/29/2022</u>	Deadline for the Design-Build Firm to submit a written statement per Section III. Threshold Requirements, F. Question and Answer Written Responses
<u>4/21/2022</u> <u>5/4/2022</u>	Price Proposals due in District Office by 10:00 AM local time.
<u>4/21/2022</u> <u>5/4/2022</u>	Public announcing of Technical Scores and opening of Price Proposals at 10:30 AM local time in 1074 Highway 90, Chipley, FL 32428
<u>4/25/2022</u> <u>5/9/2022</u>	Public Meeting Date of Selection Committee to determine intended Award
<u>4/25/2022</u> <u>5/9/2022</u>	Final Selection Posting Date
<u>4/29/2022</u> <u>5/13/2022</u>	Anticipated Award Date
<u>5/20/22</u> <u>6/6/2022</u>	Anticipated Execution Date

III. Threshold Requirements.

A. Qualifications

Proposers are required to be pre-qualified in all work types required for the Project. The technical qualification requirements of Florida Administrative Code (F.A.C.) Chapter 14-75 and all qualification requirements of F.A.C. Chapter 14-22, based on the applicable category of the Project, must be satisfied.

B. Joint Venture Firm

Two or more Firms submitting as a Joint Venture must meet the Joint Venture requirements of Section 14-22.007, F.A.C. Parties to a Joint Venture must submit a Declaration of Joint Venture and Power of Attorney Form No. 375-020-18, prior to the deadline for receipt of Letters of Interest.

If the Proposer is a Joint Venture, the individual empowered by a properly executed Declaration of Joint Venture and Power of Attorney Form shall execute the proposal. The proposal shall clearly identify who will be responsible for the engineering, quality control, and geotechnical and construction portions of the Work. The Joint Venture shall provide an Affirmative Action Plan specifically for the Joint Venture.

C. Price Proposal Guarantee

A Price Proposal guaranty in an amount of not less than five percent (5%) of the total bid amount shall accompany each Proposer's Price Proposal. The Price Proposal guaranty may, at the discretion of the Proposer, be in the form of a cashier's check, bank money order, bank draft of any national or state bank, certified check, or surety bond, payable to the Department. The surety on any bid bond shall be a company recognized to execute bid bonds for contracts of the State of Florida. The Price Proposal guaranty shall stand for the Proposer's obligation to timely and properly execute the contract and supply all other submittals due therewith. The amount of the Price Proposal guaranty shall be a liquidated sum, which shall be due in full in the event of default, regardless of the actual damages suffered. The Price Proposal guaranty of all Proposers' shall be released pursuant to 3-4 of the Division I Design-Build Specifications.

D. Pre-Proposal Meeting

Attendance at the pre-proposal meeting is mandatory. Any Short-Listed Design-Build Firm failing to attend will be deemed non-responsive and eliminated from further consideration. The purpose of this meeting is to provide a forum for the Department to discuss with all concerned parties the proposed Project, the design and construction criteria, Critical Path Method (CPM) schedule, and method of compensation, instructions for submitting proposals, Design Exceptions, Design Variations, and other relevant issues. In the event that any discussions at the pre-proposal meeting require official additions, deletions, or clarifications of the Request for Proposal, the Design and Construction Criteria, or any other document, the Department will issue a written addendum to this Request for Proposals as the Department determines is appropriate. No oral representations or discussions, which take place at the pre-proposal meeting, will be binding on the Department. FHWA will be invited on Projects of Division Involvement (PoDIs), in order to discuss the Project in detail and to clarify any concerns. Proposers shall direct all questions to the Departments Question and Answer website:

<https://fdotwp1.dot.state.fl.us/BidQuestionsAndAnswers/>

Failure by a Proposer to attend or be represented at the pre-proposal meeting will constitute a non-responsive determination of their bid package. Bids found to be non-responsive will not be considered. All Proposers must be present and signed in prior to the start of the mandatory pre-proposal meeting. The convener of the meeting will circulate the attendee sign in sheet at the time the meeting was advertised to begin. Once all Proposers have signed, the sign in sheet will be taken and the meeting will "officially" begin. Any Proposer not signed in at the "official" start of the meeting will be considered late and will not be allowed to propose on the Project.

E. Technical Proposal Page-Turn Meeting

The Department will meet with each Proposer, formally for thirty (30) minutes, for a page-turn meeting. FHWA will be invited on Projects of Division Interest (PoDIs). The purpose of the page-turn meeting is for the Design-Build Firm to guide the Technical Review Committee through the Technical Proposal, highlighting sections within the Technical Proposal that the Design-Build Firm wishes to emphasize. The page-turn meeting will occur between the date the Technical Proposal is due and the Question and Answer Written Response occurs, per the Schedule of Events section of this RFP. The Department will terminate the page-turn meeting promptly at the end of the allotted time. The Department will record all of the page-turn meeting. All recordings will become part of the Contract Documents. The page-turn meeting will not constitute discussions or negotiations. The Design-Build Firm will not be permitted to ask questions of the Technical Review Committee during the page-turn meeting. Roll plots submitted with the Technical Proposal and an unmodified aerial or map of the project limits provided by the Design-Build Firm is acceptable for reference during the page-turn meeting. The unmodified aerial or map may not be left with the Department upon conclusion of the page turn meeting. The use of the electronic

screen will be permitted for display of the Technical Proposal, roll plots, and unmodified aerial or map of the project limits. Upon conclusion of the thirty (30) minutes, the Technical Review Committee is allowed five (5) minutes to ask questions pertaining to information highlighted by Design-Build Firm. Participation in the page-turn meeting by the Design-Build Firm shall be limited to eight (8) representatives from the Design-Build Firm. Design-Build Firms desiring to opt out of the page-turn meeting may do so by submitting a request to the Department.

F. Question and Answer Written Responses

The Department will provide all proposed questions to each Design-Build Firm as it relates to their Technical Proposal approximately 1 (one) week before the written Q & A letter is due.

The Design-Build Firm shall submit to the Department a written letter answering the questions provided by the Department. The questions and written answers/clarifications will become part of the Contract Documents and will be considered by the Department as part of the Technical Proposal. In the event the Design-Build Firm includes additional information in the written response which was not discussed as part of the Department's questions and is otherwise not included in the Technical Proposal, such additional information will not be considered by the Department during the evaluation of the Technical Proposal.

One (1) week prior to the Price Proposal due date the Design-Build Firm shall submit to the Department a written statement as follows: "[insert name of the Design-Build Firm] confirms that, despite any provision in the Design-Build Firm's Technical Proposal or any Q&A written response letter that may be inconsistent with the other requirements of the Contract Documents, [insert name of the Design-Build Firm] intends to comply fully with the requirements otherwise provided for in the Contract Documents, except for, pursuant to Subsection 5-2 Coordination of Contract Documents of the Design-Build Division I Specifications, any [insert name of Design-Build Firm]'s statements, terms, concepts or designs that can reasonably be interpreted as offers to provide higher quality items than otherwise required by the other Contract Documents or to perform services or meet standards in addition to or better than those otherwise required which such statements, terms, concepts and designs are the obligations of [insert name of the Design-Build Firm]." In case of the failure of the Design-Build Firm to timely provide such a written statement, the Department may determine the Design-Build Firm to be deemed non-responsive.

G. Protest Rights

Any person who is adversely affected by the specifications contained in this Request for Proposal must file a notice of intent to protest in writing within seventy-two hours of the posting of this Request for Proposal. Pursuant to Sections 120.57(3) and 337.11, Florida Statutes, and Rule Chapter 28-110, F.A.C., any person adversely affected by the agency decision or intended decision shall file with the agency both a notice of protest in writing and bond within 72 hours after the posting of the notice of decision or intended decision, or posting of the solicitation with respect to a protest of the terms, conditions, and specifications contained in a solicitation and will file a formal written protest within 10 days after the filing of the notice of protest. The formal written protest shall be filed within 10 days after the date of the notice of protest if filed. The person filing the Protest must send the notice of intent and the formal written protest to:

Clerk of Agency Proceedings
Department of Transportation
605 Suwannee Street, MS 58
Tallahassee, Florida 32399-0458

Failure to file a notice of protest or formal written protest within the time prescribed in section 120.57(3), Florida Statutes, or failure to post the bond or other security required by law within the time allowed for filing a bond shall constitute a waiver of proceedings under Chapter 120 Florida Statutes.

H. Non-Responsive Proposals

Proposals found to be non-responsive shall not be considered. Proposals may be rejected if found to be in nonconformance with the requirements and instructions herein contained. A proposal may be found to be non-responsive by reasons, including, but not limited to, failure to utilize or complete prescribed forms, conditional proposals, incomplete proposals, indefinite or ambiguous proposals, failure to meet deadlines and improper and/or undated signatures.

Other conditions which may cause rejection of proposals include evidence of collusion among Proposers, obvious lack of experience or expertise to perform the required work, submission of more than one proposal for the same work from an individual, firm, joint venture, or corporation under the same or a different name (also included for Design-Build Projects are those proposals wherein the same Engineer is identified in more than one proposal), failure to perform or meet financial obligations on previous contracts, employment of unauthorized aliens in violation of Section 274A (e) of the Immigration and Nationalization Act, or in the event an individual, firm, partnership, or corporation is on the United States Department of Labor's System for Award Management (SAM) list.

The Department will not give consideration to tentative or qualified commitments in the proposals. For example, the Department will not give consideration to phrases as "we may" or "we are considering" in the evaluation process for the reason that they do not indicate a firm commitment.

Proposals will also be rejected if not delivered or received on or before the date and time specified as the due date for submission.

Any proposal submitted by a Proposer that did not sign-in at the mandatory pre-proposal meeting will be non-responsive.

I. Waiver of Irregularities

The Department may waive minor informalities or irregularities in proposals received where such is merely a matter of form and not substance, and the correction or waiver of which is not prejudicial to other Proposers. Minor irregularities are defined as those that will not have an adverse effect on the Department's interest and will not affect the price of the Proposals by giving a Proposer an advantage or benefit not enjoyed by other Proposers.

1. Any design submittals that are part of a proposal shall be deemed preliminary only.
2. Preliminary design submittals may vary from the requirements of the Design and Construction Criteria. The Department, at their discretion, may elect to consider those variations in awarding points to the proposal rather than rejecting the entire proposal.
3. In no event will any such elections by the Department be deemed to be a waiving of the Design and Construction Criteria.

4. The Proposer who is selected for the Project will be required to fully comply with the Design and Construction Criteria for the price bid, regardless that the proposal may have been based on a variation from the Design and Construction Criteria.
5. Proposers shall identify separately all innovative aspects as such in the Technical Proposal. An innovative aspect does not include revisions to specifications or established Department policies. Innovation should be limited to Design-Build Firm's means and methods, roadway alignments, approach to Project, use of new products, new uses for established products, etc.
6. The Proposer shall obtain any necessary permits or permit modifications not already provided.
7. Those changes to the Design Concept may be considered together with innovative construction techniques, as well as other areas, as the basis for grading the Technical Proposals in the area of innovative measures.

J. Modification or Withdrawal of Technical Proposal

Proposers may modify or withdraw previously submitted Technical Proposals at any time prior to the Technical Proposal due date. Requests for modification or withdrawal of a submitted Technical Proposal shall be in writing and shall be signed in the same manner as the Technical Proposal. Upon receipt and acceptance of such a request, the entire Technical Proposal will be returned to the Proposer and not considered unless resubmitted by the due date and time. Proposers may also send a change in sealed envelope to be opened at the same time as the Technical Proposal provided the change is submitted prior to the Technical Proposal due date.

K. Department's Responsibilities

This Request for Proposal does not commit the Department to make studies or designs for the preparation of any proposal, nor to procure or contract for any articles or services.

The Department does not guarantee the details pertaining to borings, as shown on any documents supplied by the Department, to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated.

L. Design-Build Contract

The Department will enter into a Lump Sum contract with the successful Design-Build Firm. In accordance with Section V, the Design-Build Firm will provide a schedule of values to the Department for their approval. The total of the Schedule of Values will be the lump sum contract amount.

The terms and conditions of this contract are fixed price and fixed time. The Design-Build Firm's submitted bid (time and cost) is to be a lump sum bid for completing the scope of work detailed in the Request for Proposal.

IV. Disadvantaged Business Enterprise (DBE) Program.

A. DBE Availability Goal Percentage:

The Department of Transportation has an overall, race-neutral DBE goal. This means that the State's goal is to spend a portion of the highway dollars with Certified DBE's as prime Design-Build Firms or as subcontractors. Race-neutral means that the Department believes that the overall goal can be achieved through the normal competitive procurement process. The Department has reviewed this Project and assigned a DBE availability goal shown in the Project Advertisement and on the bid blank/contract front page under "% DBE Availability Goal". The Department has determined that this DBE percentage can be achieved on this Project based on the number of DBE's associated with the different types of work that will be required.

Under 49 Code of Federal Regulations Part 26, if the overall goal is not achieved, the Department may be required to return to a race-conscious program where goals are imposed on individual contracts. The Department encourages Design-Build Firms to actively pursue obtaining bids and quotes from Certified DBE's.

The Department is reporting to the Federal Highway Administration the planned commitments to use DBE's, as well as actual dollars paid to DBE's. This information is being collected through the Department's Equal Opportunity Compliance (EOC) system. Additional requirements of the Design-Build Firm may be found in Chapter 2 of the FDOT Equal Opportunity Construction Contract Compliance Manual.

B. DBE Supportive Services Providers:

The Department has contracted with consultants, one is referred to as DBE Supportive Services provider (DBE/SS), to provide managerial and technical assistance to DBE's. This consultant works with potential DBEs, certified DBEs and prime contractors and consultants in an effort to increase DBE utilization. The other consultant is referred to as the Specialized Development Program provider (SDP). This consultant works with short-listed Design Build firms prior to award, on projects over \$50 million dollars in an effort to identify DBE's with capacity to perform on the Project. The successful Design-Build Firm should meet with the DBE DBE/SS or SDP to discuss the DBE's that are available to work on this Project. The current Providers for the State of Florida can be found on the Equal Opportunity website at: <http://www.fdot.gov/equalopportunity/serviceproviders.shtm>

C. Bidders Opportunity List:

The Federal DBE Program requires States to maintain a database of all Firms that are participating, or attempting to participate, on DOT-assisted contracts. The list must include all Firms that bid on prime contracts or bid or quote subcontracts on DOT-assisted Projects, including both DBEs and Non-DBEs.

All Contractors must enter their bid opportunity information in the Equal Opportunity Compliance (EOC) system within three business days of submission of the bid or proposal. The link to the EOC system is located in Chapter 1 Section 1.4, Directory of Compliance Websites & Addresses. Failure of bidders to enter Bid Opportunity List information is a violation of 49 C.F.R. 26.11 and grounds for compliance actions up to and including withholding of progress payments. Note: All registered primes submitting a bid will need to apply for EOC User ID and Password to gain access to the EOC system.

V. Project Requirements and Provisions for Work.

A. Governing Regulations:

The services performed by the Design-Build Firm shall be in compliance with all applicable Manuals and Guidelines including the Department, FHWA, AASHTO, and additional requirements specified in this

document. Except to the extent inconsistent with the specific provisions in this document, the current edition, including updates, of the following Manuals and Guidelines shall be used in the performance of this work. Current edition is defined as the edition in place and adopted by the Department at the date of advertisement of this contract with the exception of the Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications, Manual on Uniform Traffic Control Devices (MUTCD), and FDOT Standard Plans with applicable Interim Revisions. The Design-Build Firm shall use the edition of the Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications, FDOT Standard Plans and applicable Interim Revisions in effect at the time the bid price proposals are due in the District Office. The Design-Build Firm shall use the 2009 edition of the MUTCD (as amended in 2012). It shall be the Design-Build Firm's responsibility to acquire and utilize the necessary manuals and guidelines that apply to the work required to complete this Project. The services will include preparation of all documents necessary to complete the Project as described in Section I of this document.

1. Florida Department of Transportation Design Manual (FDM)
<http://www.fdot.gov/roadway/FDM/>
Note: the use of FDM Part 9 requires approval by the District Design Engineer
2. Florida Department of Transportation Specifications Package Preparation Procedure
<http://www.fdot.gov/programmanagement/PackagePreparation/Handbooks/630-010-005.pdf>
3. Florida Department of Transportation Standard Plans for Road and Bridge Construction
<http://www.fdot.gov/design/standardplans/>
4. Standard Plans Instructions (Refer to Part I, Chapter 115, FDM)
<http://www.fdot.gov/roadway/FDM/>
5. Florida Department of Transportation Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications
<https://www.fdot.gov/programmanagement/Implemented/SpecBooks/default.shtm>
6. Florida Department of Transportation Surveying Procedure 550-030-101
<http://fdotwp1.dot.state.fl.us/ProceduresInformationManagementSystemInternet/FormsAndProcedures/ViewDocument?topicNum=550-030-101>
7. Florida Department of Transportation EFB User Handbook (Electronic Field Book)
http://www.fdot.gov/geospatial/doc_pubs.shtm
8. Florida Department of Transportation Drainage Manual
<http://www.fdot.gov/roadway/Drainage/ManualsandHandbooks.shtm>
9. Florida Department of Transportation Soils and Foundations Handbook
<http://www.fdot.gov/structures/Manuals/SFH.pdf>
10. Florida Department of Transportation Structures Manual
<http://www.fdot.gov/structures/DocsandPubs.shtm>
11. Florida Department of Transportation Computer Aided Design and Drafting (CADD) Manual
<http://www.fdot.gov/cadd/downloads/publications/CADDManual/default.shtm>
12. AASHTO – A Policy on Geometric Design of Highways and Streets
https://bookstore.transportation.org/collection_detail.aspx?ID=110

13. MUTCD - 2009
<http://mutcd.fhwa.dot.gov/>
14. Safe Mobility for Life Program Policy Statement
<http://www.fdot.gov/traffic/TrafficServices/PDFs/000-750-001.pdf>
15. Traffic Engineering and Operations Safe Mobility for Life Program
<http://www.fdot.gov/traffic/TrafficServices/SafetyisGolden.shtm>
16. Florida Department of Transportation American with Disabilities Act (ADA) Compliance – Facilities Access for Persons with Disabilities Procedure 625-020-015
<https://fdotwp1.dot.state.fl.us/ProceduresInformationManagementSystemInternet/?viewBy=0&procType=pr>
17. Florida Department of Transportation Florida Sampling and Testing Methods
<http://www.fdot.gov/materials/administration/resources/library/publications/fstm/disclaimer.shtm>
18. Florida Department of Transportation Flexible Pavement Coring and Evaluation Procedure
<http://www.fdot.gov/materials/administration/resources/library/publications/materialsmanual/documents/v1-section32-clean.pdf>
19. Florida Department of Transportation Design Bulletins and Update Memos
<http://www.fdot.gov/roadway/Bulletin/Default.shtm>
20. Florida Department of Transportation Utility Accommodation Manual
https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/programmanagement/utilities/docs/uam/uam2017.pdf?sfvrsn=d97fd3dd_0
21. AASHTO LRFD Bridge Design Specifications
https://bookstore.transportation.org/category_item.aspx?id=BR
22. Florida Department of Transportation Flexible Pavement Design Manual
<http://www.fdot.gov/roadway/PM/publicationS.shtm>
23. Florida Department of Transportation Rigid Pavement Design Manual
<http://www.fdot.gov/roadway/PM/publicationS.shtm>
24. Florida Department of Transportation Pavement Type Selection Manual
<http://www.fdot.gov/roadway/PM/publicationS.shtm>
25. Florida Department of Transportation Right of Way Manual
<http://www.fdot.gov/rightofway/Documents.shtm>
26. Florida Department of Transportation Traffic Engineering Manual
<http://www.fdot.gov/traffic/TrafficServices/Studies/TEM/tem.shtm>
27. Florida Department of Transportation Intelligent Transportation System Guide Book
http://www.fdot.gov/traffic/Doc_Library/Doc_Library.shtm
28. Federal Highway Administration Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications
<http://www.fhwa.dot.gov/engineering/geotech/pubs/reviewguide/checklist.cfm>
29. AASHTO Guide for the Development of Bicycle Facilities
https://bookstore.transportation.org/collection_detail.aspx?ID=116

30. Federal Highway Administration Hydraulic Engineering Circular Number 18 (HEC 18).
http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=17
31. Florida Department of Transportation Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways
<http://www.fdot.gov/roadway/FloridaGreenbook/FGB.shtm>
32. Florida Department of Transportation Project Development and Environment Manual, Parts 1 and 2
<http://www.fdot.gov/environment/pubs/pdeman/pdeman1.shtm>
33. Florida Department of Transportation Driveway Information Guide
<http://www.fdot.gov/planning/systems/programs/sm/accman/pdfs/driveway2008.pdf>
34. AASHTO Highway Safety Manual
<http://www.highwaysafetymanual.org/>
35. Florida Statutes
<http://www.leg.state.fl.us/Statutes/index.cfm?Mode=View%20Statutes&SubMenu=1&Tab=statutes&CFID=14677574&CFTOKEN=80981948>
36. Florida Department of Transportation Equal Opportunity Construction Contract Compliance Manual
<http://www.fdot.gov/equalopportunity/contractcomplianceworkbook.shtm>
37. **Florida Department of Transportation Traffic Engineering and Operations Bulletins & Memos**
<https://www.fdot.gov/traffic/trafficops-bulletins.shtm>
38. **Florida Department of Transportation Construction Bulletins**
<https://www.fdot.gov/construction/memos/bulletins/bulletins.shtm>

B. Innovative Aspects:

All innovative aspects shall be identified separately as such in the Technical Proposal.

An innovative aspect does not include revisions to specifications, standards or established Department policies. Innovation should be limited to Design-Build Firm's means and methods, roadway alignments, approach to Project, etc.

1. Alternative Technical Concept (ATC) Proposals

The Department has chosen to incorporate in the Design-Build method of project delivery the process whereby Design-Build Firms may propose innovative technical solutions for the Department's approval which meet or exceed the goals of the project. The process involves the submission of an Alternative Technical Concept (ATC) as outlined below. This process has shown to be very cost effective in providing the best-value solution which often times is a result of the collaborative approach of the contractor and their designer which is made possible with the Design Build project delivery method and the ATC process.

The ATC process allows innovation, flexibility, time and cost savings on the design and construction of Design-Build Projects while providing the best value for the public. Any deviation from the RFP that the Design-Build Firm seeks to obtain approval to utilize prior to Technical Proposal submission is, by definition, an ATC and therefore must be discussed and submitted to the Department for consideration through the ATC process. ATCs also include items defined in FDM, Part 1, Chapter 121.3.2. The proposed ATC shall provide an approach that is equal to or better than the requirements of the RFP, as determined by the Department. ATC Proposals which reduce scope, quality, performance, or reliability should not be proposed. A proposed concept does not meet the definition of an ATC if the concept is contemplated by the RFP.

The following are not permitted to be changed by the Design-Build Firms except where specifically allowed for in the RFP. The list below is not all-inclusive. ATC's not listed below may be rejected by the Department.

- Items that require Design Exceptions as defined in FDM 122
- Submittal and review duration requirements of RFP Sections V.I. and V.K.
- Requirements of the FDOT Structures Manual
- Project specific post-tensioning (PT) system approvals. PT systems must comply with the Specifications and be listed on the FDOT Approved Post-Tensioning System List
- **Shallow foundations in areas that are prone to sinkhole development. ~~Shallow foundations will not be allowed on bridges. Bridges in areas of the State that are known for being high-recharge zones (groundwater is feeding the aquifer), or that have historically developed sinkholes at a frequent rate, will not be considered for shallow foundation design.~~**
- Deck girders with longitudinal deck joints for bridges with two or more spans;
- Pier mounted fender systems
- Struts between Eastbound and Westbound SR 30 footings
- Modification of past point vessel group traffic data
- Full-depth precast deck panels

Note: ATC proposals for full-depth precast deck panels may be considered, but must include detailed connection details, step-by-step construction sequences, grout/UHPC material requirements, connection mock-up requirements including mock-up acceptance criteria.

- Partial-depth precast deck panels;
- Reinforcing steels other than allowed by SDG 1.4.1.B except in drilled shafts and auger-cast piles. This is not intended to include non-corrosive materials that are allowed for by the RFP.
- Elimination of deck grooving;
- Replacing transverse bridge deck grooving with longitudinal bridge deck grooving;
- Elimination of deck planing;
- The elimination of cross frames in bays of steel bridges that are phase constructed;
- Non-framed, non-integral straddle pier caps that are not permanently anchored or stabilized on one end (e.g. pinned bolsters, sole plate and anchor bolts, pot or disc bearings etc.).
- Full height MSE Wall panels (piano walls).
- Auger-Cast piles for bridges

Changes resulting in the need for additional Right-of-Way from Eglin will not be considered.

The Department will keep all ATC submissions confidential prior to the Final Selection of the Proposer to the fullest extent allowed by law, with few exceptions. Although the Department will issue an addendum for all ATC Proposals contained in the list below, the Department will endeavor to maintain confidentiality of the Design-Build Firms specific ATC proposal. Prior to approving ATC's which would result in the

issuance of an Addendum as a result of the item being listed below, the Design-Build Firm will be given the option to withdraw previously submitted ATC proposals. Any approved ATC Proposal related to following requirements described by this RFP shall result in the issuance of an Addendum to the RFP:

- Horizontal or vertical clearance of structure at channel
- Design speeds
- Lane, shoulder, and shared use widths
- Pavement Design
- Department's Aesthetic Requirements
- Utility avoidance requirements at fender system
- New Design Exceptions required or modifications to Department approved Design Exceptions already provided in the Attachments.
- Significant changes in scope as determined by the Department.

The following requirements described by this RFP may be modified by the Design-Build Firm provided they are presented in the One-on-One ATC discussion meeting, as defined below, and submitted to the Department for review and approval through the ATC process described herein. The Department may deem a Proposal Non-Responsive should the Design-Build Firm include but fail to present and obtain Department approval of the proposed alternates through the ATC process. Department approval of an ATC proposal that is related to the items listed below will NOT result in the issuance of an Addendum to the RFP.

- RFP requirement other than the items in the previous paragraph's bulleted list.

2. One-on-One ATC Proposal Discussion Meetings

One-on-One ATC discussion meetings may be held in order for the Design-Build Firm to describe proposed changes to supplied basic configurations, Project scope, design criteria, and/or construction criteria. Each Design-Build Firm with proposed changes may request a One-on-One ATC discussion meeting to describe the proposed changes. The Design-Build Firm shall provide, by the deadline shown in the Schedule of Events of this RFP, a preliminary list of ATC proposals to be reviewed and discussed during the One-on-One ATC discussion meetings. This list may not be inclusive of all ATC's to be discussed but it should be sufficiently comprehensive to allow the Department to identify appropriate personnel to participate in the One-on-One ATC discussion meetings.

The purpose of the One-on-One ATC discussion meeting is to discuss the ATC proposals, answer questions that the Department may have related to the ATC proposal, review other relevant information and when possible establish whether the proposal meets the definition of an ATC thereby requiring the submittal of a formal ATC submittal. The meeting should be between representatives of the Design-Build Firm and/or the Design-Build Engineer of Record and District/Central Office staff as needed to provide feedback on the ATC proposal. FHWA should be invited to ATC meetings for all PoDI projects. Immediately prior to the conclusion of the One-on-One ATC discussion meeting, the Department will advise the Design-Build Firm as to the following related to the ATC proposals which were discussed:

- The Proposal meets the criteria established herein as a qualifying ATC Proposal; therefore, an ATC Proposal submission IS required, or
- The Proposal does not meet the criteria established herein as a qualifying ATC proposal since the Proposal is already allowed or contemplated by the original RFP; therefore, an ATC Proposal submission is NOT required.

The Department will return all handouts back to the Design-Build Firm except one copy to remain in the secure procurement file.

3. Submittal of ATC Proposals

All ATC submittals must be in writing and may be submitted at any time following the Shortlist Posting but shall be discussed and submitted prior to the deadline shown in the Schedule of Events of this RFP.

All ATC submittals are required to be on plan sheets, on roll plots no wider than 36", or on 8.5" x 11" sheets and shall be sequentially numbered and include the following information and discussions:

- a) **Description:** A description and conceptual drawings of the configuration of the ATC or other appropriate descriptive information, including, if appropriate, product details and a traffic operational analysis as applicable;
- b) **Usage:** The locations where and an explanation of how the ATC would be used on the Project.
- c) **Deviations:** References to requirements of the RFP which are inconsistent with the proposed ATC, an explanation of the nature of the deviations from the requirements and a request for approval of such deviations along with suggested changes to the requirements of the RFP which would allow the alternative proposal.
- d) **Analysis:** An analysis justifying use of the ATC and why the deviation, if any, from the requirements of the RFP should be allowed.
- e) **Impacts:** A preliminary analysis of potential impacts on vehicular traffic (during construction), environmental impacts, community impacts, safety, and life-cycle Project and infrastructure costs, including impacts on the cost of repair, maintenance, and operation.
- f) **Risks:** A description of added risks to the Department or third parties associated with implementation of the ATC.
- g) **Quality:** A description of how the ATC is equal or better in quality and performance than the requirements of the RFP including the traffic operational analysis if requested by the Department.
- h) **Operations:** Any changes in operation requirements associated with the ATC, including ease of operations.
- i) **Maintenance:** Any changes in maintenance requirements associated with the ATC, including ease of maintenance.
- j) **Anticipated Life:** Any changes in the anticipated life of the item comprising the ATC.

4. Review and Approval of ATC Submittals

After receipt of the ATC submittal, the District Design Engineer (DDE), or designee, will communicate with the appropriate staff (i.e. District Structures Design Engineer, District Construction Engineer, District Maintenance Engineer, State Structures Design Engineer, State Roadway Design Engineer, FHWA, as applicable) as necessary, and respond to the Design-Build Firm in writing within 14 calendar days of receipt

of the ATC submittal as to whether the ATC is acceptable, not acceptable, or requires additional information. If the DDE, or designee, determines that more information is required for the review of an ATC, questions should be prepared by the DDE, or designee, to request and receive responses from the Design-Build Firm. The review should be completed within 14 calendar days of the receipt of the ATC submittal. If the review will require additional time, the Design-Build Firm should be notified in advance of the 14 day deadline with an estimated timeframe for completion.

Approved Design Exceptions required as part of an approved ATC submittal will result in the issuance of an addendum to the RFP notifying all Shortlisted Design-Build Firms of the approved Design Exception(s). Such a change will be approved by FHWA, as applicable. Prior to approving ATC's which would result in the issuance of an Addendum as a result of a Design Exception, the Design-Build Firm will be given the option to withdraw previously submitted ATC Proposals.

The Department reserves the right to disclose to all Design-Build Firms, via an Addendum to the RFP, any errors of the RFP that are identified during the One-on-One ATC meetings, except to the extent that the Department determines, in its sole discretion, such disclosure would reveal confidential or proprietary information of the ATC.

Through the ATC process, the Design-Build Firm may submit, and the Department may consider, geometric modifications to the Concept Plans or other contract requirements that will provide an engineering solution that is better overall in terms of traffic flow and reduced congestion. The approval of ATCs related to improvements of traffic flow and reduced congestion is at the sole discretion of the Department. It is the Design-Build Firm's responsibility to clearly establish in the ATC process how the engineering solution provides a benefit to the Department and identify areas of conflict outlined in the RFP.

ATC's are accepted by the Department at the Department's discretion and the Department reserves the right to reject any ATC submitted. The Department reserves the right to issue an Addendum to the RFP based upon a previously denied ATC Proposal, without regard to the confidentiality of the denied ATC Proposal. All Department approvals of ATC submissions are based upon the known impacts on the Project at the time of submission. The Department reserves the right to require a modification or amendment to a previously approved ATC as a result of a contract change which is issued by an addendum subsequent to the Department's initial approval of the ATC.

5. Incorporation of Approved ATC's into the Technical Proposal

The Design-Build Firm will have the option to include any Department Approved ATC's in the Technical Proposal. The Proposal Price should reflect any incorporated ATC's. All approved ATC's that are incorporated into the Technical Proposal must be clearly identified in the Technical Proposal Plans and/or Roll Plots. The Technical Proposal shall also include a listing of the incorporated, approved ATCs.

By submitting a Proposal, the Design-Build Firm agrees, if it is not selected, to disclosure of its work product to the successful Design-Build Firm, only after receipt of the designated stipend (if applicable) or after award of the contract whichever occurs first.

C. Geotechnical Services:

1. General Conditions:

The Design-Build Firm shall be responsible for identifying and performing any geotechnical investigation, analysis and design of foundations, foundation construction, foundation load and integrity testing, and inspection dictated by the Project needs in accordance with Department guidelines, procedures and

specifications. All geotechnical work necessary shall be performed in accordance with the Governing Regulations. The Design-Build Firm shall be solely responsible for all geotechnical aspects of the Project.

D. Department Commitments:

The Design-Build Firm will be responsible for adhering to the project commitments identified below:

1. Any right-of-way commitments, agreements and stipulated final judgements provided as an Attachment to the RFP.
2. Environmental Commitments from the EA with FONSI and Reevaluation as described in Section VI.O. ~~of~~ of this RFP.

E. Environmental Permits:

1. Storm Water and Surface Water:

Plans shall be prepared in accordance with Chapters 373 and 403 (F.S.) and Chapters 40 and 62 (F.A.C.).

2. Permits:

The Department will submit FDEP ERP and FDEP State 404 Permit applications based on the concept plans. The Design-Build Firm will be responsible for submitting and obtaining the USCG Bridge Permit and completing, modifying and obtaining the FDEP ERP and FDEP State 404 Permits based on the final design plans.

The Design-Build Firm shall be responsible for obtaining all permits as necessary to complete the project. The Design-Build Firm shall be responsible for any necessary permit time extensions or re-permitting in order to keep the environmental permits valid throughout the construction period. The Design-Build Firm shall provide the Department with draft copies of any and all permit applications, including responses to agency Requests for Additional Information, requests to modify the permits and/or requests for permit time extensions, for review and approval by the Department prior to submittal to the agencies. The Department will have up to 15 calendar days (excluding weekends and Department observed holidays) to review and comment on the draft permit application package, including modified permit applications. The Design-Build Firm will address all comments by the Department and obtain Department approval, prior to submittal of the draft permit application package. The Design-Build Firm shall be solely responsible for all time and costs associated with providing the required information to the Department, as well as the time required by the Department to perform its review of the permit application package, prior to submittal of the permit application(s) by the Design-Build Firm to the regulatory agency(ies). The Design-Build Firm shall be solely responsible for all cost associated with permitting activities and shall include all necessary permitting activities in their schedule.

All applicable data shall be prepared in accordance with Chapter 373 and 403, Florida Statutes, Chapters 40 and 62, F.A.C.; Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, 23 CFR 771, 23 CFR 636, and parts 114 and 115, Title 33, Code of Federal Regulations. Preparation of all documentation related to the acquisition of all applicable permits will be the responsibility of the Design-Build Firm. Preparation of complete permit packages will be the responsibility of the Design-Build Firm. The Design-Build Firm is responsible for the accuracy of all information included in permit application packages. As the permittee, the Department is responsible for reviewing, approving, and signing, the permit application package including all permit modifications, or subsequent permit applications. This applies whether the

Project is Federal or state funded. Once the Department has approved the permit applications, the Design-Build Firm is responsible for submitting the permit applications to the environmental permitting agencies. A copy (electronic and hard copy) of any and all correspondence with any of the environmental permitting agencies shall be sent to the District Environmental Permits Office. If any agency rejects or denies the permit applications, it is the Design-Build Firm's responsibility to make whatever changes necessary to ensure the permit applications are approved. The Design-Build Firm shall be responsible for any necessary permit extensions or re-permitting in order to keep the environmental permits valid throughout the construction period. The Design-Build Firm shall provide the Department with draft copies of any and all permit applications, including responses to agency Requests for Additional Information, requests to modify the permits and/or requests for permit extensions, for review and approval by the Department prior to submittal to the agencies.

The Design-Build Firm will be required to pay all permit and public notice fees. Any fines levied by permitting agencies shall be the responsibility of the Design-Build Firm. The Design-Build Firm shall be responsible for complying with all permit conditions.

The Department is responsible for providing mitigation of all wetland impacts required for the conceptual design as shown in the Concept Plans. If any design modifications by the Design-Build Firm propose to increase the amount of wetland impacts such that additional mitigation is required, the Design-Build Firm shall be responsible for providing the Department information on the amount and type of wetland impacts as soon as the impacts are identified (including temporary impacts and/or any anticipated impacts due to construction staging or construction methods).

Any cost associated with additional mitigation required due to design modifications proposed by the Design-Build Firm shall be the responsibility of the Design-Build Firm. The Department anticipates satisfying mitigation requirements as depicted in the Concept Plans via an In-Lieu Fee Mitigation Project. Additional mitigation required due to a design modification proposed by the Design-Build Firm shall be coordinated with the Department as soon as possible for possible modification to the In-Lieu Fee Mitigation Project. In the event that modifying the Mitigation Plan is not viable, The Design-Build Firm will be responsible for providing the additional mitigation consistent with the provisions of section 373.4137, Florida Statutes, and acceptable to the permitting agency(ies).

However, notwithstanding anything above to the contrary, upon the Design-Build Firm's preliminary request for extension of Contract Time, pursuant to 8-7.3, being made directly to the District Construction Engineer, the Department reserves unto the District Construction Engineer, in their sole and absolute discretion, according to the parameters set forth below, the authority to make a determination to grant a non-compensable time extension for any impacts beyond the reasonable control of the Design-Build Firm in securing permits. Furthermore, as to any such impact, no modification provision will be considered by the District Construction Engineer unless the Design-Build Firm clearly establishes that it has continuously from the beginning of the Project aggressively, efficiently and effectively pursued the securing of the permits including the utilization of any and all reasonably available means and methods to overcome all impacts. There shall be no right of any kind on behalf of the Design-Build Firm to challenge or otherwise seek review or appeal in any forum of any determination made by the District Construction Engineer under this provision.

F. Railroad Coordination: N/A

G. Survey:

The Design-Build Firm shall perform all surveying (Terrestrial, Mobile and/or Aerial) and mapping services necessary to complete the Project. Survey services must also comply with all pertinent Florida Statutes (Chapters 177 and 472, F.S.) and applicable rules in the Florida Administrative Code (Rule Chapter 5J-17, F.A.C.). All field survey data will be furnished to the District Surveyor in a Department approved digital format, readily available for input and use in CADD Design files. All surveying and mapping work must be accomplished in accordance with the Department's Surveying and Mapping Procedure, Topic Nos. 550-030-101, and the Surveying and Mapping Handbook.

H. Verification of Existing Conditions:

The Design-Build Firm shall be responsible for verification of existing conditions, including research of all existing Department records and other information.

By execution of the contract, the Design-Build Firm specifically acknowledges and agrees that the Design-Build Firm is contracting and being compensated for performing adequate investigations of existing site conditions sufficient to support the design developed by the Design-Build Firm and that any information is being provided merely to assist the Design-Build Firm in completing adequate site investigations. Notwithstanding any other provision in the contract documents to the contrary, no additional compensation will be paid in the event of any inaccuracies in the preliminary information.

I. Submittals:

The Department will perform an Independent Department Review (IDR) of all Category 2 bridge structures. The Design Build Firm shall submit 60% structures plans for the Department to begin developing the modeling for the design review. The 60% Structures Plans shall contain sufficient information for each structure to begin developing the model for the Category 2 element(s) under consideration. For Category 2 bridges, each structure submission (60%, 90%, Final) can be broken down into "units" (defined as a stand-alone set of **combined** foundation, substructure and superstructure sheets based on the ultimate structural condition if phased construction is proposed) with each unit containing sufficient information to develop the models for the Category 2 element under consideration. The 60% Structures Plans submittal is not intended to be an ERC design review by the Department and formal review comments will not be provided at this stage. Lack of formal review comments at this stage should not be construed as acceptance or approval. When 90% plans are submitted, the Department's reviewer will verify that the information contained in the 90% plans is consistent with the models that were developed based upon 60% plans and the model will be updated, as required, and the actual design review performed. The results of the review will be forwarded to the Design Build Firm for review and response. The Department will resolve all conflicts arising between the Design Build Firm and Department's IDR reviewer during the Independent Department Review process. The Department's disposition of any such conflicts will be final.

1. Component Submittals:

The Design-Build Firm may submit components of the contract plans set instead of submitting the entire contract plan set; however, sufficient information from other components must be provided to allow for a complete review. In accordance with the FDOT Design Manual, components of the contract plans set are roadway, signing and pavement marking, signalization, ITS, lighting, landscape, architectural, structural, and toll facilities. The Department will designate in the review comments if the next submittal will be a

resubmittal of the 90% phase submittal or if the plans and supporting calculations are significantly developed to proceed to the Final Submittal.

The Design-Build Firm may divide the Project into separate areas and submit components for each area; however, sufficient information on adjoining areas must be provided to allow for a complete review. Submittals for Category 1 bridges are limited to foundation, substructure, and superstructure. For Category 2 structures, submittals for bridges are limited to "units" as previously described, or a complete bridge submittal.

For projects involving Category 2 structures, the Design-Build Firm shall submit a Category 2 Submittal Report summarizing the Category 2 elements included in the project as part of the Technical Proposal. Within fifteen (15) calendar days following Notice to Proceed, submit a prioritized preliminary submittal schedule for the plans including Category 2 structure elements. This submittal shall take place prior to the Independent Design Review Kickoff Meeting.

Category 1 and 2 bridge submittals shall contain the following:

- Plan sheets for the submittal under review developed to the specified level of detail (i.e. 90% plans, Final plans, etc.) as outlined in the FDM. Note for the 60% submittal on Category 2 Structures, provide the relevant sheets in accordance with the "60% Structures Plans" column of FDM Table 121.14.1. For the 90% and Final Submittals on Category 2 Structures, combine the required sheets for Foundation, Substructure, and Superstructure listed in FDM Table 121.14.3 to form the "unit" submittal.
- A complete set of the most developed plan sheets for all other major elements of the bridge. These sheets shall be marked "For Information Only" on the index sheet. In no case shall a plan sheet be less than 30% complete.
- Design documentation including a complete set of calculations, geotechnical reports, pertinent correspondence, etc. in support of the 90% and final component submittals.

2. Phase Submittals:

The Design-Build Firm shall provide the documents for each phase submittal listed below to the Department's Project Manager. The particular phase shall be clearly indicated on the documents. The Department's Project Manager will send the documents to the appropriate office for review and comment. Once all comments requiring a response from the Design-Build Firm have been satisfactorily resolved as determined by the Department, the Department's Project Manager will initial, date and stamp the signed and sealed plans and specifications as "Released for Construction".

All comments shall be resolved to the Department's satisfaction prior to making the next phase submittal. The Department will designate in the review comments if the next submittal will be a resubmittal of the 90% phase submittal or if the plans and supporting calculations are significantly developed to proceed to the Final Submittal.

The Design-Build Firm shall coordinate with the Department's Project Manager to allow for a 90% Phase Submittal to the local government. Each comment or request by the local government shall be evaluated by the Design-Build Firm and discussed with the Department's Project Manager. Responses will be prepared by the Design-Build Firm for District Consultant Project Management Engineer signature. All

comments or requests shall be responded to in writing within 30 days of receipt of comment.

60% Phase Submittal (Required for Category 2 structures)

1 copy of 11" x 17" Structures plans meeting the requirements of FDM Tables 121.14.1 and 121.14.2 for 60% Structures Plans
1 copy of draft geotechnical report
1 copy of draft Bridge Hydraulic Report
1 copy of design documentation (calculations not required)
1 copy of draft Technical Special Provisions
1 copy of Roadway Project Layout and TTCP plans
Any other information required for the Department to perform an Independent Department Review as discussed in the Independent Design Review Kickoff Meeting

90% Phase Submittal

1 copy of 11" X 17" plans (all required components)
1 copy of signed and sealed geotechnical report
1 copy of Settlement and Vibration Monitoring Plan (SVMP) for Department acceptance and update throughout the construction period
1 copy of signed and sealed Bridge Hydraulic Report
1 copy of design documentation
1 copy of Technical Special Provisions
1 copy of Landscape Opportunity Plans
1 copy of Bridge Load Rating Calculations
1 copy of Completed Bridge Load Rating Summary Detail Sheet
1 copy of Load Rating Summary Form
1 copy of all design changes introduced since the 60% plan submittal that affect the modeling or component design of various bridge components
1 copy of Concept of Operations (ITS)
1 copy of Maintenance of communication (MOC) plans
1 copy of Project System Engineering Management Plan (ITS)
1 copy of Requirement Traceability Verification Matrix (ITS)
1 copy existing Signalization and Intelligent Transportation System equipment report
1 copy of power design analysis report (PDAR)
1 copy of Utility Conflict Matrix

All QC plans and documentation for each component submittal shall be electronic in .pdf format

The Department will designate in the review comments if the next submittal will be a resubmittal of the 90% phase submittal or if the plans and supporting calculations are significantly developed to proceed to the Final Submittal. If the Department requires more than 2 resubmittals a submittal workshop between the Department and the Design-Build Firm must be held to resolve any outstanding issues or comments.

Final Submittal

1 set of signed and sealed 11" X 17" plans (all required documents)
1 copy of signed and sealed 11" X 17" plans

- 1 set of signed and sealed design documentation
- 1 copy of signed and sealed design documentation
- 1 copy of Settlement and Vibration Monitoring Plan (SVMP)
- 1 copy of Landscape Opportunity Plans
- 1 set of final documentation
- 1 signed and sealed copy of the Bridge Load Rating Summary Detail Sheet
- 1 signed and sealed copy of the Load Rating Summary Form
- 1 signed and sealed Construction Specifications Package or Supplemental Specifications Package
- 1 copy of signed and sealed copy of Construction Specifications Package or Supplemental Specifications Package
- 1 of electronic copy of Technical Special Provisions in .pdf format
- 1 copy of all major design changes introduced since the 90% plan submittal that affect the modeling or component design of various bridge components
- 1 copy of all the Independent Department Review comments and the EOR's response
- 1 copy of Concept of Operations (ITS)
- 1 copy of Maintenance of Communication (MOC) plans
- 1 copy of Project System Engineering Management Plan (ITS)
- 1 copy of Requirement Traceability Verification Matrix (ITS)
- 1 copy existing Signalization and Intelligent Transportation System equipment report
- 1 copy Power Design Analysis Report (PDAR)

All of the information above shall be submitted electronically in .pdf format.

All QC plans and documentation for each component submittal shall be electronic in .pdf format

The Design-Build Firm shall provide a list of all changes made to the plans or specifications that were not directly related to the 90% plans review comments. Significant changes (as determined by the Department) made as a part of the Final submittal, that were not reviewed or provided in response to the 90% submittal comments, may require an additional review phase prior to stamping the plans or specifications "Released for Construction." The Design-Build Firm shall provide a signed certification that all Electronic Review Comments (ERC) and/or ProjectSolve comments have been resolved to the Department's satisfaction as a requirement before obtaining "Released for Construction" plans.

3. Requirements to Begin Construction:

The Department's indication that the signed and sealed plans and specifications are "Released for Construction" authorizes the Design Build Firm to proceed with construction based on the contract plans and specifications. The Department's review of submittals and subsequent Release for Construction is to assure that the Design-Build Firm's EOR has approved and signed the submittal, the submittal has been independently reviewed and is in general conformance with the contract documents. The Department's review is not meant to be a complete and detailed review. No failure by the Department in discovering details in the submittal that are released for construction and subsequently found not to be in compliance with the requirements of the contract shall constitute a basis for the Design-Build Firm's entitlement to additional monetary compensation, time, or other adjustments to the contract. The Design-Build Firm shall cause the Engineer of Record to resolve the items not in compliance with the contract, errors or omissions at no additional cost to the Department and all revisions are subject to the Department's approval.

The Design-Build Firm may choose to begin construction prior to completion of the Phase Submittals and the Department stamping the plans and specifications Released for Construction except for bridge construction. No permanent structures work, including fabrication of bridge members, may begin without signed and sealed plans or shop drawings (whichever controls the design and details utilized to construct/erect the specific structural component) that have been Released for construction. To begin construction the Design-Build Firm shall submit signed and sealed plans for the specific activity; submit a signed and sealed Construction Specifications Package or Supplemental Specifications Package; obtain regulatory permits as required for the specific activity; obtain utility agreements and permits, if applicable; and provide five (5) days notice before starting the specific activity. The plans to begin construction may be in any format including report with details, 8 1/2" X 11" sheets, or 11" X 17" sheets, and only the information needed by the Design-Build Firm to construct the specific activity needs to be shown. Beginning construction prior to the Department stamping the plans and specifications Released for Construction does not reduce or eliminate the Phase Submittal requirements. NO BRIDGE CONSTRUCTION WILL BE ALLOWED TO COMMENCE UNTIL THE U.S. COAST GUARD PERMIT IS OBTAINED. BRIDGE CONSTRUCTION IS DEFINED AS FROM BEGIN BRIDGE TO END BRIDGE.

As-Built Set:

The Design-Build Firm's Professional Engineer in responsible charge of the Project's design shall professionally endorse (sign, seal, and certify) the As-Built Plans, the special provisions and all reference and support documents. The professional endorsement shall be performed in accordance with the FDOT Design Manual.

Design-Build Firm shall complete the As-Built Plans as the Project is being constructed. All changes made subsequent to the "Released for Construction" Plans shall be signed/sealed by the EOR. The As-Built Plans shall reflect all changes initiated by the Design-Build Firm or the Department in the form of revisions. The As-Built Plans shall be submitted prior to Project completion for Department review and acceptance as a condition precedent to the Departments issuance of Final Acceptance.

The Department shall review, certify, and accept the As-Built Plans prior to issuing Final Acceptance of the project in order to complete the As-Built Plans.

The Department shall accept the As-Built Plans and related documents when in compliance with Design Build Division I Specification 7-2.3, As-Built Drawings and Certified Surveys, and the As-Built Requirements.

The Design-Build Firm shall furnish to the Department, upon Project completion, the following:

- 1 set of 11" X 17" signed and sealed As-Built plans, drawings and Certified Surveys
- 2 sets of 11 "X 17" copies of the signed and sealed As-Built plans, drawings and Certified Surveys (including as-built channel survey)
- 1 copy of Landscape Opportunity Plans
- 1 signed and sealed copy of the Bridge Load Rating Summary Form and Calculations based on as-built conditions
- 2 sets of final documentation (if different from final component submittal)
- 1 sets of survey information, including electronic files and field books
- Deliver the final CADD.zip in accordance with the CADD Manual

- 1 Final Project submittal containing the information above shall be electronic in .pdf format

4. Milestones:

Component submittals, in addition to the plan submittals listed in the previous section will be required. In addition to various submittals mentioned throughout this document the following milestone submittals will be required.

- Typical Section package
- Utility Clearance Certification
- Permit applications for Department review
- Responses to RAIs from permitting agencies for Department review
- Approved permits package
- Pavement Design
- Package, if different than the minimum pavement design included as an Attachment to the RFP
- **Re-Evaluation, if needed due to design changes**
- **Endangered Species Act (ESA) Section 7 Re-Initiation of consultation if needed due to design changes or time.**

5. Railroad Submittals: N/A

J. Contract Duration:

The Department has established a Contract Duration of 1,720 calendar days for the subject Project. **An Incentive-Disincentive is available for this project and can be found in the Design-Build Division I Specifications included in the Attachments section of the RFP. The achievable incentive is \$5,000,000 as detailed in the specification.**

K. Project Schedule:

The Design-Build Firm shall submit a Schedule, in accordance with Subarticle 8-3.2 (Design-Build Division I Specifications). The Design-Build Firm's Schedule shall allow for up to fifteen (15) calendar days (excluding weekends and Department observed Holidays) review time for the Department's review of all submittals with the exception of Category 2 structures submittals. The review of Category 2 structures submittals requires Central Office Structures Design Office involvement and **Independent Department Reviews. the schedule shall allow for up to 20 calendar days (excluding weekends and Department observed Holidays) for these reviews.** The Design-Build Firm shall allow at least the following durations:

- (30) calendar days (excluding weekends and Department observed Holidays) between the 60% phase submittal and the 90% phase submittal for any Category 2 structures Submittals to allow for the initial development of the IDR.
- (60) calendar days (excluding weekends and Department observed Holidays) between the 90% phase submittal and the Final phase submittal for any Category 2 structures Submittals for the IDR.

- (20) calendar days (excluding weekends and Department observed Holidays) for the Final phase submittal for any Category 2 structures Submittals.
- (20) calendar days (excluding weekends and Department observed Holidays) for the review of all additional Category 2 structures resubmittals. Category 2 structure resubmittals must include all required submittal documentation per Section V.I (Submittals)

IDR durations are subject to change based on the Design Build Firm's Technical Proposal submittal. Upon review of each Firm's Technical Proposal, new IDR review times may be provided to each Firm as part of the Question and Answer Written response session. The Independent Department Review of Category 2 structures will be performed concurrently, and of similar duration, with the normal Department review of submittals. Review will not begin until submittals are deemed complete by the Department.

The Department will perform the review of Foundation Construction submittals in accordance with Section 455.

The following Special Events have been identified in accordance with Specification 8-6.4:

- Billy Bowlegs Pirate Festival
- Mardi Gras on the Island
- ~~Red Cross Run~~
- Greek Festival
- ~~Downtown Fort Walton Beach Street Fest~~
- ~~Earth Day Fort Walton Beach~~
- **Spring Break**

<u>Year</u>	<u>Dates</u>
<u>2023</u>	<u>March 10-26</u>
<u>2024</u>	<u>March 08-24</u>
<u>2025</u>	<u>March 07-23</u>
<u>2026</u>	<u>March 13-29</u>
<u>2027</u>	<u>March 12-28</u>
<u>2028</u>	<u>March 10-26</u>

The minimum number of activities included in the Schedule shall be those listed in the Schedule of Values and those listed below:

- Anticipated Award Date
- Anticipated Contract Execution Date
- Anticipated Notice to Proceed Date
- Department Right-of-Way Clear Date
- Kickoff meeting with the Department's Independent Review consultant
- Design Submittals
- Completed Category 2 bridge design for Independent Department review
- Shop Drawing Submittals
- Other Contractor-Initiated Submittals including RFI's, RFM's, RFC's, and NCR's
- Design Survey
- Submittal Reviews by the Department and FHWA
- Design Review / Acceptance Milestones
- Materials Quality Tracking

- Geotechnical Investigation
- Start of Construction
- Clearing and Grubbing
- Construction Mobilization
- Embankment/Excavation
- Environmental Permit Acquisition
- Foundation Design (60%, 90%, Final,)
- Foundation Construction
- Fender System Design
- Fender System Construction
- Substructure Design (60%, 90%, Final, RFC)
- Substructure Construction
- Superstructure Design (60%, 90%, Final, RFC)
- Superstructure Construction
- Walls Design
- Walls Construction
- Roadway Design
- Roadway Construction
- Signing and Pavement Marking Design
- Signing and Pavement Marking Construction
- Signalization and Intelligent Transportation System Design
- Signalization and Intelligent Transportation System Construction
- Maintenance of Communication (MOC) Plan
- Existing Signalization and Intelligent Transportation System equipment report
- Equipment Testing and Commissioning; System Testing, Standalone
- Equipment Testing and Commissioning; System Testing, Network Communication
- Equipment Testing and Commissioning; System Testing, Central Test End-User
- Equipment Submittals (Prior to Start of Construction)
- Test Plan Submittal to FDOT
- Field Device Deployment
- System Integration (District Coordination, County Coordination, Meetings, Field Work, Acceptance)
- As-Built Plan Preparation and Submittal
- RTVM Updates Lighting Design
- Lighting Design
- Lighting Construction
- Maintenance of Traffic Design
- Landscape Opportunity Plans
- Permit Submittals
- Demolition of Existing Bridge
- Landscape/Irrigation Design (inside roundabouts only)
- Landscape/Irrigation Construction (inside roundabouts only)
- Maintenance of Traffic Set-Up (per duration)
- Erosion Control
- Holidays and Special Events (shown as non-work days)
- Additional Construction Milestones as determined by the Design-Build Firm
- Final Completion Date for All Work

L. Key Personnel/Staffing:

The Design-Build Firm's work shall be performed and directed by key personnel identified in the Letter of Interest and/or Technical Proposal by the Design-Build Firm. In the event a change in key personnel is requested, the Design-Build Firm shall submit the qualifications of the proposed key personnel and include the reason for the proposed change. Any changes in the indicated personnel shall be subject to review and approval by the District Construction Engineer. The Department shall have sole discretion in determining whether or not the proposed substitutions in key personnel are comparable to the key personnel identified in the Letter of Interest and/or Technical Proposal. The Design-Build Firm shall have available professional staff meeting the minimum training and experience set forth in Florida Statute Chapter 455.

M. Partner/Teaming Arrangement:

Partner/Teaming Arrangements of the Design-Build Firm (i.e., Prime Contractor or Lead Design Firm) cannot be changed after submittal of the Letter of Interest without written consent of the Department. In the event a change in the Partner/Teaming Arrangement is requested, the Design-Build Firm shall submit the reason for the proposed change. Any changes in the Partner/Teaming Arrangement shall be subject to review and approval by the Department's Chief Engineer. The Department shall have sole discretion in determining whether or not the proposed substitutions in Partner/Teaming Arrangements are comparable to the Partner/Teaming Arrangements identified in the Letter of Interest and/or Technical Proposal.

N. Meetings and Progress Reporting:

The Design-Build Firm shall anticipate periodic meetings with Department personnel and other agencies as required for resolution of design and/or construction issues. These meetings may include:

- Department technical issue resolution
- Local government agency coordination
- Maintenance of Traffic Workshop
- Pavement Design Meeting
- Permit agency coordination
- Scoping Meetings
- System Integration Meetings
- Drainage Pre-submittal Meetings
- Post Submittal Design Review Meetings

During design, the Design-Build Firm shall meet with the Department's Project Manager on a monthly basis at a minimum and provide a one month look ahead of the activities to be completed during the upcoming month.

During construction, the Design-Build Firm shall meet with the Department's Project Manager on a weekly basis and provide a one-week look ahead for activities to be performed during the coming week.

The Design-Build Firm shall meet with the Department's Project Manager at least thirty (30) calendar days before beginning system integration activities. The purpose of these meetings shall be to verify the Design-Build Firm's ITS and signalization integration plans by reviewing site survey information, proposed splicing diagrams, IP addressing schemes, troubleshooting issues, and other design issues. In addition, at

these meetings the Design-Build Firm shall identify any concerns regarding the Integration and provide detailed information on how such concerns will be addressed and/or minimized.

The Design-Build Firm shall provide all documentation required to support system integration meetings, including detailed functional narrative text, system and subsystem drawings and schematics. Also included shall be the documentation to demonstrate all elements of the proposed design which includes, but is not limited to: technical, functional, and operational requirements; ITS/communications; equipment; termination/patch panels; performance criteria; and details relating to interfaces to other ITS subsystems. If, for any reason, planned network or signal operation outages are to occur, the Design-Build Firm shall submit to the Department for approval a Maintenance of Communication (MOC) Plan in advance of the planned network and/or signal operation outage detailing work to be performed and a strategy for minimizing the outage. The existing fiber backbone cut over shall be coordinated District Three Transportation System Management Operations (TSM&O) manager, Okaloosa County Traffic Engineer and designated representatives before beginning of roadway construction.

The project location currently has Okaloosa County fiber on the Brooks bridge and the project corridor.

System Integration Meetings will be held on mutually agreeable dates.

All action items resulting from the System Integration Meeting shall be satisfactorily addressed by the Design-Build Firm and reviewed and approved by the Department.

The Design-Build Firm shall, on a monthly basis, provide written progress reports that describe the items of concern and the work performed on each task.

O. Public Involvement:

1. General:

Public involvement is an important aspect of the Project. Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the Project. The Department, or its designated representative, will serve as the Public Involvement Consultant (PIC) to carry out an exhaustive Public Involvement Campaign and a marketing effort. The Design-Build Firm will assist the Department in the Public Involvement effort as described below.

2. Community Awareness:

The Design-Build Firm will cooperate with the PIC in development and delivery of a project Community Awareness Program.

3. Public Meetings:

The Design-Build Firm shall provide all supporting materials necessary for various public meetings, which may include:

- Kick-off or introductory meeting
- Metropolitan Planning Organization (MPO) Citizens Advisory Committee Meetings
- MPO Transportation Technical Committee Meetings
- MPO Meetings

- Public Information Meetings
- Elected and appointed officials
- Special interest groups (private groups, homeowners associations, environmental groups, minority groups and individuals)
- Open Houses
- Virtual Public Hearings

The Design-Build Firm shall include attendance at two meetings per month for the term of the contract to support the public involvement program.

For any of the above type meetings the Design-Build Firm shall provide all technical assistance, data and information, display boards, printed material, video graphics, computerized graphics, etc., and information necessary for the day-to-day exchange of information with the public, all agencies and elected officials in order to keep them informed as to the progress and impacts that the proposed Project will create. This includes workshops, information meetings, open houses, and public hearings.

The Design-Build Firm shall, as determined by the Department, attend the meetings with an appropriate number of personnel to assist the CEI/Department. The Design-Build Firm shall forward all requests for group meetings to the CEI/Department. The Design-Build Firm shall inform the CEI/Department of any meetings with individuals that occur without prior notice.

4. **Public Workshops, Information Meetings:**

The Design-Build Firm shall provide all the support services listed in No. 3 above.

All legal/display advertisements announcing workshops, information meetings, and public meetings will be prepared and paid for by the Department.

The Department will be responsible for the legal/display advertisements for design concept acceptance. The Department will be responsible for preparing and mailing (includes postage) for all letters announcing the associated workshops and information meetings.

5. **Public Involvement Data:**

The Design-Build Firm is responsible for the following:

- Coordinating with the Department's PIC and the District Public Information Office.
- Identifying possible permit and review agencies and providing names and contact information for these agencies to the Department.
- Providing required expertise (staff members) to assist the Department on an as-needed basis.
- Preparing color graphic renderings and/or computer generated graphics to depict the proposed improvements for coordination with the Department, local governments, and other agencies.
- Providing information to the Department to keep the Department website current.

The Design-Build Firm shall provide records of all public correspondence, written or verbal, to the Department throughout the life of the Project.

The Design-Build Firm may be asked by the CEI/Department to prepare draft responses to any public inquiries as a result of the public involvement process. The Department shall review all responses prior to the Design-Build Firm mailing.

P. Quality Management Plan (QMP):

1. Design:

The Design-Build Firm shall be responsible for the professional quality, technical accuracy and coordination of all surveys, designs, drawings, specifications, geotechnical and other services furnished by the Design-Build Firm under this contract.

The Design-Build Firm shall provide a Design Quality Management Plan, which describes the Quality Control (QC) procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. In addition the QMP shall establish a Quality Assurance (QA) program to confirm that the Quality Control procedures are followed. The Design-Build Firm shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The QMP may be one utilized by the Design-Build Firm, as part of their normal operation or it may be one specifically designed for this Project. The Design-Build Firm shall submit a QMP within fifteen (15) working days following issuance of the written Notice to Proceed. A marked up set of prints from the Quality Control review will be sent in with each review submittal. The responsible Professional Engineers or Professional Surveyor that performed the Quality Control review, as well as the QA manager will sign a statement certifying that the review was conducted.

The Design-Build Firm shall, without additional compensation, correct all errors or deficiencies in the surveys, designs, drawings, specifications and/or other services.

2. Construction:

The Design-Build Firm shall be responsible for developing and maintaining a Construction Quality Control Plan in accordance with Section 105 of Standard Specifications which describes their Quality Control procedures to verify, check, and maintain control of key construction processes and materials.

The sampling, testing and reporting of all materials used shall be in compliance with the Sampling, Testing and Reporting Guide (STRG) provided by the Department. The Design-Build Firm will use the Department's database(s) to allow audits of materials used to assure compliance with the STRG. The Department has listed the most commonly used materials and details in the Department's database. When materials being used are not in the Department's database list, the Design-Build Firm shall use appropriate material details from the STRG to report sampling and testing. Refer to the State Materials Office website for instructions on gaining access to the Department's databases: <http://www.fdot.gov/materials/quality/programs/qualitycontrol/contractor.shtm>

Prepare and submit to the Engineer a Job Guide Schedule (JGS) using the Department database in accordance with Section 105 of Standard Specifications.

The Department, and FHWA, as necessary, shall maintain its rights to inspect construction activities and request any documentation from the Design-Build Firm to ensure quality products and services are being provided in accordance with the Department's Materials Acceptance Program.

Q. Liaison Office:

The Department and the Design-Build Firm will designate a Liaison Office and a Project Manager who shall be the representative of their respective organizations for the Project.

R. Engineers Field Office: N/A

S. Schedule of Values:

The Design-Build Firm is responsible for submitting estimates requesting payment. Estimates requesting payment will be based on the completion or percentage of completion of tasks as defined in the schedule of values. Final payment will be made upon final acceptance by the Department of the Design-Build Project. Tracking DBE participation will be required under normal procedures according to the Construction Project Administration Manual. The Design-Build Firm must submit the schedule of values to the Department for approval. No estimates requesting payment shall be submitted prior to Department approval of the schedule of values.

Upon receipt of the estimate requesting payment, the Department's Project Manager will make judgment on whether or not work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

T. Computer Automation:

The Project shall be developed utilizing computer automation systems in order to facilitate the development of the contract plans. Various software and operating systems were developed to aid in assuring quality and conformance with Department policies and procedures. The Department supports OpenRoads Designer with FDOT Connect Software as its standard graphics and roadway design platform as well as Autodesk's AutoCAD Civil 3D as an alternate platform. Seed Files, Cell Libraries, User Commands, MDL Applications and related programs developed for roadway design and drafting are in the FDOT CADD Software Suite. Furnish As-Built documents for all building related components of the Project in AutoCAD format. It is the responsibility of the Design-Build Firm to obtain and utilize current Department releases of all CADD applications.

The Design-Build Firm will be required to furnish the Project's CADD files after the plans have been Released for Construction. The Design-Build Firm's role and responsibilities are defined in the Department's CADD Manual. The Design-Build Firm will be required to submit final documents and files which shall include complete CADD design and coordinate geometry files in OpenRoads Designer and/or AutoCAD design files format.

As part of the As-Built Set deliverables, field conditions shall be incorporated into OpenRoads Designer and/or AutoCAD design files. Use the cloud revision utility as well as an "AB" revision triangle to denote field conditions on plan sheets.

U. Construction Engineering and Inspection:

The Department is responsible for providing Construction Engineering and Inspection (CEI) and Quality Assurance Engineering.

The Design-Build Firm is subject to the Department's Independent Assurance (IA) Procedures.

V. Testing:

The Department or its representative will perform verification and resolution sampling and testing activities at both on site, as well as, off site locations such as pre-stress plants, batch plants, structural steel , fabrication plants, etc. in accordance with the latest Specifications.

W. Value Added:

The Design-Build Firm may provide Value Added Project Features, in accordance with Article 5-14 of the Specifications for the following features:

- Roadway features
- Roadway drainage systems,
- Approach slabs
- Superstructure
- Substructure
- Concrete defects
- Structural steel defects (if applicable)
- Post-tensioning systems (if applicable)
- ITS Elements
- Landscaping

And any other products or features the Design-Build Firm desires. The Design-Build Firm shall develop the Value Added criteria, measurable standards, and remedial work plans in the Design-Build Firm's Technical Proposal for features proposed by the Design-Build Firm.

The Design-Build Firm shall provide at a minimum the three (3) year warranty period as defined by Article 338, Value Added Asphalt Pavement, Division II, Standard Specifications. The Design-Build Firm may provide a longer warranty period than the three (3) year minimum.

The Design-Build Firm shall provide at a minimum the five (5) year warranty period as defined by Article 475, Value Added Bridge Components, Division II, Value Added Specifications. The Design-Build Firm may provide a longer warranty period than the five (5) year minimum.

The Department will NOT consider self-imposed monetary penalties/deductions proposed by Design-Build Firm's as Value Added items.

X. Adjoining Construction Projects:

The Design-Build Firm shall be responsible for coordinating all design, permitting, and construction activities with other construction Projects that are impacted by or impact this Project. This includes Projects under the jurisdiction of local governments, the Department, other regional and state agencies, or private entities. Adjoining construction projects include, but are not limited to:

- FPID 437366-1 SR 30 (US 98) from West of Josie Road to West of Brooks Bridge—Resurfacing; The project is scheduled to Let in FY 2023. The Department’s Project Manager is Ray Kirkland.
- FPID 442261-1 Santa Rosa Blvd from Military Bound Entrance to SR 30 (US 98) Miracle Strip—Local Agency Program (LAP) Project for sidewalk construction. The Department’s Project Manager is Craig Gavin.

The Design-Build Firm shall consider and include in the Construction Plans and Bid Price Proposal, any and all temporary detours or diversions required to facilitate traffic movements into and out of the project limits; notwithstanding the alignment, lane positioning and/or grade differences of traffic conditions on those adjacent projects.

Y. Issue Escalation:

In the event issues arise during prosecution of the work, the resolution of those issues will be processed as described below unless revised by a Project specific Partnering Agreement:

The escalation process begins with the Construction Project Manager. All issues are to be directed to the Construction Project Manager. If the issue cannot be resolved by the Construction Project Manager in coordination with the Resident Engineer and Design Project Manager as applicable, the Construction Project Manager shall forward the issue to the District Construction Engineer who will coordinate with the District Design Engineer, and the District Utility Administrator, as applicable. Each level shall have a maximum of five (5) calendar days (excluding weekends and Department observed holidays) to answer, resolve, or address the issue. The Design-Build Firm shall provide all supporting documentation relative to the issue being escalated. The five (5) calendar day period (excluding weekends and Department observed holidays) begins when each level in the issue escalation process has received all required supporting documentation necessary to arrive at an informed and complete decision. The five (5) calendar day period (excluding weekends and Department observed holidays) is a response time and does not infer resolution. Questions asked by the Department may be expressed verbally and followed up in writing within one (1) calendar day (excluding weekends and Department observed holidays). Responses provided by the Design-Build Firm may be expressed verbally and followed up in writing within one (1) working day. Once a response is received from the District Construction Engineer, the Construction Project Manager will respond to the Design-Build Firm in a timely manner but not to exceed three (3) calendar days (excluding weekends and Department observed holidays).

The Design-Build Firm shall provide a similar issue escalation process for their organization with personnel of similar levels of responsibility.

Should an impasse develop, the Dispute Review Board shall assist in the resolution of disputes and claims arising out of the work on the Contract.

VI. Design and Construction Criteria.

A. General:

All design and construction work completed under the Contract shall be in accordance with the United States Standard Measures.

B. Vibration and Settlement Monitoring:

The Design-Build Firm shall be responsible for the identification of and coordination with vibration sensitive sites impacted by the Work for the duration of the construction period.

The Design-Build Firm is responsible for evaluating the need for, design of, and the provision of any necessary precautionary features to protect existing structures from damage, including, at a minimum, selecting construction methods and procedures that will prevent damage. The Design-Build Firm shall submit for Department acceptance a Settlement and Vibration Monitoring Plan (SVMP) as part of the 90% plans submittal and update the SVMP throughout the Construction Period. The Design-Build Firm is responsible for establishing maximum settlement and vibration thresholds equivalent to or lower than the Department Specification requirements for all construction activities, including vibratory compaction operations and excavations.

Submittals for Settlement and Vibration Monitoring Plan (SVMP) shall include the following as a minimum:

- Identify any existing structures that will be monitored for vibrations during the construction period.
- Establish the maximum vibration levels for the existing structures that shall not be exceeded.
- Identify any existing structures that will be monitored for settlement during the construction period.
- Establish the maximum settlement levels for the existing structures that must not be exceeded.
- Identify any existing structures that require pre-construction and post-construction surveys.

The Department will perform the review of Vibration and Settlement submittals in accordance with Department Specifications.

C. Geotechnical Services:

Driven Pile Foundations for Bridges and Major Structures

The Design-Build Firm shall determine whether the resistance factors used for pile design will be based on static, statnamic, and/or dynamic load testing. If static/statnamic load testing is proposed, prepare a Technical Special Provision (TSP) for tests other than the Modified Quick Test, such as Bidirectional (Osterberg Cell) Load Test or Statnamic Load Test. For Bidirectional Load Tests use the same loading and

unloading intervals, as well as the same loading times specified for the Modified Quick Test. Comply with the instrumentation requirements of 455-2.4. Before the resistance factors for static/statnamic load testing may be used for pile foundations in any of the following areas of the Project, a minimum number of successful load tests must be performed in representative locations of that area:

- Station 109+05 to Station 115+00 (CL of Survey), minimum of 1 test)
- Station 115+00 to Station 120+00 (CL of Survey), minimum of 1 tests)
- Station 120+00 to Station 131+96 (CL of Survey), minimum of 1 test)

The Design-Build Firm shall be responsible for the following:

1. Selection of pile type and size.
2. Selection of test pile lengths, locations and quantity of test piles.
3. Selection of pile testing methods.
4. Determining the frequency of such testing unless otherwise stated herein.
5. Performance of the selected test pile program, including dynamic load test personnel and equipment. The Department may observe the installation of test piles and all pile testing.
6. Preparing and submitting a Pile Installation Plan for the Department's acceptance.
7. Selection of production pile lengths.
8. Development of the driving criteria.
9. Driving piles to the required capacity and minimum penetration depth.
10. Inspecting and Recording the pile driving information. Provide a pile inspection device that displays and stores electronically for every hammer blow along with a timestamp: stroke for open-ended diesel hammers and blows per foot and blows per minute for all hammers. The device must auto-generate the Department's Pile Driving Record form and export the non-editable electronic data in a format compatible with the Pile Driving Record form. Use this device during the inspection of test piles and production piles.
11. Submitting Foundation Certification Packages.
12. Providing safe access and cooperating with the Department in verification of the piles, both during construction and after submittal of the certification package.

Drilled Shaft Foundations for Bridges and Miscellaneous Structures

The Design-Build Firm shall determine whether the resistance factors used for drilled shaft design will be based on static/statnamic load testing. Prepare a Technical Special Provision (TSP) for tests other than the Modified Quick Test, such as Bidirectional (Osterberg Cell) Load Test or Statnamic Load Test. For Bidirectional Load Tests use the same loading and unloading intervals, as well as the same loading times specified for the Modified Quick Test. Comply with the instrumentation requirements of 455-2.4. Before the resistance factors for static/statnamic load testing may be used for drilled shafts in any of the following areas of the Project, a minimum number of successful load tests must be performed in representative locations of that area:

- Station 109+05 to Station 115+00 (CL of Survey), (minimum of 1 test)
- Station 115+00 to Station 120+00 (CL of Survey), (minimum of 1 test)

- Station 120+00 to Station 131+96 (CL of Survey), (minimum of 1 test)

Limits of these areas may be modified by the Design-Build Firm if the modifications are justified by additional subsurface information and concurred with by the Department. Furthermore, resistance factors for static/statnamic load testing may only be used for production shafts which have the same tip elevations in the same material as the representative static/statnamic load test shaft. Deviations in tip elevations or bearing material will require additional static/statnamic testing if the static/statnamic load test resistance factors will be used.

The Design-Build Firm shall be responsible for the following:

1. Evaluating geotechnical conditions to determine the drilled shaft diameter and length and construction methods to be used.
2. Performing the subsurface investigation and drilling pilot holes prior to establishing the drilled shaft tip elevations and socket requirements. For redundant drilled shaft bridge foundations, perform at least one test boring in accordance with the Soils and Foundations Handbook at each bent/pier.
3. Determining the locations of the load test shafts and the types of tests that will be performed.
4. Performing pilot borings for test holes (also known as test shafts or method shafts) and load test shafts and providing the results to the Department at least one (1) working day before beginning construction of these shafts.
5. Preparing and submitting a Drilled Shaft Installation Plan for the Department's acceptance.
6. Constructing the method shaft (test hole) and load test shafts successfully and conducting thermal integrity tests on these shafts.
7. Providing all personnel and equipment to perform a load test program on the load test shafts.
8. Determining the production shaft lengths.
9. Documenting and providing a report that includes all load test shaft data, analysis, and recommendations to the Department.
10. Constructing all drilled shafts to the required tip elevation and socket requirement in accordance with the specifications.
11. Inspecting and documenting the construction of all drilled shafts in accordance with the specifications.
12. Performing Non-Destructive Drilled Shaft Integrity Testing in accordance with 455-17.6.
13. Repairing all detected defects and conducting post repair integrity testing using 3D tomographic imaging and gamma-gamma density logging.
14. Submitting Foundation Certification Packages in accordance with the specifications.
15. Providing safe access and cooperating with the Department in verification of the drilled shafts, both during construction and after submittal of the certification package.

Spread Footings Foundations For Miscellaneous Structures

The Design-Build Firm shall be responsible for the following:

1. Evaluating geotechnical conditions and designing the spread footing.
2. Constructing the spread footing to the required footing elevation, at the required soil or rock material, and at the required compaction levels, in accordance with the specifications.
3. Inspecting and documenting the spread footing construction.
4. Submitting Foundation Certification Packages in accordance with the specifications.

5. Providing safe access and cooperating with the Department in verification of the spread footing, both during construction and after submittal of the certification package.

Auger Cast Piles for Miscellaneous Structures

The Design-Build Firm shall be responsible for the following:

1. Evaluating geotechnical conditions and designing the foundations, including diameter and lengths.
2. Constructing all auger cast piles to the required tip elevation and socket requirements, in accordance with the specifications.
3. Preparing and submitting an Auger Cast Pile Installation Plan for the Department's acceptance.
4. Inspecting and documenting the auger cast pile installation.
5. Submitting Foundation Certification Packages in accordance with the specifications.
6. Providing safe access and cooperating with the Department in verification of the auger cast piles, both during construction and after submittal of the certification package.

Specialty Geotechnical Services Requirements

Specialty geotechnical work is any alternative geotechnical work not covered by Department Specifications and requires the development of a Technical Special Provision (TSP). Any TSP for geotechnical work shall include the following:

- Criteria of measurable parameters to be met in order to accept the specialty geotechnical work,
- A field testing and instrumentation program to verify design assumptions and performance,
- A quality control program to be performed by the Design-Build Firm that includes sampling and testing to ensure the material quality, products, and installation procedures meet requirements,
- A verification testing program to be performed by the Geotechnical Foundation Design Engineer of Record (GFDEOR) that includes inspection, sampling, and testing to verify the material, products, and procedures meet requirements. The TSP shall include language providing separate lab samples to be used for the Department's independent verification.
- A certification process.

After construction of the specialty geotechnical work, the Design-Build Firm shall submit a certification package for Department's review within 15 business days. The certification package shall include the results of all the field testing, instrumentation and lab testing performed and a signed and sealed letter by the GFDEOR certifying that the specialty geotechnical work meets the requirements. The Department may issue comments and require additional verification testing.

D. Utility Coordination:

The Design-Build Firm shall utilize a single dedicated person responsible for managing all utility coordination. This person shall be contractually referred to as the Utility Coordination Manager (UCM) and shall be identified in the Design-Build Firm's proposal. The Design-Build Firm shall notify the Department in writing of any change in the identity of the Utility Coordination Manager. The Utility Coordination Manager shall have the following knowledge, skills, and abilities:

1. A minimum of 4 years of experience performing utility coordination in accordance with Department standards, policies, and procedures.

2. Knowledge of the Department plans production process and utility coordination practices,
3. Knowledge of Department agreements, standards, policies, and procedures.
4. Ability to physically reach the project site within three (3) hours.

The Design-Build Firm’s Utility Coordination Manager shall be responsible for managing all utility coordination, including, but not limited to, the following:

1. Ensuring that all utility coordination and activities are conducted in accordance with the requirements of the Contract Documents.
2. Identifying all existing utilities and coordinating any new installations
3. Reviewing proposed utility permit application packages and providing comments based on the compatibility of the permit as related to the Design-Build Firm’s plans.
4. Scheduling and conducting utility meetings, preparing and distributing minutes of all utility meetings, and ensuring expedient follow-up on all unresolved issues.
5. Distributing all plans, conflict matrices and changes to affected Utility Agency/Owners and making sure this information is properly coordinated.
6. Identifying, preparing, reviewing and facilitating any agreement required for any utility work needed through final approval and execution. The UCM shall also be responsible for monitoring and reporting the performance of all involved parties under said agreement.
7. Preparing, reviewing, approving, signing, and coordinating the implementation of and submitting to the Department for review, all Utility Work Schedules.
8. Resolving utility conflicts.
9. Obtaining and maintaining all appropriate “Sunshine 811” tickets as they apply to utility relocation work.
10. Performing Constructability Reviews of plans prior to construction activities with regard to the installation, removal, temporary removal, de-energizing, deactivation, relocation, or adjustment of utilities.
11. Providing periodic Project updates to the Department Project Manager and District Utility Office as requested.
12. Coordination with the Department on any issues that arise concerning reimbursement of utility work costs between the Department and the utility.
- ~~13. **Verifying the electrical and communications requirements for toll facilities provided in the GTR.**~~
14. Prepare utility certifications or statements for all Federal-Aid construction projects per 23 CFR 635.309(p)(1)(v)

The following Utility Agency/Owners (UA/O’s) have been identified by the Department as having facilities within the Project corridor for which the Department contemplates an adjustment, protection, or relocation is possible. Also provided below is a determination made by the Department as to the eligibility of reimbursement for each UA/O identified herein along with an identification of whether the UA/O or the Design-Build Firm will be responsible for performing the utility work

Table A – Summary of Department Contemplated Adjustment, Protection, or Relocation

<u>UA/O</u>	<u>Utility Relocation Type</u>	<u>Eligible for Reimbursement</u>	<u>Work to be Bid in this D/B Contract</u>
AT&T Corporate	UA/O Performing Utility Work	No	No

AT&T Florida	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC ¹	No	Partial 1. Include under 415474-2-52-02
Centurylink	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC ¹	Partial	Partial 1. Include under 415474-2-52-02
City of Fort Walton Beach	UA/O Performing Utility Work	Partial	No
Cox Southeast	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC ¹	Partial	Partial 1. Include under 415474-2-52-02
Gulf Power Company	UA/O Performing Utility Work	Partial	No
Okaloosa County Board of County Commissioners (BCC) Information Technology	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC¹	No	Partial 1. Include under 415474-2-52-01
Okaloosa County Signal System	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC^{1 2}	No	Partial 1.
Okaloosa County Water & Sewer	DB Firm Performing Utility Work through UWHC	Partial	Yes. Include under 415474-2-52-02 415474-2-56-01
Okaloosa Gas District	UA/O Performing Utility Work	Partial	No
Uniti Fiber	UA/O Performing Utility Work; DB Firm Performing partial Utility Work through UWHC ¹	No	Partial 1. Include under 415474-2-52-02
Eglin AFB Communications	DB Firm Performing Utility Work through UWHC	No	Yes. Include under 415474-2-52-01

1. DB Firm work to include 4” stainless steel conduit materials, placement, and attachment to bridge. See Description of Work section of the DBRFP.
2. [“Okaloosa County Signal System” is owned by FDOT and relocation is covered in Section VI. R. of the RFP.](#)

Table B - Summary of UAO having facilities within the Proposed Project Limits

UAO	Contact Person	Contact Number	Email Address
AT&T Corporate	Steve Hamer	813-888-8300 EXT. 201	shamer@sdt-1.com
AT&T Florida	Tim Edgar	850-293-3780	te1810@att.com
CenturyLink	Amber Gilson	850-815-3131	amber.gilson@centurylink.com
City of Fort Walton Beach	Daniel Payne, P.E.	850-833-9613	dpayne@fwb.org
Cox Southeast	Roger Dixon	850-314-8163	roger.dixon@cox.com
Gulf Power Company	Chad Swails	850-244-4747	chad.swails@nexteraenergy.com

Okaloosa County Information Technology	Jason Snyder	850-978-0331	jsnyder@myokaloosa.com
Okaloosa County Signal System	Randy Showers, P.E.	850-609-6181	rshowers@myokaloosa.com
Okaloosa County Water & Sewer	Jon Kanak	850-609-5098	jkanak@myokaloosa.com
Okaloosa Gas District	Ryan Burns	850-280-4851	ryanburns@okaloosagas.com
Uniti Fiber	Kyle Hill	850-544-1400	james.hill@uniti.com
Eglin AFB Communications	Mr. Ken Coleman	850-882-4990	kenneth.coleman.7@us.af.mil

Utility information shown in the RFP Concept Plans is limited to existing utility locations. The information is sourced from UA/O markups, UA/O GIS data, UA/O as-builts, and project survey as noted in the plans. Source information provided by UA/O's is included in the Reference Documents. The Description of Work section of the RFP includes specific information on UWHC.

The Design-Build Firm may request the utility to be relocated to accommodate changes from the concept plans; however, these relocations require the Department's approval and the Department will not pay the Utility Agency/Owner (UA/O) or the Design-Build Firm for the utility relocation work regardless of the UA/O's eligibility for reimbursement. ~~Gulf Power (remain in place and energized), Okaloosa Gas District (remain in place and in service), Okaloosa County Water and Sewer (remain in place, and to be placed out of service once new main installed on new bridge) and AT&T Corporate (remain in place and out of service once temporary crossing is installed on new bridge) have subaqueous facilities as depicted in the concept plans and as shown in the Reference Documents. These facilities are to be protected, to remain, and not to be relocated.~~

For a reimbursable utility relocation where the UA/O desires the work to be done by their contractor, the UA/O will perform the work in accordance with the utility work schedule and permit, and bill the Department directly.

DEVIATION FROM THE CONCEPTUAL UTILITY RELOCATION PLAN: If the Design-Build Firm chooses to deviate from the concept plans and the scope of the impact to a utility depicted in the Reference Documents, and thereby causes a greater impact to a utility, the Design-Build Firm shall be solely responsible for all increased costs incurred by the utility owner associated with the increase in the scope of the impact to a utility from that depicted in the Reference Documents. The Design-Build Firm shall obtain an agreement from the utility owner being impacted which outlines the changes to the scope of the impact to a utility from that depicted in the Reference Documents. The agreement shall also address the Design-Build Firm's obligation to compensate the utility owner for the additional costs above the costs which would have been incurred without the Design Build Firm's increase in the scope of the impact to a utility from that depicted in the Reference Documents. The Design-Build Firm shall also provide a draft utility permit application acceptable to the Department for the placement of the utility owner's facilities based on the final design. The Department shall not compensate or reimburse the Design-Build Firm for any cost created by a change in scope of the impact to a utility from that depicted in the Reference Documents, or be liable for any time delays caused by a change in scope of the impact to a utility from that depicted in the Reference Documents.

The relocation agreements, plans, work schedules and permit application are to be forwarded to the Department for review by the District Utility Office (DUO) and the Department's Project Manager. The DUO and Department's Project Manager only review the documents and are not to sign them. Once reviewed, the utility permit application will be forwarded to the District Maintenance office for the permit to be signed and recorded or submitted through the One Stop Permitting (OSP) system.

E. Roadway Plans:

General:

The Design-Build Firm shall prepare the Roadway Plans Package. This work effort includes the roadway design and drainage analysis needed to prepare a complete set of Roadway Plans, Temporary Traffic Control Plans, Environmental Permits and other necessary documents.

Design Analysis:

The Design-Build Firm shall develop and submit a Typical Section Package based on the RFP Requirements. The Design-Build Firm shall develop and submit a signed and sealed Pavement Design Package **(if modified from the minimum pavement design in the RFP)** and Drainage Analysis Report for review and concurrence by the Department and FHWA on Projects of Division Involvement (PoDIs).

Any deviation from the Department's design criteria will require a Design Variation and any deviation from AASHTO will require a Design Exception. All such Design Variations and Design Exceptions must be approved.

These packages shall include the following:

F. Roadway Design:

See FDM Part 3; Chapter 301 for Roadway Design sheets, elements and completion level required for each submittal.

1. Typical Section Package:

- Transmittal letter
- Location Map
- Roadway Typical Section(s)
 1. Pavement Description (Includes milling depth)
 2. Minimum lane, shoulder, median widths
 3. Slope requirements
 4. Barriers
 5. Right-of-Way
- Data Sheet
- Design Speed

2. Pavement Design Package:

The recommended pavement design attached to this document is the minimum required pavement design for the contract.

“Resurfacing for side streets” pavement design as provided as an Attachment to the RFP is ONLY intended to be utilized for tie-ins and areas of conflicting pavement markings.

Any proposed alternate pavement design shall require a minimum of one lift of structural pavement and one lift of friction course pavement. Minimum Pavement Design requirements for each design applies to the entire width of the lane. Any tapered/variable depth milling shall meet these minimum requirements across the entire lane unless otherwise approved by the Department. All longitudinal joints, including base and pavement widening joints, shall be within 1 foot of the lane edge or 1 foot of the center of a lane to minimize joints within the vicinity of a wheel path.

If alternate pavement designs are proposed, the following submittal requirements shall be provided to the Department for review.

- Pavement Design
 1. Minimum design period
 2. Minimum ESAL's
 3. Minimum design reliability factors
 4. Resilient modulus for existing and proposed widening (show assumptions)
 5. Roadbed resilient modulus
 6. Minimum structural asphalt thickness
 7. Cross slope
 8. Identify the need for modified binder
 9. Pavement coring and evaluation
 10. Identify if ARMI layer is required
 11. Minimum milling depth

Use of the Mechanistic-Empirical Pavement Design Guide (MEPDG) for pavement design shall not be allowed.

3. **Drainage Analysis:**

The Design-Build Firm shall be responsible for designing the drainage and stormwater management systems. All design work shall be in compliance with the Department's Drainage Manual; Florida Administrative Code, Chapter 14-86; Federal Aid Policy Guide 23 CFR 650A; and the requirements of the regulatory agencies. This work will include the engineering analysis necessary to design any or all of the following: cross drains, French drains, underdrains, edge drains, roadway ditches, outfall ditches, storm sewers, retention/detention facilities, interchange drainage and water management, ~~and~~ temporary drainage design for all MOT phases, other drainage systems and elements of systems as required for a complete analysis. Full coordination with all permitting agencies, the district Environmental Management section and Drainage Design section will be required from the outset. Full documentation of all meetings and decisions are to be submitted to the District Drainage Design section. These activities and submittals shall be coordinated through the Department's Project Manager.

The exact number of drainage basins, outfalls and water management facilities (retention/detention areas, weirs, etc.) will be the Design-Build Firm's responsibility. The Department has developed a preliminary drainage design as depicted in the concept plans, for which an ERP permit has been submitted. The drainage design in the concept plans may be modified by the Design-Build Firm as necessary for the project.

The objective is to obtain approved stormwater treatment/attenuation design. The Design-Build Firm shall ensure that no adverse impacts occur to the adjacent properties as a result of the drainage design.

Perform design and generate construction plans documenting that the permitted systems function to criteria.

The Design-Build Firm shall verify that all existing cross drains and storm sewers that are to remain have adequate hydraulic capacity and design life. Flood flow requirements will be determined in accordance with the Department's procedures. If any of these existing cross drains or storm sewers are found to be hydraulically inadequate or found to have insufficient design life, they must be replaced or supplemented in accordance with the drainage requirements of this RFP. If any existing cross drains or storm sewers require repairs but otherwise would have sufficient remaining design life, repairs shall be made in accordance with the requirements of this RFP.

The Design-Build Firm shall consider optional culvert materials in accordance with the Department's Drainage Manual Criteria.

Prior to proceeding with the Drainage Design, the Design-Build Firm shall meet with the District Drainage Engineer. The purpose of this meeting is to provide information to the Design-Build Firm that will better coordinate the Preliminary and Final Drainage Design efforts. This meeting is Mandatory and is to occur fifteen (15) calendar days (excluding weekends and Department observed holidays) prior to any submittals containing drainage components.

The Design-Build Firm must employ a Registered Professional Engineer in Florida who specializes in coastal engineering. The coastal engineer must hold a M.S. or Ph.D. in Coastal Engineering or a related engineering field and/or have extensive experience (as demonstrated by technical publications in technical journals with peer review) in coastal hydrodynamics and sediment transport processes. The coastal engineer must sign and seal the final Bridge Hydraulics Report and Bridge Hydraulics Recommendation Sheet. **As part of the Bridge Hydraulics Report, the Design-Build Firm is responsible for ensuring no greater harm to the existing shoreline due to water velocities is caused by their design. If the Design-Build Firm's proposed design creates more scour than the current bridge configuration, the Design-Build Firm shall enhance the shoreline within the FDOT Right of Way.**

The Design-Build Firm shall provide the Department's District Drainage Engineer a signed and sealed Drainage Design Report. It shall be an As-Built Plan of all drainage computations, both hydrologic and hydraulic. The engineer shall include all necessary support data.

G. Geometric Design:

The Design-Build Firm shall prepare the geometric design for the Project using the Standard Plans and criteria that are most appropriate with proper consideration given to the design traffic volumes, adjacent land use, design consistency, aesthetics, ADA requirements, and this document.

The design elements shall include, but not be limited to, the horizontal and vertical alignments, lane widths, shoulder widths, median widths, cross slopes, borders, sight distance, side slopes, front slopes and ditches.

The geometric design developed by the Design-Build Firm shall be an engineering solution that is not merely an adherence to the minimum AASHTO and/or Department standards.

For criteria not specifically defined within the RFP, criteria contained in *AASHTO – A Policy on Geometric Design of Highways and Streets* shall be applicable to Perry Road South, Brooks Street, Florida Blanca Place, Santa Rosa Boulevard, Business Access Route, new Northbound Connection, new Eastbound Connection, and Hotel Entrance Roadway. Roundabouts shall be designed in accordance with FDOT Design Manual criteria.

H. Design Documentation, Calculations, and Computations:

The Design-Build Firm shall submit to the Department design documentation, notes, calculations, and computations to document the design conclusions reached during the development of the construction plans.

The design notes and computation sheets shall be fully titled, numbered, dated, indexed, and signed by the designer and the checker. Computer output forms and other oversized sheets shall be folded to a standard size 8½" x 11". The data shall be in a hard-back folder for submittal to the Department. At the Project completion, a final set of design notes and computations, signed by the Design-Build Firm, shall be submitted with the As-Built Plans and tracings.

The design documentation, notes, calculations and computations shall include, but not be limited to the following data:

1. Standards Plans and criteria used for the Project
2. Geometric design calculations for horizontal alignments
3. Vertical geometry calculations
4. Documentation of decisions reached resulting from meetings, telephone conversations or site visits

I. Structure Plans:

1. Bridge Design Analysis:

- a. The Design-Build Firm shall submit to the Department final signed and sealed design documentation prepared during the development of the plans.
- b. The Design-Build Firm shall ensure that the final geotechnical and hydraulic recommendations and reports required for bridge design are submitted with the 90% bridge plans.
- c. The Design-Build Firm shall "Load Rate" all bridges in accordance with the Department Procedure 850-010-035 and the Structures Manual. The Bridge Load Rating Calculations, the Completed Bridge Load Rating Summary Detail Sheet, and the Load Rating Summary Form shall be submitted to the Department for review with the 90% superstructure submittal. The final Bridge Load Rating Summary Sheet and Load Rating Summary Form shall be submitted to the Department for review with the Final superstructure submittal. A final, signed and sealed Bridge Load Rating, updated for as-built conditions, shall be submitted to the Department for each phase of the bridge construction prior to placing traffic on the completed phase of the bridge. A final, signed and sealed Bridge Load Rating, updated for the as-built conditions as part of the As-Built Plans submittal shall be submitted

to the Department before any traffic is placed on the bridge. The Bridge Load Rating shall be signed and sealed by a Professional Engineer licensed in the State of Florida.

- d. The Design-Build Firm shall evaluate scour on all bridges over water using the procedures described in the FDOT Drainage Manual.
- e. The Engineer of Record for bridges shall analyze the effects of the construction related loads on the permanent structure. These effects include but are not limited to: construction equipment loads, change in segment length, change in construction sequence, etc. The Engineer of Record shall review all specialty engineer submittals (camber curves, falsework systems, etc.) to ensure compliance with the contract plan requirements and intent.
- f. Wall heights, from the top of leveling pad to the top of wall coping, greater than 30' shall not be permitted, unless site specific locations have been approved by the Department through the ATC process.

2. **Criteria**

The Design-Build Firm shall incorporate the following into the design of this facility:

- a. All plans and designs are to be prepared in accordance with the Governing Regulations of Section V. A.
- b. Critical Temporary Retaining Walls: Whenever the construction of a component requires excavation that may endanger the public or an existing structure that is in use the Design-Build Firm must protect the existing facility and the public. If a critical temporary retaining wall is, therefore, required during the construction stage only, it may be removed and reused after completion of the work. Such systems as steel sheet pilings, soldier beams and lagging or other similar systems are commonly used. In such cases, the Design-Build Firm is responsible for designing and detailing the wall in the set of contract plans. These plans must be signed and sealed by the Structural Engineer in responsible charge of the wall design.
- c. For bridges over navigable waterways, establish the required pier strengths using the MathCad program furnished by the Department. The MathCad program furnished by the Department allows for the proposed bridge geometry to be input by the Engineer. Other parameters such as water traffic, waterway characteristics, etc. may not be changed. This assures that all Design-Build Firms are designing on the same assumptions other than the specific bridge layout that each is proposing.

The following parameters shall be utilized by the Design-Build Firm in the Mathcad program for calculating the required pier strengths:

Section 1 – Navigable Channel Characteristics and Vessel Traffic PastPoint Data Channel Characteristics

C = 150 ft

Θ = 10 degrees

Region = Turn/Bend

$V_c = 1.0$ knot
 $V_{xc} = 0.0$ knot
 $R_D = \text{low}$

Vessel Traffic Data

Past PointNumber = 27
VesselDirection = both
 $V_{\min} = 1$ knot

Section 2 – Pier Characteristics

$D_{\text{water}} =$
(-280ft or more from CL channel) = 9 ft
(-115ft from CL channel) = 19 ft
(+115ft from CL channel) = 27 ft
(+280ft or more from CL channel) = 16 ft

- For the Design Build Firm’s specific pier locations, the Firm may interpolate between the limits listed above for the appropriate elevation.
- D_{water} is defined from centerline of existing channel along Baseline SR 30 (-) downstation, (+) upstation

Section 3 – Vessel Fleet Characteristics

Velocity = 7 knots

Section 11 – Importance Classification

Regular Bridge

- d. Superstructure components shall be located above the splash zone.
- e. The minimum vertical clearance of the main span over the navigation channel shall be 65-feet above the mean high water elevation of Santa Rosa Sound at the main channel crossing. A minimum 150-foot horizontal clearance in the main channel between the fender system shall be provided. At the channel span, the minimum span length shall be 230-ft.
- f. The LRFD Operational Importance Factor shall be 1.0 for all bridges.
- g. Any use of Prefabricated Bridge Elements and Systems shall be in accordance with the design considerations documented in SDM Chapter 25. If the Design Build Team plans to deviate from these requirements, an ATC should be submitted to allow for Department review and concurrence. The following minimum requirements will be required for ATCs:
 - i. General mock-up details for each PBES connection detail
 - ii. General mock-up acceptance criteria required based on connection dissection results
 - iii. General detail of each PBES connection
- h. Existing Structure Removal:

~~i. Within the limits of the main span and fender system, if the existing foundations do not conflict with the proposed foundation locations, the existing foundations must be removed to 24 inches below the mudline, taking~~

into account long term scour depths when determining the elevation of the mudline.

- ii. All existing dolphins must be completely removed.
- iii. Disposition of original swing bridge foundations are unknown. Part or all of the original foundation may have been left in place. See Reference Documents for as-built plans.
- i. Pier protection such as dolphins and islands will not be allowed.
- j. Partial height retaining walls (i.e. perched walls or toe walls) will NOT be allowed for this project.
- k. Geosynthetic Reinforced Soil (GRS) Walls and Abutments will NOT be allowed for this project.
- l. Full height cheek walls shall be provided at the following locations:
 - i. Exposed ends of all end bents
 - ii. Exposed ends of piers where the difference in the exterior beam depth in adjacent spans is greater than or equal to 9”.
 - iii. Exposed ends of piers where the ends of exterior beams in adjacent spans are offset in plan.
 - iv. Exposed ends of piers where beams in adjacent spans are of dissimilar material.
- m. Pile bents shall not be permitted, except at bridge abutments when located behind retaining walls.
- n. All bridge foundations shall be deep foundations.
- o. If structural steel is proposed: All structural steel shall be coated in accordance with Developmental Specification 564. The Design-Build Firm shall use the edition in effect at the time the bid price proposals are due in the District Office.
- p. No stiffeners will be allowed on the outside of exterior girders with the exception of bearing and jacking stiffeners.
- q. Steel box girders are not permitted.
- r. All bolts shall be galvanized.
- s. Weathering steel is not permitted. The use of ASTM A709 Grade 50 structural steel is acceptable.
- t. If continuous post-tensioned concrete superstructure units utilizing flexible filler for tendons within the girder webs are proposed, the following requirements shall apply:
 - i. The design for shear shall account for 1.2 times the outer specified duct diameter as a discount in effective web width for shear design capacity.

- ii. Confinement reinforcement shall be provided for the transverse splitting forces in the web due to the abrupt void within the web at the duct locations.
 - iii. **Limit the duct diameter-to-web width ratio to no more than 0.4.**
 - iv. **The principal tensile stresses in webs shall not exceed $0.082\lambda\sqrt{f'c}$ (ksi) at the Service III limit state of LRFD 3.4.1, both before and after all losses and redistribution of forces.**
 - v. As an alternative to items (i), **and** (ii), **(iii), and (iv)** above, physical testing may be performed by the Design-Build Firm to corroborate the design. All testing procedures and results shall be subject to review and approval by the State Structures Design Office (SSDO).
 - vi. Continuous post-tensioned concrete superstructures shall be submitted through the ATC process for review and approval by the Department.
- u. Concrete segmental box girders beams will require a 6'-6" maintenance access (SDG 4.6.2 requires 6'-0").
- v. All footings located in the water shall be waterline footings. The following additional footing design criteria shall be used:
- i. Size footing such that the effective depth, d_v , is sufficient to resist one-way shear without the contribution of shear reinforcement per LRFD [5.12.8.6]. Neglect pile-to-cap interface friction for calculation of two-way punching shear resistance.
 - ii. For footings designed to resist vessel collision or other large lateral loads with the full bending capacity of the pile developed per SDG 3.5.1.
 - a. Determine the minimum horizontal dimension from the edge of the exterior pile to the nearest footing edges as the largest of the following (rounded up to the nearest inch):
 - i. Edge distance required for lateral resistance
 - ii. One-half of the width or diameter of the pile (for piles widths or diameters 24-inches or larger
 - iii. 9-inches (LRFD 10.7.1.2 minimum offset) + 3-PBESinches (horizontal driving tolerance) + \sum diameters of reinforcing bars for punching shear (horizontal and vertical bars) + 2-inches minimum clearance to pile face
 - b. Develop the main top and bottom reinforcing bars into the perimeter edge region of the footing with 90-degree hooks
- w. All permanent retaining walls shall have a concrete facing. MSE walls shall be limited to a height of 30 ft. Any retaining walls where nominal water depths exist to support waves during the 100-yr storm will require scour/erosion countermeasures (i.e., toe protection and splash apron if applicable) or designed to resist the 100-yr scour.
- x. For fill slopes in front of end bents or abutments, the magnitude of the slope shall not exceed 1V: 2H.
- y. Conduits shall not be mounted to the exterior face of retaining walls or exterior face of structures and must be hidden from view.
- z. Any necessary bridge drainage piping shall be hidden from view.

- aa. For superstructures, if the controlling low member elevation of the superstructure is less than 1-foot above the design wave crest elevation, wave forces shall be calculated and applied according to AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms. For substructures, wave forces shall be calculated and applied according to AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms. The wave vulnerability classification of the bridges shall be **Extremely Critical “Critical/Essential” per section 5.1 of the AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms (Equivalent to “Extremely Critical” per SDG 2.5 commentary).** The "Service Immediate" performance level shall be used with applicable Strength Limit State load factors. A Level III analysis is required to develop wave forces from coastal storms.
- bb. The Design-Build Firm shall design for an environmental classification of extremely aggressive marine structure for the superstructure and substructure for the bridge, for seawalls and for the retaining walls.
- cc. Class 5 coatings, tints, stains, and anti-graffiti coatings shall not be used on the project.
- dd. A custom fender system is required, unless span requirement of SDG 3.14.1.B is satisfied, for the navigation channel for channel delineation per the SDG and to redirect errant barge and other vessel collisions. Per Table 3.14.2-1 of the SDG, a minimum energy of 455 k-ft is associated with Past Point #27 for the Minimum Energy Absorption Capacity (EAC) of the fender system. Standard Plans Index 471-030 will not be permitted as its fender system energy capacity is only 38 k-ft. For flared sections of the fender system, use a pile spacing that is not greater than half of the pie spacing used in the tangent section (not to exceed 8 feet). Use the same size of piles in the flared sections of the fender system as used in the tangent sections. **The maximum allowable deflection for the custom fender system is 10 ft.**
- ee. The Design-Build firm's custom fender system design shall avoid impacts to the subaqueous facilities owned by Gulf Power, AT&T Corporate and Okaloosa Gas District that are to remain in place as depicted in the concept plans and as shown in the Reference Documents.
- ff. SDG 3.14.2.F.1 will be followed when determining the requirements for the design of navigation lighting and clearance gauge details.
- gg. Access ladders will not be required on fender systems. Provide a platform from nearby pier footing to fender system for access. Use hot dip galvanized steel for catwalk structure with polymer decking.
- hh. Pedestrian railing on the bridges shall be aluminum railing only.
- ii. A minimum 10-ft width between parallel bridges will be required to facilitate staged construction as well as for future maintenance and inspection requirements as approved by the FDOT Office of Maintenance. Additional horizontal separation is preferred. The only exception to this is the begin bridge first span where a minimum of 8-ft is required between the bridges.

- jj. All bridge piers and permanent retaining walls must meet clear zone requirements. The Department will not approve the use of permanent barrier wall or guardrail to protect within the clear zone.
- kk. Wildlife connectivity will not be required.
- ll. Lightweight concrete will not be permitted for any structural applications.
- mm. It is not necessary to consider the scour effects on temporary structures.
- nn. Auger-cast piles for bridges are prohibited
- oo. Any channel span unit simple span prestressed girder superstructures made continuous for live load with individual span lengths exceeding 200 ft. must be reviewed by the Department through an ATC.
- pp. **If Standard Plans Index 455-030 (30" Square Prestressed Concrete Pile) or 455-031 (30" Square Prestressed Concrete Pile - High Moment Capacity) piling are proposed, provide venting similar to previous 2015 Design Standard Index Indices 20630 or 20631, respectively.**

Bridge, and MSE wall surface finish requirements:

The Design-Build Firm shall seal the concrete surfaces of the MSE walls, and exposed bridge elements (excluding bridge deck) using an opaque Silicone Acrylic Sealer. **All sides of in-water footers are partially exposed and shall also include an opaque Silicone Acrylic Sealer.** The Design-Build Firm shall develop a TSP subject to Department approval for the sealer. During the design phase, the Design-Build Firm shall also provide to the Department the specific proposed sealer product to be utilized and the plan for utilizing staff qualified for completing the sealer application. The proposed TSP shall include similar information as detailed below:

- Source Limitations
- Certificates of Compliance
- Material List
- Manufacturer's Information
- Approval of Materials
- Pollution Control Plan
- Delivery and Storage

The TSP shall include the surface preparation and application of the sealer and include the following:

- Examination of Surfaces. Before starting any Work, surfaces to receive sealer finish shall be examined carefully for defects which cannot be corrected by the procedures specified below under "Surface Preparation" and which might prevent satisfactory sealing results. Should such conditions be encountered, the Engineer shall be notified immediately so that the extent of the problem and a solution can be identified. Commencing of work shall be construed as acceptance of the surfaces, and thereafter, the Contractor shall be fully responsible for satisfactory work as required herein.
- Field Area "Sample". Provide a full two (2) coat "sample" at the Field Sample Area using type of sealer proposed for use on this Project.

For MSE wall include a minimum of two (2) panels cast and sealed to represent surfaces. Final approval of sealer system and color will be from Field Sample Area.

- Protection. Protect from surface preparation operations and contamination by sealing materials all surfaces not to be sealed. Restore surfaces which are contaminated by sealing materials to their original condition.
- Surface Preparation. All surfaces shall be clean, dry and free of grease, oil, paint, sealers, coatings, etc. prior to application of sealant. Surface preparation shall be performed in accordance with manufacturer's recommendations. Concrete surfaces shall be hydro-silica blasted at the direction of the Engineer as follows:
 1. Hydro-silica blasting shall be capable of pressures in excess of 2500 psi in order to effectively remove all existing applied finishes, sealers, curing compounds, and other surface residues. Dry sandblasting shall not be employed without express written approval of the Engineer.
 2. Prior to blasting, use a manufacturer recommended de-greasing agent if required, following label directions, rinse thoroughly and allow the surface to dry. If mold mildew or fungus are present, kill and remove by cleaning with a solution.
 3. If concrete surface feels like 120-grit sandpaper, the pores are open enough for the sealer to properly bond. If concrete does not have this texture, etch surface with a manufacturer recommended concrete etching solution following label instructions.
 4. Prepared concrete shall have a pH between 7 and 10. If a high pH reading (11-13) is detected, neutralize the surface by acid etching the surface with a manufacturer recommended concrete etching solutions, following label instructions. If after the process the surface pH is high, then notify the Engineer before proceeding with the Work.
- Environmental Conditions. Apply sealer when environmental conditions are within ranges identified by the manufacturer.
- Under no circumstances shall any sealer be applied when the dew point and the temperature are within three (3) degrees C of each other or otherwise when surfaces are wet or contaminated in any way.
- Inspection. Contractor shall arrange to have sealer manufacturer's representative inspect and approve prepared (unsealed) surface and, prior to commencement of initial application and each succeeding coat..
- Application. Two (2) coats of the sealer should be applied on the prepared surfaces following manufacturer's recommendations.
- Cleanup. Clean spills and spatters and tools immediately with a manufacturer recommended solvent. Follow manufacturer's instructions and safety recommendations when using any solvent.

J. Specifications:

Department Specifications may not be modified or revised. Technical Special Provisions shall be written only for items not addressed by Department Specifications, and shall not be used as a means of changing Department Specifications.

The Design-Build Firm shall prepare and submit a signed and sealed Construction Specifications Package for the Project, containing all applicable Division II and III Special Provisions and Supplemental

Specifications from the Specifications Workbook in effect at the time the Bid Price Proposals were due in the District Office, along with any approved Developmental Specifications and Technical Special Provisions, that are not part of this RFP. Any subsequent modifications to the Construction Specifications Package shall be prepared, signed and sealed as a Supplemental Specifications Package. The Specifications Package(s) shall be prepared, signed and sealed by the Design-Build Firm's Engineer of Record who has successfully completed the mandatory Specifications Package Preparations Training.

The website for completing the training is at the following URL address:

<http://www2.dot.state.fl.us/programmanagement/PackagePreparation/TrainingConsultants.aspx>

Specification Workbooks are posted on the Department's website at the following URL address:

<https://fdotewp1.dot.state.fl.us/SpecificationsPackage/Utilities/Membership/login.aspx>

Upon review and approval by the Department, the Construction Specifications Package will be stamped "Released for Construction" and initialed and dated by the Department.

K. Shop Drawings:

The Design-Build Firm shall be responsible for the preparation and approval of Shop Drawings. Shop Drawings shall be in conformance with the FDM. Shop Drawing submittals must be accompanied by sufficient information for adjoining components or areas of work to allow for proper evaluation of the Shop Drawing(s) submitted for review. When required to be submitted to the Department, Shop Drawings shall bear the stamp and signature of the Design-Build Firm's Engineer of Record (EOR), and Specialty Engineer, as appropriate. All "Approved" and "Approved as Noted" Shop Drawings submitted to the Department for review shall also include Engineer of Record QA/QC Shop Drawing check prints along with the EOR stamped set(s). The Department shall review the Shop Drawing(s) to evaluate compliance with Project requirements and provide any findings to the Design-Build Firm. The Department's procedural review of Shop Drawings is to assure that the Design-Build Firm's EOR has approved and signed the drawing, the drawing has been independently reviewed and is in general conformance with the plans. The Department's review is not meant to be a complete and detailed review, but the Department reserves the right to perform a more detailed review, as necessary. Upon review of the Shop Drawing, the Department will initial, date, and stamp the drawing "Released for Construction" or "Released for Construction as Noted".

L. Sequence of Construction:

The Design-Build Firm shall construct the work in a logical manner and with the following objectives as guides:

1. Maintain or improve, to the maximum extent possible, the quality of existing traffic operations, both in terms of flow rate and safety, throughout the duration of the Project.
2. Minimize the number of different Temporary Traffic Control Plan (TTCP) phases, i.e., number of different diversions and detours for a given traffic movement.
3. Take advantage of newly constructed portions of the permanent facility as soon as possible when it is in the best interest of traffic operations and construction activity.
4. Maintain reasonable direct access to adjacent properties at all times, ~~with the exception in areas of limited access Right-of-Way where direct access is not permitted.~~
5. Coordinate with adjacent construction Projects and maintaining agencies.

M. Stormwater Pollution Prevention Plans (SWPPP):

The Design-Build Firm shall prepare a Storm Water Pollution Prevention Plan (SWPPP) as required by the National Pollution Discharge Elimination System (NPDES). The Design-Build Firm shall refer to the Department's Project Development and Environment Manual and Florida Department of Environmental Protection (FDEP) Rule 62-621.300(4)(a) for information in regard to the SWPPP. The SWPPP and the Design-Build Firm's Certification (FDEP Form 62-621.300(4)(b) **NOTICE OF INTENT (NOI) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES**) shall be submitted for Department review and approval. Department approval must be obtained prior to beginning construction activities.

N. Transportation Management Plan:

Design-Build Firm must develop and implement a Transportation Management Plan in accordance with the Department's FDOT Design Manual.

1. Traffic Control Restrictions:

There will be NO LANE CLOSURES allowed on SR 30 (US 98), SR 145, Perry Avenue South, Brooks St, Florida Blanca Place, Santa Rosa Blvd, the new Business Access Road, the new North Connection, the new Eastbound Connection, and the Hotel Entrance Roadway from 5:30 AM to 9:00 PM Monday through Thursday and from 5:30 AM Friday to 9:00 PM Sunday. If Pacing Operations are proposed, they will not be permitted during the times specified above.

The existing number of lanes and length of all auxiliary and turn lanes, shall be maintained at all times, except during the permissible lane closure times detailed ~~within the RFP. below.~~ During permissible lane closure times, a minimum of one lane of traffic in each direction must be maintained along SR 30 (US 98), Santa Rosa Blvd., and SR 145 at all times. Lane closure restrictions apply to all lanes including auxiliary lanes and turn lanes.

A lane may only be closed during active work periods. All requests for lane closures shall be submitted in writing to the Department 14 calendar days prior to a closure, detour, diversion, or MOT phase change. All lane closures must be reported to the local emergency agencies, the media, and the District 3 Public Information Officer a minimum of 12 calendar days prior to each closure.

~~No lane closures are allowed on the Project during the Special Events days previously listed in this RFP in order to minimize potential impacts to the events.~~

It is anticipated that Brooks St. will have to be closed temporarily within the limits of the realignment. The Design-Build Firm must maintain access to all properties at all times via an approved detour route. Closure shall be limited to no more than seven (7) total days. All remaining side roads, business access, and driveways shall remain open at all times. Side roads can NOT be closed unless approval from the District Secretary and approval from any applicable local government is obtained.

All detours shall be included in the Transportation Management Plan and approved by the Department. The Design-Build Firm shall obtain written approval from local agencies for detours that utilize or otherwise impact roadways that are under the jurisdiction of those local agencies.

During all phases and all times of construction, minimum lane widths shall be 10-feet.

Should the Design-Build Firm elect to use the existing roadway shoulders for temporary traffic control on a temporary basis, the Design-Build Firm shall modify the existing cross slope to match the adjacent lane. The Design-Build Firm shall be responsible for providing the required structural integrity and maintenance of the shoulder. When no longer needed for temporary traffic control, the Design-Build Firm shall restore the shoulder to the required width and cross slope.

There will be no pavement marking eradication permitted after the final asphalt course is placed. For any existing asphalt roadways where eradication of temporary or permanent striping is required to accommodate lane shifts or diversions, a full width overlay or full width milling, and resurfacing of the travelled way shall be the only acceptable means of pavement marking eradication.

Temporary detection for all movements at all signalized intersections shall be maintained throughout construction. Temporary detection shall detect only the appropriate approach lane for the associated phase. **Overhead trailer mounted traffic signals shall not be utilized.**

SR 30 (US 98) is a designated Hurricane Evacuation Route. All lanes within the project limits must be open for traffic within 12 hours of a hurricane evacuation notice or other catastrophic event and shall remain open for the duration for the event as directed by the Engineer.

NO LANE CLOSURES are allowed on the Project during the Special Events listed within the RFP.

Special consideration shall be given to the drainage system when developing the construction phases. Positive drainage must be maintained at all times and shall NOT adversely impact adjacent properties. Provide temporary facilities to ensure turbid water and silt are not transported to existing drainage systems and/or Santa Rosa Sound.

The Transportation Management Plan shall be prepared by a certified designer who has completed the Department's Advanced Maintenance of Traffic training course, and in accordance with the Department's Standards Plans and the FDOT Design Manual.

The existing bridge has an existing lighting system and requires temporary lighting to be provided during the construction including navigational lighting. The Design-Build Firm is responsible for maintaining the existing navigational lighting until the permanent new navigational lighting is installed and operational.

Pedestrian and Bicycle Access During Construction:

If the Design-Build Firm allows work areas to encroach upon a trail, sidewalk, or intersection cross walk, a minimum clear width of 4 feet must be maintained for public use. If the required clear width cannot be met, the Design-Build Firm shall provide an alternative accessible route. Pedestrian and bike facilities shall be maintained and shall conform to ADA requirements. The existing bridge curb shall be maintained for pedestrian access in the temporary traffic control condition. Asphalt millings are not allowed for temporary sidewalk.

Business Access:

The Design-Build Firm's Transportation Management Plan shall maintain access to all business.

Emergency Services:

The Design-Build Firm shall coordinate with and ensure that the temporary traffic control plans will not adversely impact emergency responder operations.

Navigation:

Boating access shall be maintained for marine traffic. The Design-Build Firm shall make use of the USCG Notice to Mariners and all information contained within the USCG Bridge Permit to communicate the location and details for navigating through the project area.

O. Environmental Services/Permits/Mitigation:

The Design-Build Firm will be responsible for preparing designs and proposing construction methods that are permissible. The Design-Build Firm will be responsible for any required permit fees including public notice fees. All permits required for a particular construction activity will be acquired prior to commencing the particular construction activity. Delays due to incomplete or erroneous permit application packages, agency rejection, agency denials, agency processing time, or any permit violations, except as provided herein, will be the responsibility of the Design-Build Firm, and will not be considered sufficient reason for a time extension or additional compensation. As the permittee, the Department is responsible for reviewing, approving, and signing the permit application package including all permit modifications, or subsequent permit applications.

The following outlines the commitments from the EA with FONSI and Re-Evaluation and describes the responsibilities of the Design Build Firm (see also Section V.D.) and the Department in order to ensure fulfillment of the commitments.

- 1) A Section 4(f) Determination of Applicability is required for archaeological site 8OK00780. It was unable to be completed in the PD&E phase due to the extent of hardscape and disturbance in the area of the proposed project. Consultation with State Historic Preservation Officer resulted a concurrence determination that the site is not eligible for listing in the National Register of Historic Places. However, due to past archaeological discoveries in this area, FDOT will conduct appropriate archaeological research in areas where ground disturbance associated with the proposed bridge project will occur once FDOT has identified and purchased these areas. In accordance with the FDOT and SHPO concurrence determination of July 27, 2016, should any discoveries occur which may alter the significance determination made on the Alconese Site in accordance with 36 CFR Part 800.4(c) and which may cause an adverse effect to the site in accordance with 36 CFR Part 800.5(a), FDOT will determine if the site qualifies for protection under Section 4(f) and proceed as appropriate in consultation with the SHPO and, as appropriate, the Seminole Tribal Historic Preservation officer and other Native American tribal officials. *This commitment has been completed by the Department.*
- 2) FDOT owns the 0.58 ac parcel 24-2S-24-1070-0000-0040 as transportation right-of-way, leased by the City of Fort Walton Beach for public parking lot including landscaping, lighting, sidewalk, public boardwalk, and water management. During construction, the lease may be suspended. Access to the park is not required to be maintained during construction. Following construction, FDOT will renegotiate the lease agreement and park amenities with the City of Fort Walton Beach. The park currently includes 44 public parking spaces, including handicap, motorcycle and bicycle parking; sidewalk as part of the Fort Walton Beach Boardwalk; shoreline stabilization; benches and picnic tables; lighting; landscaping; and a kayak/canoe launch. Negotiations will be completed by the Department. *The Design Build Firm will construct park to preexisting conditions following construction activities within the limits of or adjacent to the park.*

- 3) During construction, the City of Fort Walton Beach Fishing Park (Alconese Avenue Pier) would be temporarily closed to public use for safety reasons. Following construction, the park would be returned to public use, and the park amenities (pier, lighting, bench, trash can, and shoreline stabilization) would be returned to at least pre-construction conditions in coordination with the City of Fort Walton Beach. *The Design Build Firm will construct park to at least preexisting conditions following construction activities within the limits of or adjacent to the park.*
- 4) Except as required for safety, access along the Florida Circumnavigational Saltwater Paddling Trail shall be maintained during construction. Temporary closures shall require notification as coordinated with the Florida Department of Environmental Protection, Office of Greenways and Trails. *This commitment to be completed by the Design-Build Firm.*
- 5) A Special Use Permit shall be obtained from the National Park Service for the new Brooks Bridge and S.R. 30 (U.S. 98) right-of-way over the Gulf Islands National Seashore and for new bridge piles within waters of the Gulf Islands National Seashore. *This commitment to be completed by the Department.*
- 6) Coordination *by the Design-Build Firm* is required with the Okaloosa County Public Works Director during the design phase regarding access to Little Ross Marler, Ross Marler and Veteran's Parks.
- 7) Additional archaeological testing is required once the footprint for proposed construction is further defined. A research design must be developed in consultation with the State Historic Preservation Officer and the Seminole Tribe of Florida Tribal Historic Preservation Officer to prepare a testing strategy for 8OK00780. Construction monitoring by a qualified archaeologist is required. *Testing has been completed. Monitoring to be conducted by Department. The Design Build Firm shall notify the Department at least 14 days prior to ground disturbing activity within 8OK00780, and coordinate times and access for the Department's monitoring.*
- 8) Contractor shall follow the NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions (March 2006).
- 9) Contractor shall follow the Construction Special Provisions, Sturgeon Protection Guidelines (Pursuant to NMFS and FWS), September 2012.
- 10) Nocturnal in-water work is not allowed during the sturgeon migratory period which is from the first of October through the end of May. This measure provides a nightly period without noise-inducing activities and allows fish to move through the area without acoustic disturbance. Nighttime is defined as 30 minutes after sunset to 30 minutes before sunrise. This commitment applies to all pile driving including temporary work trestles. *This commitment to be completed by the Design-Build Firm.*
- 11) A noise monitoring plan shall be developed and submitted *by the Department* to FWS for approval prior to construction to collect hydroacoustical data from a representative set of test piles. Data collected will be used to verify the extent of potential noise impacts and, if necessary, refine the recommended conservation measures. The FDOT Office of Environmental Management is working toward a statewide noise monitoring/data

- collection study. The contractor shall cooperate with the University of North Florida or other Department approved staff that are collecting data if this bridge is included in the study.
- 12) A noise management plan shall be developed and submitted *by the Design- Build Firm* to FWS for approval prior to construction that demonstrates how underwater pile driving noise will be managed with the goal of minimizing behavioral disturbance and injury threshold to marine species. The noise management plan shall give consideration to use of bubble curtains or other measures of noise attenuation, and use of a ramp-up procedure during pile driving. This gradual increase in noise level gives species time to leave the impact area prior to initiation of full noise levels.
 - 13) Mooring work barges or vessels shall maintain at least 1.5-ft clearance above the water body bottom to allow sturgeon passage and to minimize potential disturbance to bottom sediments. No mooring is allowed over areas of submerged aquatic vegetation. *This commitment to be completed by the Design-Build Firm.*
 - 14) In order to provide a net conservation benefit to the sturgeon, consistent with the FWS Mitigation Policy, *the Department* will purchase 30 Vemco® sonic transmitters (estimated at \$350 each), 10 Vemco® receivers (estimated at \$1,480 each), one Vemco® omnidirectional hydrophone (estimated at \$6,590), and 20 batteries (estimated at \$50 each), to be used by FWS for a study on the effects of pile driving sound on Gulf sturgeon migratory behavior concurrent with the proposed action.
 - 15) An erosion and sediment control plan will be submitted *by the Design-Build Firm* and approved by the Service at least 60 days prior to the start of construction to assure that potential impacts to Gulf Sturgeon habitat from sedimentation and turbidity are avoided and minimized to the extent practicable. The Service will be contacted immediately if failures occur in erosion and sediment control measures occur. [Biological Opinion, Reasonable and Prudent Measure 1.1]. *The Service is defined as U.S. Fish and Wildlife Service (FWS).*
 - 16) The off-site stormwater compensatory treatment area will be coordinated with the Service for review and approval as plans become available. [Biological Opinion, Reasonable and Prudent Measure 1.2] *This commitment to be completed by the Design-Build Firm.*
 - 17) Any demolition that involves blasting will be coordinated with the Service for review and approval as plans become available. [Biological Opinion, Reasonable and Prudent Measure 1.3]. If blasting is required for demolition of existing structures, a blast plan and marine species watch plan shall be developed and submitted to FWS, NMFS, and FWC for approval. *This commitment to be completed by the Design-Build Firm.*
 - 18) If a need arises to develop off site staging areas for construction, location and erosion control measures for these sites will be coordinated with the Service for review and approval as plans become available. [Biological Opinion, Reasonable and Prudent Measure 1.4] *This commitment to be completed by the Design-Build Firm. Coordination with the Service shall be through the Department.*
 - 19) The location of temporary work trestles and barge mooring will be coordinated with the Service for review and approval as plans become available. This is to ensure that in-water

structures will not block the narrow channel width at the bridge and allow adequate space for migratory movements. [Biological Opinion, Reasonable and Prudent Measure 1.5] *This commitment to be completed by the Design-Build Firm.*

- 20) Field reviews will be conducted by *the Department* and the Service within 30 days of anticipated project completion, and within 30 days of completing construction to determine if site restoration is needed. [Biological Opinion, Reasonable and Prudent Measure 1.6].
- 21) The zone of impacts from elevated underwater sound levels that cause behavioral disturbance (150 dB RMS) will not extend greater than 1,037-ft from pile driving operations. Given recent exceedance of this sound threshold in test pile monitoring on Pensacola Bay Bridge test piles, adequate demonstration of ability to control sound levels below this threshold using attenuation methods will be necessary. If the zone of impacts is exceeded, then formal consultation should be reinitiated. The underwater sound management plan and in-situ hydroacoustic sound monitoring of test piles (2.2 and 2.3 below) will be required to verify the zone of impacts that is the basis for this BO. [Biological Opinion, Reasonable and Prudent Measure 2.1] *The Design Build Firm will be responsible for developing and abiding by requirements of the Sound Management Plan. The Department will be responsible for monitoring. Any additional formal consultation shall be through the Department.*
- 22) The underwater sound management plan will be submitted to the Service for review at least 60 days prior to the onset of construction. The plan will provide the final design for pile size, installation method, and timing for pile installation. This will include the measures proposed to mitigate underwater noise such as bubble curtains, temporary noise attenuation piles, air filled fabric barriers, isolated piles or cofferdams, or double-walled piles. [Biological Opinion, Reasonable and Prudent Measure 2.2] *This commitment to be completed by the Design-Build Firm.*
- 23) In-situ hydroacoustic sound monitoring of pile driving will be done during test piling to accurately determine sound levels based on materials, equipment, substrate, and method of pile installation. This assessment will be done on a representative sample of test piles located proximate to the project site, in an area most conducive to sound production, and at 10 meters from the pile. Any change in pile materials and/or installation methodology will require a re-assessment of sound levels. The acoustic monitoring results will be provided to the Service for review. [Biological Opinion, Reasonable and Prudent Measure 2.3] *Acoustic Monitoring to be provided by the Department.*
- 24) The study area will be routinely monitored *by the Department* for the presence of stunned, injured, or dead sturgeons (indicators of take). A plan will be developed to establish the methods, frequency, and reporting requirements for monitoring. The monitoring plan will be coordinated and approved by the Service prior to construction. [Biological Opinion, Reasonable and Prudent Measure 2.4] *This commitment to be completed by the Department.*
- 25) When engineering limits do not require impact driving, piles shall be advanced by vibration, oscillation, rotation, or pressing. [Biological Opinion, Reasonable and Prudent Measure 2.5] A ramp-up procedure is required each day for pile driving operations to give animals an opportunity to leave the area as noise levels increase. *This commitment to be completed by the Design-Build Firm.*

- 26) New technologies to better mitigate underwater sound levels from pile driving will be considered during the design. Specifically, consideration should be given to breakthrough approaches, such as doublewalled piles or mandrel-driven double-walled piles, as an alternative to using less-effective bubble curtains. [Biological Opinion, Reasonable and Prudent Measure 2.6] *This commitment to be completed by the Design-Build Firm.*
- 27) Upon locating a dead, injured, or sick individual of an endangered or threatened species, *the Design-Build Firm shall notify the Fish and Wildlife Service Law Enforcement Office, Groveland, Florida at (352) 429-1037 within 24 hours. The Design Build Firm will provide additional notification to the Fish and Wildlife Service's Field Office at Panama City, Florida at (850) 769-0552 within 48 hours. Care should be taken by the Design-Build Firm in coordination with the CEI, in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury. [Biological Opinion, Reasonable and Prudent Measure 3.1]*
- 28) A report describing the actions taken to implement the terms and conditions of this incidental take statement shall be submitted to the Project Leader, U.S. Fish and Wildlife Service, 1601 Balboa Avenue, Panama City, Florida, 32405, within 60 days of the completion of construction. This report shall include the dates of work, assessment and actions taken to address impacts to the Gulf Sturgeon, if they occurred. [Biological Opinion, Reasonable and Prudent Measure 3.2] *This commitment to be completed by the Department.*
- 29) *The Design Build-Firm shall coordinate with the FWS and FWC during the bridge design phase to incorporate lighting which meets both traffic safety needs and enhanced protection for sea turtles. If permanent exterior light fixtures associated with the bridge will be used during marine turtle nesting season (May 1 – October 31), all fixtures should minimize light contribution to urban sky glow which could be visible from the marine turtle nesting beach. Possible recommendations may include the use of downward directed, full-cutoff, well-shielded fixtures with low pressure sodium or warm white ($\leq 3000\text{K}$) light-emitting diode (LED) lamps that allow no emission of light above the horizontal plane of the fixture.*
- 30) Contractor shall follow the Florida Fish and Wildlife Conservation Commission's Manatee and Sea Turtle Construction Conditions for In-Water Work Associated with Florida Department of Transportation Projects, [2012].
- 31) Under statute 581.185, the Florida Fish and Wildlife Conservation Commission (FWC), FDACS and Endangered Plant Advisory Council will be notified that FDOT as owner is allowing for salvaging by others of the state-listed Cruise's and Godfrey's goldenaster prior to construction in accordance with state law (Chapter 581.185, Florida Statutes). *This commitment to be completed by the Department. The Design-Build Firm shall provide access for salvage authorized by the Department*
- 32) Submerged Aquatic Vegetation and Essential Fish Habitat mitigation will be developed as part of the permitting process which will be completed in the design phase of the project. When final seagrass and salt marsh impacts are determined, compensatory mitigation for those impacts shall be reviewed and approved by NMFS in order to complete the NMFS Essential Fish Habitat consultation. Follow-up coordination was completed with NMFS on October 24, 2017 regarding mitigation for SAV. Impacts to SAV are anticipated to be

minimal (approximately 200-sf). NMFS expressed a willingness to coordinate with the NFWFMD to incorporate SAV impact mitigation into the overall wetland mitigation strategy. In addition, the National Park Service Gulf Islands National Seashore (GUIS) Superintendent requested on November 27, 2018: If submerged aquatic vegetation (SAV) impacts or proposed mitigation change or are to occur within park waters, GUIS requests additional coordination and document review. *The Department will handle the Mitigation for wetland impacts shown in Concept Plans. Additional impacts created by modification to the Concept Plans shall be handled as defined within the RFP.*

- 33) Stormwater and drainage plans shall be reviewed and approved by NMFS and FWS to assess water quality impacts due to stormwater coming off of the new bridges (whether that compensatory mitigation is on-site or off-site). *Coordination and plan submittal by Design-Build Firm.*
- 34) Bridge construction and demolition will require the use of barges and potentially a temporary work trestle. All practicable efforts will be made to avoid barge spudding and temporary work trestle placement over seagrass beds. *The Design-Build Firm will explore ways to avoid and minimize impacts to the maximum extent practicable during final design and permitting through FDEP and USACE. Note to Design-Build Firm: Permits applicable to this commitment are the FDEP ERP and State 404 Permits.*
- 35) The horizontal navigational clearance (clear space between the fendering systems) shall be increased to 150-ft.
- 36) Vertical air draft shall be raised to 65-ft above the MHW elevation to be consistent with Gulf Intracoastal Waterway (GIWW) recommendations.
- 37) A Waterways Management Plan is required to define maintenance of vessel traffic on the Gulf Intracoastal Waterway (GIWW) during construction and demolition. *The Design-Build Firm is responsible for development and implementation of the plan.*
- 38) An archeologist is required to monitor the Alconese Site (8OK00780) and the O'Neal Site (8OK01780) during earth disturbing activities. The Alconese Site is located to the east of Brooks Street from STA. 140+20 to STA. 143+20 and north of US 98 from STA. 112+00 to STA. 114+60. The O'Neal Site is located to the south of Brooks Street from STA. 130+00 to STA. 135+80. The archeologist will be provided by the CEI and will be responsible for stopping work on-site if artifacts or remains are exposed. The Cultural Resource Coordinator will be notified at the DEMO office if work is stopped. The archeologist will provide a monitoring report at the completion of the project to the Cultural Resource Coordinator.

Contamination assessments have been completed for asbestos and paint coatings on the existing bridge. The reports are included as Attachments in this RFP. The Design-Build Firm is responsible for reviewing the results of these reports and complying with the recommended actions. Mercury and/or PCBs may be present in the existing light bulbs and/or light ballasts. Sampling and testing of these items will be conducted by the Department when the Design-Build Firm begins removing the lighting. The Design-Build Firm is responsible for coordinating with the District Contamination Impacts Coordinator to scheduling the sampling activities. This coordination shall begin at a minimum one (1) month prior to removing the existing lighting.

P. Signing and Pavement Marking Plans:

The Design-Build Firm shall prepare signing and pavement marking plans in accordance with Department criteria.

A Conceptual Signing and Pavement Marking Plan has been provided by the Department (Reference Document - Concept Plans) identifying sign locations and legends within the Project limits. No structural analysis was performed for the Conceptual Signing Plan.

The Design-Build Firm shall be responsible for the design of all new sign supports (posts, overhead span, overhead cantilever, bridge mount, concrete barrier wall mounted, and any applicable foundations). The Design-Build Firm shall show all details (anchor bolt size, bolt circle, bolt length, etc.) as well as all design assumptions (wind loads, support reactions, etc.) used in the analysis. Mounting types for various signs shall not be changed by the Design-Build Firm (i.e. if the proposed or existing sign is shown as overhead it shall be overhead and not changed to ground mount) unless approved by the Department. Any existing sign structure to be removed shall not be relocated and reused, unless approved by the Department.

The regulatory, warning and roundabout signing shall not encroach into the shoulder space. No part of the assembly (sign panel or mount) shall encroach into the required vertical and horizontal clearances of the respective travel and shoulder areas.

Advance street name signs shall be provided for all approaches to the signalized intersections in conformance with the Traffic Engineering Manual.

All approaches to the roundabouts shall include the signing as required in the MUTCD. Sign cross sections are required for all new guide sign assemblies (overhead truss, single column bridge barrier wall, multi-column roadside ground mounts).

~~The Design-Build Firm shall include the design and construction of an overhead cantilever sign structure on US 98 eastbound supporting a flashing beacon warning sign alerting the motorists of the occasional formation of queuing created by the traffic signal at the intersection of US 98 and Eastbound Connection. This sign shall be hardwired to the signal controller for activation. Additional vehicular queue detection using induction loops shall be provided on US 98 eastbound travel lanes at the location determined by the Design-Build Firm. The overhead cantilever sign shall be located to provide sufficient warning distance and time equal to the stopping sight distance.~~

Special emphasis crosswalks shall be provided at the roundabouts, and at signalized intersections. Crosswalks shall be 10-feet wide and stripes shall be positioned so they are parallel to the wheel path.

All existing signing (including regulatory, warning, guide, or other) within the Project Limits, or as affected by the Project, must be similarly maintained in accordance with MUTCD requirements. Any signs that conflict with traffic patterns shall be covered with an opaque material until such a time where the signs are no longer in conflict with the traffic patterns.

The following signage must be retained during all phases of construction, in the general location that it was in prior to the initiation of construction:

- 511 signing
- Emergency management (hurricane) shelter and hurricane evacuation signing

It shall be the Design-Build Firm's responsibility to field inventory and show all existing signs within the Project limits and address all signage within the Project limits. Existing single and multi-post sign assemblies impacted by construction shall be entirely replaced and upgraded to meet current standards. Existing sign assemblies not impacted by construction can remain.

Q. Lighting Plans:

The Design-Build Firm shall provide a lighting design and a lighting analysis, and prepare lighting plans in accordance with Department criteria.

The Design-Build Firm shall develop and submit for approval, the Lighting Control Panel Board comprised of Main Circuit Breaker, Branch Circuit Breaker /Pole Number identification plan that is compatible with the existing lighting systems maintenance identification scheme for each light control center.

The roadway lighting design shall follow the Lighting Design Criteria outlined in the FDOT Design Manual. The intersection lighting and the proposed roundabout lighting shall follow the FDOT Design Manual.

Where existing roadway lighting system had been installed by the local power company, the Design-Build Firm shall coordinate with the power company for the removal of the existing overhead power fed lighting system when providing the permanent lighting.

Where existing roadway lighting circuit sources (services, load centers, etc.) are being removed, the Design-Build Firm shall:

1. Provide new lighting control center per current National Electrical Code (NEC) and all applicable criteria.

All modified load centers shall comply with all applicable criteria and shall be in like new condition. Existing light poles, luminaire arms, luminaires, and load centers identified for removal shall be coordinated with the Maintaining Agency as to whether these features will become the property of Design-Build Firm or salvaged, transported, and delivered to the Maintaining Agency for future use.

The Design-Build Firm shall perform detailed field reviews. Review and document all lighting (poles/luminaires, sign luminaires, etc.), circuiting, load centers, service points, utility transformers, etc., within the limits of lighting construction. This review includes: conductors, conduit, grounding, enclosures, voltages, mounting heights, pull boxes, etc. This review also includes circuits outside the limits of lighting construction that originate or touch this Project's scope of work, and include the electrical loads in the design of the proposed new lighting control centers in this project limits.

All deficiencies within the limits of lighting construction shall be identified and corrected. Any deficiencies outside the limits of lighting construction shall be brought to the attention of the Department.

After the field reviews are completed, a list of all damaged and/or non-functioning equipment shall be documented and forwarded to the Department prior to the start of construction. All damaged and/or non-functioning equipment within the limits of lighting construction are required to be replaced or repaired to meet all applicable criteria and shall be in like-new condition.

Where new electrical services are required, the Design-Build Firm shall coordinate final locations of distribution transformers and service poles to minimize service and branch circuit conductors and conduit lengths. Preliminary electrical service locations shall be coordinated with the local power company, and power service information and letter of available fault current (Kilo Amp Interrupting Current, KAIC

rating) at the location where local power company will be supplying the power service shall be obtained and be submitted as part of the PDAR and be included in LDAR. Each service point shall be separately metered.

The Design-Build Firm shall comply with the requirements of each jurisdictional authority within the Project limits. Compliance with the jurisdictional authority includes, but is not limited to, field reviews, technical meetings, special deliverables, etc. It is the Design-build Firm's responsibility to verify and comply with all jurisdictional authority's requirements with respect to the power service points. The Design-Build Firm shall provide separate meter, safety disconnect, and service poles for each maintenance jurisdiction.

Lighting installed by the Design-Build Firm shall be of the full cut-off type, with shields and gooseneck arms provided with a LED lamp, and comply with the Commitments.

The conduit for lighting shall not be used for other purposes such as ITS. The Design-Build Firm shall provide a conduit run consistent with National Electric Code within the bridge parapets on bridge to accommodate lighting conductors. No overhead conductors will be allowed for the final lighting system. Lighting pull boxes will not be permitted in paved roadways. No pull boxes are permitted within the designated roadway shoulder, paved or unpaved. No surface mounted conduits shall be placed on the visible exterior surfaces of any structure. Surface mounted lighting or ITS conduits on bridge between interior beam bays and along the piers are not allowed.

The Design-Build Firm shall design and construct the underdeck lighting for the portions of the project where US 98 is elevated at Santa Rosa Blvd. and at Brooks Street.

Navigational Lighting Requirements

Navigational Lighting for the Channel Margin Navigation Lights shall be designed for use as a marine signal light for marking channel margin, per U.S. Coast Guard Bridge Administration General Construction Requirements, CFR 33 Part 118. The housing shall be in compliance with the FDOT Standard Specifications for Road and Bridge Construction Section 510.

All clearance gauges must indicate the vertical distance between **"low-steel" low member** of the bridge channel span and the level of the water, measured to the bottom of the foot marks, read from top to bottom. Each gauge must be installed on the end of the right channel pier or pier protection structure facing approaching vessels and extend to a reasonable height above high water so as to be meaningful to the viewer.

The Design-Build Firm shall design, furnish and install a new navigational lighting system to replace existing navigational red lights and new gauge lights on the side of the fender system and the center channel navigational green light on the side of the bridges with a complete new navigational lighting system including but not limited to LED navigational lights, power source, service point/load center, raceway system and conductors. The Design-Build Firm shall provide for complete fender system and clearance gauge lighting detail as required per U.S. Coast Guard permit.

Design shall provide ready access for lamp service.

Lens section shall be 180 degrees red. Lamp shall be 120 VAC, medium base LED with a rated life of 100,000 hours (over 11 years of operation when burned 24 hours per day), and shock and vibration resistant.

Overall luminosity of the LED array shall be 840 candelas for both red and green arrays (similar visibility to a 75W incandescent lamp). Beam viewing angle shall be 22 degrees for red and 20 degrees for green.

Lamp color shall match the color of the fixture lens for maximum light output. Red LEDs shall have a wavelength of 630 nm. Green ("marine" green or blue-green) LEDs shall have a wavelength of 510-515 nm.

Lamp mounting shall center the array on the focal plane of the lens. Receptacles shall be mounted on a bracket, which shall be isolated from the navigation light fixture with rubber grommets to minimize shock and vibration. Mounting bracket shall position the center of the lamp at the focal plane of the fixture lens for optimal light transmission.

A manual locking device shall hold the light securely in normal operating and service positions and shall be capable of accepting a padlock.

A cast junction box with gasketed access cover shall be provided where specified in the plans. Junction box shall be of the same material as the fixture assembly and shall match the navigation light base footprint. Orientation of junction box shall be capable of rotation in 90-degree increments.

The Center Channel Navigation Lights shall be designed for use as marine signal lights for marking center of channel, per U.S. Coast Guard Bridge Administration General Construction Requirements and be similar to the Channel Margin Lights described above except that the lens section is 360 degrees green.

The navigational lighting will be maintained by the Department upon final acceptance.

The utilization of solar power for the navigational lighting system is not allowed.

The Design-Build Firm shall be responsible ~~to for maintaining the existing navigational lighting system until the new system is operational and~~ demolish and dispose of the existing navigational lighting system. ~~and maintaining the existing navigational lighting system until the new system is operational.~~

R. Signalization and Intelligent Transportation System Plans:

1. General

The Design-Build Firm shall prepare Signalization and Intelligent Transportation Plans in accordance with Department criteria.

All signal heads shall be mounted horizontally. ~~Internally illuminated street name signs with LED source of lighting shall be provided for all approaches of the signalized intersections. All mast arm poles shall be painted using the Federal Color Code currently established by the Okaloosa County.~~

The Design-Build Firm shall prepare design plans and provide necessary documentation for the procurement and installation of the Signalization and Intelligent Transportation System devices as well as

overall system construction and integration. The construction plan sheets shall be in accordance with Department requirements and include, but not be limited to:

- Project Layout / Overview sheets outlying the locations of field elements
- Communication Overview outlying the begin and termination of the fiber optic communication cables, proposed splice and pull boxes, local hubs, and devices on the straight line diagram.
- Detail sheets on:
 - CCTV structure, CCTV attachment, CCTV operation/layout
 - Road Weather Information System (RWIS)
 - Fiber optic splice and conduit
 - Power Service Distribution
 - Wiring and connection details
 - Conduit, pull box, and vault installation
 - Directional Bore Details
 - Overall Power Service Distribution diagram
 - Device and Facility Access Plans For All Stage Of Construction and As-Built Condition
 - Communication Hub and Field Cabinets
 - System-level block diagrams
 - Device-level block diagrams
 - Field hub/router cabinet configuration details
 - Fiber optic Splicing Diagrams
 - System configuration/Wiring diagram/Equipment Interface for field equipment at individual locations and communications hubs.
 - Maintenance of Communications (MOC) Plan

Anticipated CCTV cameras and RWIS for the Bridge area:

ITS Devices	Approximate Location	Direction	Notes
CCTV Cameras	Both sides of the bridge approach and departures including bridge proper coverage	Both Directions	Fiber Optic-based communication and connection to Okaloosa TOC
RWIS	<u>Mounted on the bridge structure or on On</u> one side of the bridge where weather and visibility information can be detected	Suitable Location to be determined <u>by the Design-Build Firm</u> and approved by the DEPARTMENT	Fiber Optic-based communication and connection to Okaloosa TOC and FDOT Chipley RTMC

CCTV cameras and RWIS site shall not co-locate on the same pole.

The Design-Build firm is responsible for ensuring project compliance with the Regional ITS Architecture and FDOT ITS Topic 750-040-003-c, Systems Engineering and ITS Architecture Procedure as applicable. This includes, but is not limited to, the development or update of a concept of operations, the development or update of a system engineering master plan (SEMP), and requirement traceability verification (RTVM) as well as coordination of document review.

The Design-Build Firm shall detail existing Signalization and Intelligent Transportation System equipment and report which devices will be removed, replaced, or impacted by project work.

2. Design and Engineering Services:

The Design-Build Firm shall be responsible for all Signalization and ITS design and engineering services relating to the Project. All ITS system components shall be new unless otherwise identified for relocation.

Mounting, or integrating of ITS, traffic and signalization components to existing or new light poles, lighting structures, sign structures, etc. will not be allowed. Do not mix underground, traffic railing conduits for ITS, signalization and lighting infrastructure. The Design-Build Firm shall design and implement the Project to keep the Department's standard Traffic Signal Maintenance and Compensation Agreement in good standing.

At a minimum, the signal work in this project shall consist of the following major components:

- The Design-Build Firm shall design, furnish, install, integrate and test traffic signals, detection and proposed CCTV cameras.
- The Design-Build Firm shall prepare Signalization Plans in accordance with all applicable standards and Department criteria. In addition, the Design-Build Firm shall incorporate all aspects of the District 3 Signalization General Notes that can be obtained from the District Design Office.
- The Design-Build Firm is required to provide all data collection and analysis for the signalized intersection designs and any specific maintenance of traffic needs.
- Temporary signal(s) shall be designed, installed and maintained at the Design-Build Firm's discretion and as directed by the Department anytime during the course of the project.
- Detection at existing, and temporary signals shall be established and maintained by the Design-Build Firm throughout the duration of the project with no lapse in operation of the detection greater than District 3 TSM&O manager and/or Okaloosa County Traffic Engineer approved hours. Temporary detection shall be accomplished by use of rigidly mounted video, microwave, and/or induction loops at the Design-Build Firm's discretion.
- Timing and phasing plans shall be developed and maintained by the Design-Build Firm for maintenance of traffic throughout the duration of the project in consideration of prevailing traffic conditions. It is anticipated that multiple timing plans will need to operate on a time-of-day basis to accommodate differing traffic conditions during AM peak, PM peak, off-peak, night-time, and weekend periods. In addition to interim timing plans developed and maintained during the construction operation, the Design-Build Firm shall establish a permanent set of timing plans, time-of-day settings, and day-of-week settings that are to remain in the traffic signal equipment at the conclusion of the construction project. The permanent timings discussed above are to be summarized and documented in a signed and sealed report to the department for review and approval.
- All traffic signal controllers provided shall be advance traffic controllers inside advance traffic controller cabinets at each intersection. The traffic control cabinet associated peripheral equipment, and electrical power service assembly shall be strategically located in a protected area not

vulnerable to damage by vehicular impact. Install Ethernet-based Blue TOAD at each signalized intersection collocated on the proposed mast arm upright and connected to traffic signal controller.

The design of the new system shall integrate with the existing devices. The design shall include the necessary infrastructure and components to ensure proper connection of the new ITS components. This shall include but not be limited to all proposed ITS components of this project as well as existing sub-systems that remain or are re-deployed as the final project.

At a minimum, the ITS work in this project consists of the following major components:

- Replacement of any ITS System components that are impacted by the Design-Build Firm's scope of work as approved by the Department. All equipment shall be new unless otherwise specified.
- CCTV – Includes concrete poles, camera lowering devices and mountings to provide 100% CCTV coverage of the project corridor.
- RWIS shall include ~~the level concrete pad for the entire system inside a type B fence enclosure. It shall include~~ the power service, communication splice box, electrical pull box, concrete strain pole to support the RWIS components, RPU enclosure, ITS cabinet, atmospheric sensor, WIVIS sensor, wind speed and direction sensor, grounding, UPS, RPMU, AC Power, RWIS power supply, and it shall support all Object Identifiers (OIDs) defined by the NTCIP Standard for the RWIS, SNMP framework, Ultra Mobile Technology (UMB) sensor data over Internet Protocol (IP), as well as USB and Ethernet interfaces, attachment brackets, system-wide surge protection devices for a full autonomous RWIS assembly. The RWIS can be located on the ground or mounted on the bridge. If on the ground, the RWIS shall be located at a suitable site within FDOT right-of-way adjacent to Santa Rosa Sound. The RWIS site shall be in a suitable spot without any trees, structure, or other objects that could disrupt the functionality of the system., and include a level concrete pad inside a Type B fence enclosure. If located on the bridge, the pole, sensors and pull boxes must be installed at a dedicated location not shared with other systems such as CCTV or lighting, mounted on a bridge CIP pedestal constructed and incorporate a galvanized steel maintenance platform. The maintenance platform shall be of sufficient size to allow access on three sides of the RWIS system with minimum clear space of 3 ft on each side, and include a handrail on all three sides. The location of the RWIS and design of the maintenance platform is subject to approval by the DEPARTMENT.
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- Removal of any ITS System components that are impacted by the Design-Build Firms scope of work as approved by the Department.
- Testing of fiber optic backbone and lateral drops furnished and or installed or modified by the Design-Build Firm.
- End-to-End Testing of the installed Intelligent Transportation System.

The Design-Build Firm shall coordinate to avoid conflicts with landscape plans within the Department Right-of-Way. While procedures are being revised to facilitate this increased collaboration and cooperation, the Design-Build Firm is required to ensure that the design and construction of each ITS project and each landscape project is entirely coordinated with existing and proposed ITS facilities and landscapes. Both programs have been determined to be important components of the state transportation system.

Smart Work Zone (SWZ)

The Design-Build firm shall design, construct, operate, and maintain a smart work zone (SWZ) during all phases of construction requiring lane closures, lane shifts, or diversions. The SWZ shall include CCTV cameras with Pan-Tilt-Zoom (PTZ) at critical locations to monitor the project construction impacts on traffic conditions. The SWZ may use Portable or trailer mounted devices that can be easily adjusted and relocated to improve monitoring. Monitoring will be by the DEPARTMENT at the RTMC in Chipley. The SWZ system shall be integrated with Design-Build Firms Temporary Traffic Control Plans.

The Design-Build Firm shall adjust the CCTV camera locations as needed to maintain full coverage during all phases of construction. The Design-Build Firm shall give the Department the opportunity to review and approve camera placement locations during each phase or construction to achieve desired outcomes. The SWZ systems shall be designed to stream video remotely to the D3 Regional TMC through an internet interface. The cameras shall use wireless communications, such as cellular or wireless broadband. The camera mounting system shall be capable of raising the camera to at least 30 feet above the roadway. When portable CCTV cameras are used, the portable CCTV shall be solar powered and provide sufficient battery backup to ensure continuous operation.

SWZ Wireless Communications System: The Design-Build Firm shall provide a wireless communication system for each SWZ component. The Design-Build Firm is responsible to design and provide adequate communications to meet the bandwidth, latency, and reliability requirements of each SWZ device and provide SWZ cloud based Commercial Off The Shelf (COTS) software. Both cellular communications and wireless broadband are acceptable solutions. Wireless broadband shall be designed for optimum line of sight. The Design-Build Firm may provide independent communications to each device or provide communications from each device to a central communications point.

SWZ cloud-based COTS software: The Design-Build Firm shall provide a turnkey cloud-based, COTS software solution to operate and maintain the SWZ system. The software shall include the following functionality:

- Monitor and control all SWZ field devices (CCTV Cameras)
- Provide a secure web portal to the D-3 RTMC in Chipley and feed data to SunGuide®, Florida 511, Google, and Waze. The web portal and data feeds shall, as a minimum, provide data about current SWZ locations, current time-stamped work zone speed limits, current work zone operating conditions, current traffic volumes approaching and through the work zone, and locations of delays or queues within the work zone. Data format shall meet FDOT SunGuide®, FDOT FL511, Google and Waze format requirements.

ITS Analysis

The Design-Build Firm shall review the approved preliminary engineering report, typical section package, as-built plans of the constructed projects in the vicinity of this project, traffic technical memorandum, and proposed geometric design alignment to identify impacts to the proposed ITS field device placements. The Design-Build Firm shall review all related District ITS plans and documentation for the project corridor to ensure all cited ITS elements are included in this project.

The Design-Build Firm shall prepare a PSEMP, RTVM, and other documents as determined necessary for conformance with FHWA requirements. The Design-Build Firm shall use all applicable DEPARTMENT requirements and guidelines, including, but not limited to, the FDM, Standard Plans, and Standard Specifications for Road and Bridge Construction in the design of ITS.

The initial RTVM shall be submitted to the Department for review and approval no later than 30 calendar days after the approval of the PSEMP. At a minimum, the PSEMP and RTVM shall be reviewed every

major milestone (such as phase submittals and/or with an equipment/device type change) after the initial approval and updated, as needed. The updated and revised PSEMP and RTVM documents shall be submitted to the Department for review and approval.

3. Construction and Integration Services:

The Design-Build Firm shall be responsible for all Signalization and ITS construction and integration services relating to the Project. The Design-Build Firm shall provide a detailed plan of action, which discusses the process for integrating the new devices into the existing Okaloosa County Traffic Operations Center (TOC).

The Design-Build Firm shall coordinate all integration activities with the Department prior to commencement of any integration activities. Okaloosa County TOC is a secured facility and access to it shall be scheduled at least one week in advance with the County Traffic Operations Manager. All integration within the TOC shall be scheduled at times other than during the normal weekday peak traffic hours (7:00 am to 9:00 am, and 3:30 pm to 7:00 pm).

Remote VPN access shall not be provided to the Design-Build Firm to access the ITS network of the Okaloosa County. The County Traffic Operations Manager, or his designated representative, will perform the Okaloosa County TOC existing infrastructure integration tasks to proposed signalization and ITS infrastructure in the Okaloosa County TOC with the guidance and coordination support of the Design-Build Firm, as necessary. Integration and testing of all proposed field Signalization and ITS infrastructure shall be performed by the Design-Build Firm.

The Design-Build Firm shall provide to the County Traffic Operations Manager all necessary information and data to facilitate subsystem configuration and integration activities.

The Design-Build Firm shall incorporate the as-built CADD plans for all existing and new underground utilities installed under this Project, including but not limited to, FOC, splices schematics, pull boxes, splice boxes, power service and cables, and underground conduit system, in an electronic format that shall be 100 percent compatible with Department's ITSFM forms. The Design-Build Firm shall prepare ITSFM data entry worksheets for each ITS field installation as required by the Department.

The Design-Build Firm shall be responsible for the integration and testing of all signalization and ITS infrastructure and communications subsystems. Once the Design-Build Firm has installed and supplied the power and communications interconnect to each ITS device as stated in the plans and specifications and approved by the Department/CEI, the Design-Build Firm shall integrate each device into the existing passive communications network. The Design-Build Firm shall coordinate with the Department Project Manager and/or Operations Manager a schedule of installation and integration. Once the Design-Build Firm has completed the installation of fiber plant and devices and receives acknowledgement acceptance by the Department's construction services that each device proposed in the field is installed, properly connected, and completely equipped for field integration activity, the Design-Build Firm shall then field integrate the ITS devices/cabinets in accordance with the approved schedule. The Design-Build Firm shall verify that all ITS devices are in the correct locations and are functioning properly at each location at the time of installation and integration.

- The Design-Build Firm shall verify communications between all ITS devices as designed, between each ITS device location, and between all communications hubs and the Okaloosa County TOC. The Design-Build Firm shall install and integrate all active Layer 2 communications components and Layer 2 communications equipment in all communications

hubs. This shall include, but be not limited to, field switches, device servers, Uninterruptible Power Supply (UPS), remote power management devices, and all cables and connectors necessary for the successful operation of the communications system. Excluded is modification of any existing or new Core Switches/Routers operating at Layer 3 Core Switches. Such devices shall be configured by the Department or Okaloosa County TOC .

- The Design-Build Firm shall provide a Field Integration Checklist indicating that all integration tasks have been completed and are documented.
- The Design-Build Firm shall provide all equipment, parts, and configuration data necessary to integrate the ITS with the Okaloosa County TOC.
- The Design-Build Firm shall provide complete and comprehensive documentation of all elements of this Project as specified in this RFP.

The project ITS field devices are to be operated from the Okaloosa County TOC. The Design-Build Firm shall integrate the individual ITS field elements (i.e., CCTV cameras, H.264 decoders, and Ethernet communication devices) with the respective vendor-provided subsystem software such that each of the subsystems shall be operated as a stand-alone system. This configuration will form the basis for Part 1 of the Subsystem Tests.

Once Part 1 of the Subsystem Tests are completed and the results are approved by the Department, the Design-Build Firm shall provide all integration and configuration data and settings so the Okaloosa County TOC can integrate the ITS field elements into the existing Core Layer 3 Ethernet Switches.

As soon as possible, after completion of Part 1 of the Subsystem Tests, the Design-Build Firm shall provide to the Okaloosa County TOC Manager all necessary information and data to facilitate the Okaloosa County TOC configuration and integration activities. The Okaloosa County TOC completes Core Layer 3 Ethernet Switch and integration and configuration within 14 calendar days of receipt of the configuration and integration data and related information from the Design-Build Firm. After Okaloosa County TOC integration is completed, the Design-Build Firm shall conduct remaining Part 2 of the Subsystem Tests.

Prior to the Final Acceptance, the Design-Build Firm shall demonstrate to the Department that all of the equipment specified in the RFP that was installed and configured by the Design-Build Firm flawlessly operates from the Okaloosa County client workstation located at the TOC.

The integration of the various subsystems with the Okaloosa County ATMS software will shall be performed by the responsibility of the Department and the Okaloosa County Department of Public Works with guidance, coordination, and support of the Design-Build Firm. The Design-Build Firm shall coordinate with the TOC and provide the following services:

1. Conduct a site survey to prepare the creation of the system database, configuration files, system graphics, and other preparatory work for the integration of the Okaloosa County ATMS software .
2. Troubleshoot any Design-Build Firm-installed field hardware issues that affect the integration work.
3. Furnish and install the field hardware and software required to operate with the Okaloosa County ATMS software.
4. Provide ITS field device information, such as equipment configuration diagrams, IP addresses, protocols, and documentation (e.g., users' manual, troubleshooting guide, etc.).

5. Configure the ITS field devices for integration with the Okaloosa County ATMS software, including link, intersection, and device configurations.
6. Provide post-installation services after testing the Okaloosa County ATMS . The services shall include providing documentation to allow the Okaloosa County TOC personnel to perform ATMS integration tasks, including but not limited to, populating the tables and creating map links.
7. Meet with the Department to validate all required documents.

All of the licenses for the products shall be transferred to the Department and Okaloosa County TOC . The installation media for the above products shall be provided and shall become the property of the Department after installation.

4. Material, Equipment, and Subsystem Requirements

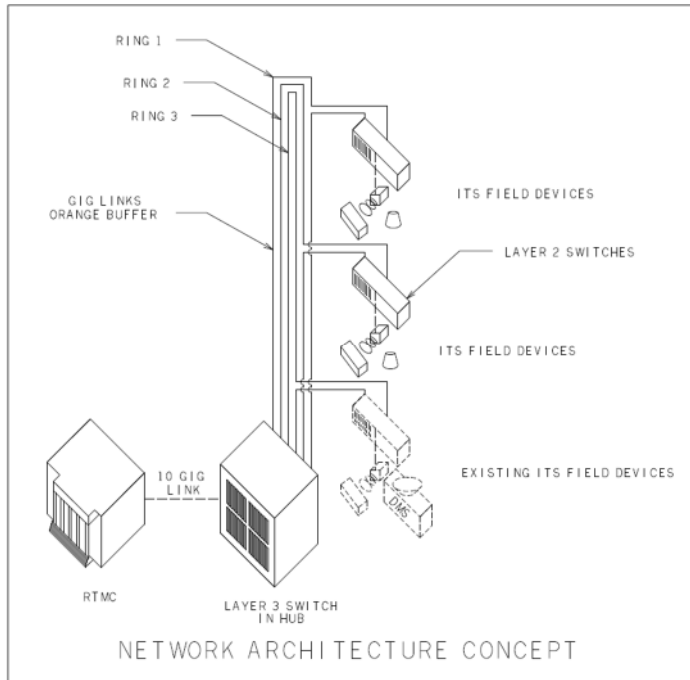
a. Communication Subsystems

For purposes of the RFP, the term “connectivity” refers to the physical connection between the ITS field devices and the Layer 2 Ethernet switches in the ITS cabinets. The term “interconnectivity” refers to the connection between any two adjacent hubs and the TOC. The Design-Build Firm shall provide full connectivity for ITS field elements installed with the Project.

The Design-Build Firm shall provide a communication subsystem that is an open-architecture, non-proprietary, real-time multimedia communication network, which is fault-tolerant. The Design-Build Firm shall design a hierarchical network design, which includes the following layers:

- The interconnectivity layer: comprised of the Layer 3 Ethernet switches in the TOC and local communication hubs. The Okaloosa County Traffic Operations personnel will perform configuration of these Layer 3 Ethernet switches.
- The connectivity layer: the local-access layer that connects ITS field devices, Layer 2 Ethernet switches, and all necessary encoders, media converters, and device servers in the ITS cabinets.
- The FOC physical layer: the physical media that connects the Layer 2 and Layer 3 Ethernet switches.

The Design-Build Firm shall integrate the ITS field elements into the TOC without disrupting existing functions and ITS field elements. New ITS cabinets and ITS field elements shall be integrated into this network. The Design-Build Firm shall develop and deploy new connectivity 1 gbps Layer 2 MFES in all new ITS cabinets, and traffic signal controller cabinets. The Design-Build Firm shall design and implement a “leap-frog” network architecture such that no adjacent ITS field elements are in the same fiber pair ring as shown in the Network Architecture Concept layout below.



The Design-Build Firm shall work closely with the Okaloosa County Traffic Operations personnel to confirm the network architecture concept. The final network architecture, along with the associated FOC splicing diagrams, shall be included with the 90% plans for review and approval by the Department.

All new underground and directional bored communications conduit shall be HDPE SDR 11 rated or thicker and smooth wall interior. A spare conduit shall be provided for each newly installed conduit. There shall be a separate spare conduit each for communication and power. Open trench and bored communication conduit consist of a two 4" gray outer duct (includes communication and a spare), each with one 1 1/4" white innerduct, one 1 1/4" orange innerduct, and one 1" gray innerduct. Install locate wire inside the outer duct, but outside the innerducts. Open trench and bored power conduit consist of two 2- inch gray conduit (includes power and a spare). Every drop or laterals, new conduit runs shall have two 2-inch conduit runs. All conduits shall have "jet-line" or equal pull string installed in each spare conduit run for future use to support the field-to-center connectivity of the signalized intersection Advance Traffic Controllers. Each bridge railing shall include separate 2" Schedule 80 conduit runs. for ITS electrical power, ITS communication, and lighting electrical power.

b. IP Addressing Scheme

The Design-Build Firm shall utilize the Okaloosa County Traffic Operations Standard IP Addressing Scheme to create a Project- specific list for all new/existing ITS field elements that are installed as part of the Project. The Department will provide the Design-Build Firm with as many multicast IP addresses required for the CCTV video streams and the remaining needs. The IP address file will be provided in Excel spreadsheet format.

The Design-Build Firm shall be required to submit for approval a current cabinet configuration document listing all IP addresses utilized in the Project in a format easily understood depicting, at a minimum, the following information:

- Page Number (from Plans)
- Mile Marker

- GPS coordinates
- Device Type
- IP Address, etc.

The Design-Build Firm shall not use any IP addressing scheme or IP addresses other than those provided by the Department through Okaloosa County. The Department and Okaloosa County TOC personnel shall review and approve the Design-Build Firm's IP addressing scheme submittal prior to the Design-Build Firm's implementation of the scheme.

The Design-Build Firm shall design and deploy multiple virtual local area networks (VLANs) to segment ITS field elements into logical workgroups. The Design-Build Firm shall ensure that the new ITS field elements are configured in new sets of VLANs. The design of VLANs shall take into consideration the optical network requirements described elsewhere in the RFP.

c. Fiber Optic Cable

The Design-Build Firm shall provide a 144-count single-mode FOC backbone. ~~The FOC backbone should preferably be installed along the side of the main line and inside the bridge traffic railings. Any deviation to the FOC backbone location shall be approved by the Department. The Design-Build Firm shall tie to existing FOC backbone to ensure continuity.~~

The Design-Build Firm shall provide ~~12-~~ 24 count single-mode FOC drops from the 144-count FOC backbone to ITS cabinets. ~~Individual fibers shall be looped one full turn within the splice tray to avoid micro-bending. Place buffer tubes and bare optical fibers such that there is no discernible tensile force placed upon them. There shall be only one buffer tube per splice tray. All splice trays shall be deep trays and capable of closing without the use of tape or other adhesive devices. Fiber optic strands shall not enter more than one splice tray.~~

~~In no case shall the Design-Build Firm install FOC in the same conduit, pull box, or splice box as electrical cables.~~

~~Any request to access the existing ITS system including, but not limited to, fiber optic cable (hand holes and pull boxes), ITS equipment control cabinet(s), ITS power facilities, traffic signal cabinets, ITS specific equipment (CCTV), and/or the TOC will require a submitted and approved access schedule. This document shall identify access necessities, schedule expectation(s), specific ITS facilities to be accessed, and an action plan for potential failure. This document shall be submitted to the TOC Operations Manager 30 calendar days prior to system access.~~

d. Fiber Optic Conduit and Locate System

~~The Design-Build Firm shall provide a 96-count single-mode FOC backbone.~~ The FOC backbone should preferably be installed along the side of the main line and inside the bridge traffic railings. Any deviation to the FOC backbone location shall be approved by the Department. The Design-Build Firm shall tie to existing FOC backbone to ensure continuity.

~~The Design-Build Firm shall provide 12-count single-mode FOC drops from the 96-count FOC backbone to ITS cabinets.~~ Individual fibers shall be looped one full turn within the splice tray to avoid micro bending. Place buffer tubes and bare optical fibers such that there is no discernible tensile force placed upon them. There shall be only one buffer tube per splice tray. All splice trays shall be deep trays

and capable of closing without the use of tape or other adhesive devices. Fiber optic strands shall not enter more than one splice tray.

In no case shall the Design-Build Firm install FOC in the same conduit, pull box, or splice box as electrical cables.

Any request to access the existing ITS system including, but not limited to, fiber optic cable (hand holes and pull boxes), ITS equipment control cabinet(s), ITS power facilities, traffic signal cabinets, ITS specific equipment (CCTV), and/or the TOC will require a submitted and approved access schedule. This document shall identify access necessities, schedule expectation(s), specific ITS facilities to be accessed, and an action plan for potential failure. This document shall be submitted to the TOC Operations Manager 30 calendar days prior to system access.

All ITS sites shall be accessible by a maintenance vehicle (typically a ¾ ton pickup truck).

The Design-Build Firm shall install directional bores perpendicular to the roadway when crossing another roadway. Where multiple conduits are required, the directional bore shall place all conduits into a single outer conduit appropriately sized to contain the required number and sizes of conduit.

e. Managed Field-Hardened Ethernet Switches (MFES)

Managed field-hardened Ethernet switches shall meet the requirements of the Specifications, or the following minimum technical requirements, depending upon which is more stringent.

The Design-Build Firm shall furnish and install new 1 Gbps Layer 2 MFES in all new ITS cabinets and traffic signal controller cabinets. The Design-Build Firm shall ensure the MFES has a minimum of 14 ports.

The Design-Build Firm shall ensure that the configurations of the MFES are able to be downloaded and stored on a PC and later shall be able to be uploaded to the unit when necessary.

The Design-Build Firm shall ensure that the configuration of the MFES meets or exceeds the following minimum trouble shooting and diagnostic specifications:

1. Displaying the contents of a specified address
2. Displaying information about hardware registers for a specified port
3. Displaying configuration and status of physical and logical ports
4. Displaying detailed information about Spanning Tree (configuration and status)
5. Displaying active status of the unit

The Design-Build Firm shall ensure that each MFES supports, at a minimum, have the following security features:

1. Passwords – Multi-level user passwords secure switch against unauthorized configuration
2. SSH / SSL – Extends capability of password protection to add encryption of passwords and data as they cross the network
3. Enable / Disable Ports – Capability to disable ports so that traffic cannot pass
4. 802.1q VLAN – Provides the ability to logically segregate traffic between predefined ports on switches
5. MAC Based Port Security – The ability to secure ports on a switch so only specific ITS field elements / MAC addresses can communicate through that port

6. 6802.1x Port Based Network Access Control – The ability to lock down ports on a switch so that only authorized clients can communicate via that port
7. RADIUS – Provides centralized password management
8. SNMPv3 – Encrypted authentication and access security

f. CCTV Subsystem

The Design-Build Firm shall design the placement of CCTV cameras as follows:

- Provide unobstructed view of both directions of travel on the new bridges including clear zones and on crossroads
- Full CCTV coverage of the project to ensure that all portions of the roadway including the clear zones can be observed at an angle sufficient to discriminate between vehicles, regardless of the distance between the CCTV and the vehicles
- All proposed CCTV cameras shall be high definition and IP addressable, Analog cameras will not be accepted
- CCTV poles and cameras shall not be installed on the bridge proper

The Design-Build Firm shall perform a 360 degree field of view video survey at the proposed camera height for each CCTV camera site utilizing a bucket truck and the Design-Build Firm's proposed camera. The intent of the video survey is to verify 100 percent CCTV coverage of the new bridges and travel lanes, auxiliary lanes, and crossroads. The Design-Build Firm shall record the video survey for the Engineer's review and acceptance.

Any additional CCTV cameras and field elements required to obtain the coverage requirements described above shall be included in the Design-Build Firm's ITS plans and furnished, installed, integrated, and tested at no additional cost to the Department.

The Design-Build Firm shall install camera lowering devices for the CCTV pole covering the new bridges. Any variation to this requirement will not be approved by the Department.

All CCTV camera poles will have 8' blunt tip air terminals with 4' exposed above and opposite the component to be protected. Supports for this air terminal shall be at the base of the air terminal and at the midpoint. Stainless steel straps shall not be used to mount the air terminal to the pole. The air terminal shall be mechanically bonded to the CCTV pole.

CCTV poles shall be constructed of length and stiffness that can meet the vertical placement and camera stability requirements and the following additional requirements:

1. All CCTV poles shall be located outside the clear zone as applicable mainline travel lanes or shielded in accordance with the FDM.
2. Electrical ground: All CCTV poles shall be supplied with an electrical ground meeting the requirements of the Specifications and Standard Plans.

The Camera Lowering Device (CLD) shall be mounted to a specially designed tenon bolted to the top of the pole as required. All poles shall have a minimum inside raceway dimension of four (4) inches at the tip of the pole. All poles shall be provided with a fish wire to facilitate cable installation.

The Design-Build Firm shall design-build the CCTV pole with CLD in such a manner that the personnel operating the CLD lowering mechanism are not standing directly beneath the CCTV assembly and the access to the CLDs is not obstructed in any manner. The lowering arm shall be mounted perpendicular to the roadway unless otherwise approved by the Department. The CCTV sites with CLD are only required at the bridge approach-departures.

The Design-Build Firm shall ensure the camera pole to include the opening for CLDs at 90 degrees from the CCTV camera. The design of the pole shall include the Hand-Hole Frame (HFF) and conduit entry holes for the ITS cabinet without any conflict with the CLD and the HFF. The Design-Build Firm shall submit the details of placement of CLD and CCTV camera assembly as part of the 90% design submittal for the Department's review and approval. The CLD shall include a suspension contact unit for electrically connecting the camera assembly to the power, data, and video cables; divided support arm; and a pole adapter for the assembly's attachment to a pole-top tenon, a pole top junction box, and a camera connection box. The CCTV camera viewing, and poles locations shall not be interfered with or obstructed by other devices or landscaping elements such as trees and shrubbery in the vicinity.

The Design-Build Firm shall also pay for any utility adjustments required for these CCTV field elements at no additional cost to the Department.

g. Power Subsystem

The Design-Build Firm shall establish the power service addresses and the necessary commercial electrical power service for all ITS sites. Once power service has been established by the Design-Build Firm, the Department or its designee will inspect the power service for compliance with Department, NFPA, and NEC standards, and all Contract Documents. The Design-Build Firm shall provide a signed and sealed Power Design Analysis Report (PDAR) prepared by a licensed electrical engineer consist of electrical load calculations, voltage drop calculations for each ITS site or combination of sites, and include the service feeder size computations from the power company transformer to each local hub. The Design-Build Firm shall optimize the number of ITS cabinets for economy of construction and maintenance. The Design-Build Firm shall design and install electrical service, meters, conduit, pull boxes, copper conductors, and procure service points from the local power service providers within the project limits to make installation fully functional. All electrical distribution shall be underground, and isolated from the communication network.

In addition, the Design-Build Firm shall apply the following criteria to the design of the power service:

1. Aluminum wound electrical products shall not be installed.
2. All elements shall be new and free of damage.

Electrical power design and plans shall include the following:

1. Electric service panel in the cabinet, based on electrical load of the cabinet and an additional 20A circuit and receptacles shall be provided for miscellaneous electrical loads
2. Electrical power shall be designed based on the load requirements of the ITS field element(s), cabinet, network equipment, UPS, and other miscellaneous electrical equipment at each ITS field element location
3. Step-up or step-down transformers as needed for each location
4. Loads shall be calculated per NEC requirements and maximum 5% allowable voltage drop including the service feeder from the utility transformer
5. Grounding, lightning, and surge protection for all electrical subsystems

6. Plans shall clearly show all electrical ratings requirements, loads, wire sizes, grounding, lightning, surge protection, meters, disconnects, generator plugs, and all elements necessary for a complete and functional design
7. Final electrical plans signed and sealed by a Professional Electrical Engineer licensed with the State of Florida Board of Professional Engineers
8. All electrical cabling shall be new copper cabling. The Design-Build Firm shall use cables that are resistant to saltwater, suitable for direct burial, and spliced with submersible rated splice kits

The Design-Build Firm shall be responsible for contacting and coordination with the local power companies along the Project corridor. The Design-Build Firm shall work with the local power companies to designate locations of electrical sources to provide new and adjusted electrical service as required for the Project.

The Design-Build Firm shall pay all necessary fees and expenses required by the commercial electrical companies to establish new electrical power and for adjustment of existing service. The Design-Build Firm shall work with the Department to establish billing addresses for each new power service location along with the responsible party for future bills. Along with other as-built documentation, the Design-Build Firm shall provide electrical calculations and other details of the implemented power service to the Department including the GPS location of each power source.

For each power distribution system, the Design-Build Firm shall also provide equipment to automatically assume and power the loads in the event of an interruption of commercial power to include emergency generator(s) with automatic start, ATS, transformers, cabinets, power panels, circuit breakers, and all related equipment. The Design-Build Firm shall be responsible for verifying these locations, determining final available power sources and voltages, coordinating with the local power companies, and paying any and all connection and monthly service fees for the power supply until the project has been turned over to the Department on the written date of Final Acceptance.

All ancillary components shall be delivered along with the needed cables and connectors for power and generator/ATS communications. Power conduits shall have smooth walls and be sized adequately, as determined by the overall cable diameter and recommended percentage of fill of conduit area, per requirements in the latest NEC and the Specifications.

The power conductors shall be adequately sized per requirements in the latest NEC and the Specifications. Conductors shall be rated for underground installation in wet locations. The power system design shall include convenience outlets that may be used by the maintenance crew. Within each ITS equipment cabinet, at least two NEMA 5-15R type GFCI protected outdoor rated receptacles for use by maintenance personnel shall be provided.

Power cables shall be marked with 1 tag indicating direction or exit from underground facilities (i.e., vaults, primary junction boxes, service holes, manholes, secondary junction boxes, transformers). This tag shall indicate the general direction of the cable(s) to the next facility where the cable is located. The Department must approve the tags used before the procurement and installation. All tags shall be labeled with the next point of connection (i.e. transformer 1 to transformer 2). All equipment shall be numbered prior to placing the tags on the power cables.

The power subsystem shall contain readily accessible, manually resettable, or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection. Power equipment shall be installed in areas to avoid wet locations and easy access by vehicles and maintenance personnel.

All connections and equipment should be outdoor-rated and protected from moisture and water intrusion. No exposed wiring is permitted.

Coordination of protection devices is required to minimize interruption of electrical service to other areas of the power system. The system shall be designed so that the protective device closest to the fault operates first.

All ancillary components shall be delivered along with the needed cables and connectors for power and communication. All installations and wiring shall meet the requirements of the NEC and NESC. Grounding shall be in accordance with the requirements of NEC Article 250 and the Specifications.

Remote Power Management Units (RPMU) – The Design-Build Firm shall provide RPMU for controlling multiple network devices and services. The RPM shall individually control AC power for up to eight connected devices. Once connected to the network, the RPMU shall provide access and control using a standard web browser and password. The Design-Build Firm shall supply remote power management in each cabinet servicing an ITS device within the project. The RPMU shall provide the following minimum functionalities:

1. Eight outlets;
2. Network connections via Ethernet;
3. Network control/support via HTTP server & SNMP agent TCP/IP;
4. Scheduled event control including day of week and specific time start-up and shutdown; and
5. Notifications including pagers and network broadcast messages.

1. **Transformers**

When the commercial power is not supplied with the correct voltage or phasing, the Design-Build Firm shall design, construct, install, and integrate the transformer (Power Feed Transformer) at each commercial power supply location to convert the power supply from the Utility Company (ies) to the appropriate secondary voltage single phase power and with suitable wire sizes that are capable of providing power to the operations of ITS field elements within the Project. The transformer shall be equipped with two 2.5 percent taps above and two 2.5 percent taps below normal voltage. All taps shall be full capacity taps. However, the Design-Build Firm shall not include the plus or minus tap in the voltage drop calculations during the design of the power subsystem. All transformers shall be copper wound.

The Design-Build Firm shall design, construct, install, and integrate the transformer (ITS field element Transformer) at each of the ITS field element location cabinets to step-down from the voltage supplied from the underground distribution wire to the 120/240v power requirement for that location, and neutral conductor from the primary winding shall not be bonded to the secondary winding for isolation purposes.

2. **ITS Electrical Conduit, Pull and Junction (Splice) Boxes**

Electrical conductors shall not be placed in the same conduit, pull box, or splice (junction) box as FOC. The Design-Build Firm shall furnish and install ITS electrical conduit and pull/splice boxes for non-fiber optic wiring needs (power, communication, etc., for ITS). The Design-Build Firm shall meet the following requirements.

1. Detail type, size and quantity of ITS electrical pull/splice boxes on the Plans.
2. Provide installation details including connections with conduit in compliance with the Specifications and Standard PlansStandards.
3. Address site restoration and disposal of excavated materials.

4. Use only equipment and components that meet the requirements of the RFP, which are listed on the Department's Approved Products List (APL).
5. ITS electrical pull/splice boxes shall meet the requirements of the Specifications.
6. ITS electrical pull/splice boxes shall be a minimum of 24 inches long by 18 inches wide by 12 inches deep. Ensure that the pull/splice box is large enough to house non-fiber cables, as required, without subjecting the cables to bend radii less than industry standards for the types and diameters of cables in the box. Ensure there is enough room to provide any necessary cable splicing. Ensure the boxes are large enough for storage of slack cable. Pull boxes shall not be located in ditches where there is a potential for them to be submerged by seasonal high-water.
7. The maximum spacing between ITS electrical pull boxes shall be in conformance with the N.E.C. associated with the size and number of conductors.
The Design-Build Firm shall develop specifications in accordance with industry standards to address cable placement and spacing in accordance with industry recommendations for the types and sizes of cables used on the Project.
8. Provide supplemental electronic box markers in all ITS pull/splice boxes.
9. Provide locking and security systems on electrical ITS pull/splice boxes to prevent theft of copper cable. The security system shall include, at a minimum, a system for securing the lid that includes hardened metal bars or other cover and locks/bolts with unique keys that are not available in the consumer marketplace. Ten keys shall be provided for the maintenance personnel use. The keys shall be delivered to the Department upon Final Acceptance. The security system shall also include a 12-inch thick concrete mowing apron, supplemental security locking systems, and/or other systems designed and proven to deter theft. The Design-Build Firm shall submit the locking and security systems to the Department for review and approval with other required design submittals.
10. Mowing aprons shall be installed for all shoulder mounted pull and splice boxes.

3. Uninterrupted Power Supply (UPS)

The Design-Build Firm shall install a UPS at each device cabinet and traffic signal controller cabinet. Each UPS shall supply all electronic components housed in and associated with ITS field equipment cabinets with uninterrupted power for a minimum of four (4) hours in the event of power loss. Each UPS shall be sized according to the maximum expected load for each cabinet plus 50 additional Watts. The service outlets shall not be connected to the UPS.

The UPS shall provide commercial power pass through during all failures of UPS. The Design-Build Firm shall ensure that the UPS is generator compatible to ensure clean, uninterrupted power to protected equipment when generator power is used. The UPS shall be environmentally rated for the environment that the UPS is installed in. The recharging all of the UPS batteries which may be drained shall be included within the power design calculations.

The Design-Build Firm shall supply a SNMP network management interface to determine operational status of the UPS, the internal UPS temperature, and the external temperature as recorded by a remote sensor mounted elsewhere in the cabinet, and state of the cabinet door switch(es) (open or closed), and SPD failures (open or closed SPD alarm contacts). All UPS shall be designed and integrated to the ITS Ethernet network, such as: power loss, battery levels, and alarms. Any software required to monitor the UPSs shall be furnished, configured, and integrated into the TOC monitoring computer.

4. Grounding, Lightning, and Surge Protection

All Project systems shall be protected from damage caused by lightning strikes, transient voltage surges, and induced current. The Design-Build Firm shall design, install, and test all grounding, lightning protection, and Surge Protection Device (SPD) subsystems in accordance with the Specifications and Underwriters Lab (UL) 96A specifications.

The Design-Build Firm shall furnish and install resettable SPDs for all cables and conductors (power, video, and data). All Project subsystems, devices, and ancillary components with electrical interconnects shall be protected from voltage surges caused by lightning, transient voltage surges, induced current, and external electromagnetic fields at the time of installation of each device, as specified in the Specifications.

The Design-Build Firm shall provide a grounding system that meets the grounding requirements of the N.E.C. (latest edition) and the Specifications.

The Design-Build Firm shall provide a SPD both ahead of and behind (i.e., on the supply side and the load side of) all ITS device electronics. The SPD for the ITS device's power source (supply side) shall be rated at a minimum rating of 80 kiloamps (kA) per phase, or greater. The SPD for the ITS device's point of use (load side) shall be rated at minimum of 20 kiloamps (kA) per phase. The SPD on both sides shall have an operating voltage of 120 VAC single phase and a maximum continuous operating voltage of 150 VAC single phase.

The Design-Build Firm shall ensure that the required lightning protection equipment for each device pole is securely attached on the pole at an elevation higher than the highest attached ITS device and/or component described herein (e.g. CCTV cameras).

5. Device Protocol Compliance

For the ITS devices being installed, the Design-Build Firm shall ensure that the protocol used by those devices, which are to be controlled by the Okaloosa County ATMS software, is compliant with the protocols listed online at the following website to ensure compatibility for integration with ATMS software. The primary control center for all signal and ITS devices is at Okaloosa County Traffic Management Center.

CCTV Camera Data Configuration Documentation Requirements:

Data	Description
Camera Name	The data identifies the unique name of each camera.
Center ID	The data identifies the unique name of the center where each camera resides.
Protocol	The data specifies the protocol (values: SNMP, SNMP [PMPP]) for each camera.
Poll Process	The data provides the name of the driver for each camera.
Manufacturer	The data identifies the manufacturer of each camera.
Location Description	The data describes where each camera resides.
Roadway	The data identifies the roadway where each camera resides.
Direction	The data identifies the direction of the roadway where each camera is installed.

Data	Description
Latitude	The data identifies the latitude where each camera resides.
Longitude	The data identifies the longitude where each camera resides.
Op Status	The data identifies the operational status (values: Active, Error, Failed, Out Of Service) of each camera.
Address Type1	The data identifies the address type (values: pmpp Address, comm Address) for each camera. If pmpp Address, then the camera uses SNMP (PMPP); if Comm Address, then the camera uses SNMP.
Address Type2	The data specifies the address type (value: portServerAddress) of Address Type 2.
Address	The data identifies the device address of each camera.
Port Server IP	The data identifies the IP address for the port server where each camera resides.
Port Server Port Number	The data identifies the port number for the port server where each camera resides.
Community Name	The data identifies the community name for each camera.
Attach to Video Device	If selected, additional IP video parameters must be supplied.

IP Video Data Documentation Requirements:

Data	Description
Video Device IP Address	The data identifies the IP address for the encoder.
Blackout	The data determines if the camera is restricted.
Video Device Type	The data identifies the video device type (IP video device) for the encoder.
IP Streaming Driver ID	The data identifies the unique IP video switch driver name.
Card Number	The data identifies the card number for the encoder.
Manufacturer	The data identifies the manufacturer values of the encoder.
Model	The data identifies the model of the encoder.
Streaming Type	The data identifies the streaming type (values: elementary, transport, program) for the encoder.
Secondary Interface	The data identifies the secondary interface for the encoder that enables users to maximize the number of inputs for the encoder.
Snapshot Requested	The data determines if snapshots are generated for the encoder.

The Design-Build Firm shall be responsible for providing all data necessary to populate the SunGuide® database. The Design-Build Firm shall provide this data to the Okaloosa County Traffic Operations Manager. The Okaloosa County Traffic Operations Manager, or his designated representative, will enter the appropriate data into the ATMS database at the TOC under the oversight of the Design-Build Firm. At no time shall the Design-Build Firm be granted ATMS administrative rights or access to the Okaloosa County TOC.

5. Testing and Acceptance:

All equipment furnished by the Design-Build Firm shall be subject to monitoring and testing to determine conformance with all applicable requirements. The Design-Build Firm is responsible for the coordination and performance of material inspection and testing, field acceptance tests, and system acceptance tests. The times and dates of tests must be accepted in writing by the FDOT Project Manager. The Design-Build Firm shall conduct all tests in the presence of the FDOT Project Manager or designated representative.

6. Existing Conditions

This section is intended to provide a general overview of the existing conditions of the Department's ITS System and its components such as the fiber optic network (FON) communications infrastructure within the project limits. Refer to the concept plan for existing ITS equipment locations. In addition, the Design-Build Firm shall refer to the ITS As-Built Plans provided with this RFP as Reference Documents for additional information and shall be responsible for field verifying all existing site conditions within the project limits.

S. Landscape Opportunity Plans:

It is the intent of this work item to preserve the opportunity to provide for significant landscape planting areas within the Project limits that meet the intent of FDOT Highway Beautification Policy. The landscape opportunity design shall adhere to the FDOT Highway Beautification Policy with the intent of creating a unified landscape theme for the project.

The Design-Build Firm shall provide the necessary site inventory and site analysis and shall prepare a "Landscape Opportunity Plan" (Opportunity Plan) as part of the roadway plan set. The Landscape Opportunity Plan shall consider the Design-Build Firm's proposed roadway improvements, utilities, setbacks and clear zone dimensions, community commitments and other Project needs in identifying future landscape planting areas. Landscape opportunity areas should be preserved in accordance with the Departments "Bold" initiative.

The Opportunity Plans shall include the following:

1. Proposed improvements and existing elements to remain as associated with the Project.
2. Vegetation disposition depicting existing plant material to be removed, relocated or to remain.
3. Wetland jurisdictional lines.
4. Proposed drainage retention areas and easements.
5. Proposed utilities and existing utilities to remain.
6. Graphically depicted on-site and off-site desired or objectionable views.

7. Locations of landscape opportunity planting areas in a bubble format which identifies various vegetation groupings in a hatched or colorized manner. Examples are: “trees/palms/shrubs”, “shrubs only”, “buffer plantings”, etc.
8. Provided and labeled applicable clear zone, horizontal clearance, setback dimensions on the plans and in chart form which reflect AASHTO, FDOT and Department guidelines for landscape installation and maintenance operations, including those that have been coordinated with other disciplines
9. Identified outdoor advertising locations, owners and contacts and shown 1000 ft. view zone.
10. Indicated potential area(s) for wildflower plantings.

The Opportunity Plan shall match the scale and format used for the proposed roadway sheets. Should this format not convey design intent that is clearly legible, an alternate format may be considered.

Landscape construction documents and landscape installation are not included in this contract and shall be provided by others, **except within the center of the roundabouts as required by the RFP.**

Disciplines that will have greatest impact to preserving landscape opportunities include environmental, drainage, utilities, signing, lighting and ITS. The DBLA shall identify potential conflicts relating to preserving opportunity landscape areas and provide suggested resolutions to preserve them. If conflicts cannot be resolved by the Design-Build Firm and the DBLA, they shall be discussed with the Department’s Project Manager and District Landscape Architect for coordination and resolution.

The DBLA shall research and confirm any legally permitted outdoor advertising billboard (ODA) within 1,000-feet of the Project limits. The ODA sign(s) and 1,000-foot maximum vegetation protection zone limit shall be indicated on the plans. The Design-Build Firm’s Landscape Architect shall provide a copy of all correspondence and attachments to the Department’s District Landscape Architect.

The DBLA shall conduct a visual survey of existing vegetation within and adjacent to the Right of Way of the project. General locations of existing vegetation that will remain after roadway and associated improvements are completed shall be shown with notations of general plant species in each location on the Opportunity Plan. The DBLA shall identify proposed buffer areas as needed.

The DBLA shall meet with the District Landscape Architect prior to the beginning of work for the purposes of coordination and to discuss adherence to the Highway Beautification Policy. No proposed planting areas indicated on the Opportunity Plan can occur in: federal and/or state jurisdictional wetlands or other surface waters; within open water bodies; in the bottom of stormwater management facilities; or use obligate wetlands or facultative wetland species within 25 feet of the seasonal high water of wetlands or other surface waters. Limited plantings may occur on the slopes and bottom of stormwater management facilities once coordinated with the District EMO office, District Drainage Engineer and the District Landscape Architect. Trees may not be planted within 5 feet of storm sewer pipes and utilities.

VII. Technical Proposal Requirements:

A. General:

Each Design-Build Firm being considered for this Project is required to submit a Technical Proposal. The proposal shall include sufficient information to enable the Department to evaluate the capability of the Design-Build Firm to provide the desired services. The data shall be significant to the Project and shall be innovative, when appropriate, and practical.

B. Submittal Requirements:

The Technical Proposal shall be bound with the information, paper size and page limitation requirements as listed herein.

A copy of the written Technical Proposal must also be submitted electronically in PDF format including bookmarks for each section. Bookmarks which provide links to content within the Technical Proposal are allowed. Bookmarks which provide links to information not included within the content of the Technical Proposal shall not be utilized. No macros will be allowed. Minimum font size of ten (10) shall be used. Times New Roman shall be the required font type.

Only upon request by the Department, provide calculations, studies and/or research to support features identified in the Technical Proposal. This only applies during the Technical Proposal Evaluation phase.

Submit the Technical Proposal electronically in PDF format to: d3.designbuild@dot.state.fl.us

Submittal shall be broken into individual electronic documents as defined below to ensure file sizes remain manageable:

- **Technical Proposal**
- **11x17" plan sheets**
- **Individual roll plots—each roll plot shall be its own electronic file and clearly named. If the Department is unable to open or print roll plot(s) due to large file size, the Design-Build Firm will have 3 business days to submit six (6) prints of each roll-plots upon notification by the Department.**

Submit one (1) Original hard copy and one (1) CD, DVD or Flash Drive containing the Technical Proposal in .pdf format and six (6) collated, complete sets of hard copies of the Technical Proposal to:

Ranae Dodson
FDOT Procurement Manager
1074 Highway 90
Chipley, Florida 32428

The minimum information to be included:

Section 1: Project Approach

- Paper size: 8½" x 11". The maximum number of pages shall be 15 single-sided, typed pages including text, graphics, tables, charts, and photographs. Double-sided 8½" x 11" sheets will be counted as 2 pages. 11"x17" sheets are prohibited.
- Describe how the proposed design solutions and construction means and methods meet the project needs described in this Request for Proposal. Provide sufficient information to convey a thorough knowledge and understanding of the project and to provide confidence the design and construction can be completed as proposed.
- Provide the term, measurable standards, and remedial work plan for any proposed Value Added features that are not Value Added features included in this RFP, or for extending the Value Added period of a feature that is included in this RFP. Describe any material requirements that are exceeded.

- Provide a Written Schedule Narrative that describes the Design and Construction phases and illustrates how each phase will be scheduled to meet the Project needs required of this Request for Proposal. Bar or Gantt charts are prohibited.
- Submit a Category 2 Submittal Report summarizing the proposed Category 2 elements for each bridge per FDM 121.3 (maximum 1 page).
- Provide name and background information for your coastal engineer (if not previously provided in your Letter of Interest.)
- Describe aesthetic details and overall approach to project aesthetics.
- Describe the Maintenance of Traffic approach along with construction staging and storing. Address how existing traffic volume, small work areas, and urban area will be accommodated to provide a safe construction work zone.
- **Discuss the approach to provide vessel collision protection on existing bridge substructure during construction of proposed bridge and fender system.**

Section 2: Plans

- Plan and Profile views of the proposed improvements shall be submitted in roll-plot format. The maximum number of roll plots that may be submitted is 10. The maximum width of the roll-plots shall be 36". The maximum length of the roll-plot shall be 6'. **Inclusion of additional information on the roll-plot, other than depictions of the Plan and Profile views, is allowed. All other information not included on the roll plots shall be provided on 11"x17" sheets. No more than 200 single-sided 11" x 17" sheets are allowed. All information shall be provided on roll plots, including, but not limited to Plan and Profile views, typical sections, special emphasis details, structure plans, General Notes, etc.** All approved ATCs the Design-Build Firm intends to utilize for the project shall be detailed in the proposal plan as appropriate.
- Provide ship design impact forces in the General Notes of the structure plans.
- Right of Way Maps and Legal Descriptions (including area in square feet) of any proposed additional Right of Way parcels if applicable and approved through the ATC process. Provide Technical Proposal Plans in accordance with the requirements of the FDOT Design Manual, except as modified herein.
- The Plans shall complement the Project Approach.
- Provide the mooring and spud locations for barges. Include the bridges, fishing pier, subaqueous utility lines, and temporary and permanent impacts to Submerged Aquatic Vegetation (SAV) in the schematic and total anticipated wetland impacts.
- Provide an Aesthetics Package. Aesthetics Package shall be submitted on 36" x 6' roll plot (maximum 2 roll plots). Aesthetic Package shall include renderings of the proposed structures depicting the details of the proposed aesthetic elements on the rendering viewpoints provided below. The contractor will be allowed to supplement the four required views with additional viewpoints if desired to convey the aesthetic design.
 - **View 1: Land Based View Focused on Main Span.** The purpose of this view is to provide a representation of overall bridge elements from land, showing pier shapes, overlooks,

shade structures, highway lighting and aesthetic lighting. Two images are required from View 1 including one daytime and one nighttime image. Coordinates and camera settings should be the same or similar to the following:

- GPS: 30.399167, -86.601222
- Elevation from ground (Standing on Dock): 6'
- Rotation: -29.189° from North, 91.19° Up
- Film Lens: 35mm
- Focal Length: 40mm
- Zoom: 1.0
- F Stops: 2.5
- Shutter: 1/1200
- ISO: 70
- **View 2: Water Based View of Main Span and Overlook (Low Elevation):** The purpose of this view is to show detail of the pier shapes, overlook, railing and shade structure from an elevation near the water. Coordinates and camera settings should be the same or similar to the following:
 - GPS: 30.401782, -86.600086
 - Elevation from water: 38'2"
 - Rotation: 138.7° from North, 88.664° Up
 - Film Lens: 35mm
 - Focal Length: 40mm
 - Zoom: 1.0
 - F Stops: 2.5
 - Shutter: 1/1200
 - ISO: 70
- **View 3: Water Based View of Main Span and Overlook (High Elevation):** The purpose of this view is to show detail of the pier shapes, overlook, railing and shade structure from an elevation above the bridge. Coordinates and camera settings should be the same or similar to the following:
 - GPS: 30.401789, -86.600140
 - Elevation from water: 166'9"
 - Rotation: 152° from North, 59.636° Up (0 is looking straight down)
 - Film Lens: 35mm
 - Focal Length: 40mm
 - Zoom: 1.0
 - F Stops: 8
 - Shutter: 1/500
 - ISO: 100

- **View 4: Land Based View of MSE Wall:** The purpose of this view is to show details of the proposed abutment wall and scale of the low-level structure. Coordinates and camera settings should be the same or similar to the following:
 - GPS: 30.403000, -86.601861
 - Elevation from ground: 14'2"
 - Rotation: 116.218° from North, 89.26° Up, Camera tilted -1.088°
 - Film Lens: 35mm
 - Focal Length: 40mm
 - Zoom: 1.0
 - F Stops: 8
 - Shutter: 1/500
 - ISO: 100

- ❖ For the profile view depicting the structure at night, the Design-Build Firm shall show the illumination on the structure. Visual images shall provide overall aesthetic intention and details for the aesthetic elements of the bridge including, but not limited to, pier shape, roadway and shared use path lighting, aesthetic lighting of retaining walls and substructure, retaining wall finishes/graphics, scenic overlooks and canopies, pedestrian railing, etc.

C. Evaluation Criteria:

The Department shall evaluate the written Technical Proposal by each Design-Build Firm. The Design-Build Firm shall not discuss or reveal elements of the price proposal in the written proposals. A technical score for each Design-Build Firm will be based on the following criteria:

<u>Item</u>	<u>Value</u>
1. Design	30
2. Construction	35
3. Innovation	10
4. Value Added	5
 Maximum Score	 80

The following is a description of each of the above referenced items:

1. **Design (30 points)**

The Design-Build Firm is to address the quality and suitability of the following elements in the Technical Proposal:

- Structures design
- Roadway design / and safety
- Drainage design
- Environmental Design
- Design coordination plan minimizing design changes
- Geotechnical investigation plan
- Geotechnical load test program
- Minimizing impacts through design to:
 - Environment
 - Public
 - Adjacent Properties
 - Structures
- ~~Temporary Traffic Control Plan~~ Transportation Management Plan
- Incident Management Plan
- Aesthetics
- Utility Coordination and Design, including reducing impacts
- Signalization Design
- Roundabout Design
- ITS System Design
- Maintainability
- Design considerations which improve recycling and reuse opportunities
- Design Innovation

The Design-Build Firm is to address the following in the Technical Proposal: aesthetics features of the design including but not limited to the following: considerations in the geometry, suitability and consistency of structure type, structure finishes, shapes, proportions and form throughout the limits of the project.

Architectural treatments such as tiles, colors, emblems, etc. will not be considered as primary aesthetic treatments.

The Design-Build Firm is to address the following in the Technical Proposal: design and utility coordination efforts that minimize the potential for adverse impacts and project delays due to utility involvement.

The Design-Build Firm is to address the following in the Technical Proposal: development of design approaches which minimize periodic and routine maintenance. The following elements shall be considered: access to provide adequate inspections and maintenance, access to structure's lighting system, and impacts to long term maintenance costs

The Design-Build Firm is to address the following in the Technical Proposal: approach to the proposed aesthetic design, including but not limited to, considerations in the geometry and consistency of overall theme. Discussion shall also include how the proposed aesthetic features relates to the preferences detailed within the Brooks Bridge Aesthetic Online Meeting Results included as a Reference Document in the RFP. Elements provided within the Aesthetic Online Meeting Results represent the minimum level of acceptable aesthetics.

2. Construction (35 points)

The Design-Build Firm is to address the quality and suitability of the following elements in the Technical Proposal:

- Safety
- Structures construction
 - Include removal of existing structures foundations and constructability of proposed structures
 - **Include plan for protecting existing substructure from vessel collision during construction of proposed structure and fender system**
- Roadway construction
- Drainage construction
- Construction coordination plan minimizing construction changes
- Minimizing impacts through construction to:
 - Environment
 - Public
 - Adjacent Properties
 - Structures
- Implementation of the Environmental design and Erosion/Sediment Control Plan
- Implementation of the Maintenance of Traffic Plan
- Implementation of the Incident Management Plan
- Utility Coordination and Construction
- Materials proposed
- Workmanship

The Design-Build Firm is to address the following in the Technical Proposal: developing and deploying construction techniques that enhance project durability, reduce long term and routine maintenance, and those techniques which enhance public and worker safety. This shall include, but not be limited to, minimization of lane and driveway closures, lane widths, visual obstructions, construction sequencing, and drastic reductions in speed limits.

The Design-Build Firm is to address the following in the Technical Proposal: ensuring all environmental commitments are honored.

The Design-Build Firm is to address the following in the Technical Proposal: construction and utility coordination efforts that minimize the potential for adverse impacts and project delays due to utility conflicts.

The Design-Build Firm is to address the following in the Technical Proposal: approach in the construction of the proposed aesthetic features with heavy consideration in the overall maintainability and suitability.

Quality of elements provided within the Aesthetic Online Meeting Results represent the minimum level of acceptable aesthetic detail.

3. Innovation (10 points)

The Design-Build Firm is to address introducing and implementing innovative design approaches and construction techniques which address the following elements in the Technical Proposal:

- Minimize or eliminate Utility relocations
- Materials
- Workmanship
- Enhance Design and Construction aspects related to future expansion of the transportation facility
- Construction Innovation
- Design Innovation

4. Value Added (5 points)

The Design-Build is to address the following Value Added features in the Technical Proposal:

- Broadening the extent of the Value Added features of this RFP while maintaining existing threshold requirements
- Exceeding minimum material requirements to enhance durability of project components
- Providing additional Value Added project features proposed by the Design-Build Firm

The following Value Added features have been identified by the Department as being applicable to this project. The Design-Build Firm may propose to broaden the extent of these Value Added features.

Value Added Feature	Minimum Value Added Period
Value Added Asphalt	3 years
Value Added Bridge Components	5 years

D. Final Selection Formula:

The Department shall publicly open the sealed bid proposals and calculate an adjusted score using the following formula:

$$\frac{BPP}{TS} = \text{Adjusted Score}$$

BPP = Bid Price Proposal

TS = Technical Score (Combined Scores from LOI and Technical Proposal)

The Design-Build Firm selected will be the Design-Build Firm whose adjusted score is lowest.

The Department reserves the right to consider any proposal as non-responsive if any part of the Technical Proposal does not meet established codes and criteria.

E. Final Selection Process:

After the sealed bids are received, the Department will have a public meeting for the announcement of the Technical Scores and opening of sealed Bid Price Proposals. At this meeting, the Department will announce the score for each member of the Technical Review Committee, by category, for each Proposer and each Proposer's Technical Score. Following announcement of the Technical Scores, the sealed Bid Price Proposals will be opened and the adjusted scores calculated. The Department will document the preliminary bid results as presented in the meeting. The Selection Committee should meet a minimum of two (2) calendar days (excluding weekends and Department observed holidays) after the public opening of the Technical Scores and Bid Price Proposals. The Department's Selection Committee will review the evaluation of the Technical Review Committee and the Bid Price Proposal of each Proposer as to the apparent lowest adjusted score and make a final determination of the lowest adjusted score. The Selection Committee has the right to correct any errors in the evaluation and selection process that may have been made. The Department is not obligated to award the contract and the Selection Committee may decide to reject all proposals. If the Selection Committee decides not to reject all proposals, the contract will be awarded to the Proposer determined by the Selection Committee to have the lowest adjusted score.

F. Stipend Awards:

The Department has elected to pay a stipend to all non-selected Short-Listed Design-Build Firms to offset some of the costs of preparing the Proposals. The non-selected Short-Listed Design-Build Firms meeting the stipend eligibility requirements of the Project Advertisement and complying with the requirements contained in this section will ultimately be compensated. The stipend will only be payable under the terms and conditions of the Design-Build Stipend Agreement and Project Advertisement, copies of which are included with this Request for Proposal. This Request for Proposal does not commit the Department or any other public agency to pay any costs incurred by an individual firm, partnership, or corporation in the submission of Proposals except as set forth in the Design-Build Stipend Agreement. The amount of the stipend will be \$ 331,000 per non-selected Short-Listed Design-Build Firm that meets the stipend eligibility requirements contained in the Project Advertisement. The stipend is not intended to compensate any non-selected Short-Listed Design-Build Firm for the total cost of preparing the Technical and Price Proposals. The Department reserves the right, upon payment of stipend, to use any of the concepts or ideas within the Technical Proposals, as the Department deems appropriate.

In order for a Short-Listed Design-Build Firm to remain eligible for a stipend, the Short-Listed Design-Build Firm must fully execute the stipend agreement within one (1) week after the Short-List protest period for the Design-Build Stipend Agreement, Form No. 700-011-14. The Short-Listed Design-Build Firm shall reproduce the necessary copies. Terms of said agreement are non-negotiable. A fully executed copy of the Design-Build Stipend Agreement will be returned to the Short-Listed Design-Build Firm.

A non-selected Short-Listed Design-Build Firm eligible for stipend compensation must submit an invoice for a lump sum payment of services after the selection/award process is complete. The invoice should include a statement similar to the following: "All work necessary to prepare Technical Proposal and Price Proposals in response to the Department's RFP for the subject Project".

VIII. Bid Proposal Requirements.

A. Bid Price Proposal:

Bid Price Proposals shall be submitted on the Bid Blank form attached hereto and shall include one lump sum price for the Project within which the Proposer will complete the Project. The lump sum price shall include all costs for all design, geotechnical surveys, architectural services, engineering services, Design-Build Firms quality plan, construction of the Project, and all other work necessary to fully and timely complete that portion of the Project in accordance with the Contract Documents, as well as all job site and home office overhead, and profit, it being understood that payment of that amount for that portion of the Project will be full, complete, and final compensation for the work required to complete that portion of the Project. One (1) hard copy of the Bid Price Proposal shall be hand delivered in a separate sealed package to the following:

Ranae Dodson
FDOT D3 Procurement Manager
1074 Highway 90
Chipley, Florida 32428

The package shall indicate clearly that it is the Bid Price Proposal and shall identify clearly the Proposer's name, contract number, project number, and Project description. The Bid Price Proposal shall be secured and unopened until the date specified for opening of Bid Price Proposals.

Forms to be included with the Price Proposal are included in the RFP.

DIVISION I
DESIGN-BUILD
SPECIFICATIONS

**DESIGN-BUILD SPECIFICATIONS.
(REV 8-17-21) (1-22)**

FPID Number: 415474-2-52-01, 415474-2-52-02, 415474-5-56-01

**DIVISION I
GENERAL REQUIREMENTS AND COVENANTS**

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SECTION 1 DEFINITIONS AND TERMS

1-1 General.

These Specifications are written to the bidder, prior to award of the Contract, and to the Contractor. Within Divisions I and II of the specifications, sentences that direct the Contractor to perform work are written in the active voice-imperative mood. These directions to the Contractor are written as commands. In the imperative mood, the subject “the bidder” or “the Contractor” is understood.

All other requirements to be performed by others, with the exception of the Method of Measurement and the Basis of Payment Articles, have been written in the active voice, but not in the imperative mood. Sentences written in the active voice identify the party responsible for performing the action. For example, “The Engineer will determine the density of the compacted material.” Certain requirements of the Contractor may also be written in the active voice, rather than active voice-imperative mood.

1-2 Abbreviations.

The following abbreviations, when used in the Contract Documents, represent the full text shown:

AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	The Associated General Contractors of America, Inc.
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
EASA	Electrical Apparatus Service Association
EPA	Environmental Protection Agency of the United States Government
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
ISO	International Organization for Standards

MASH	AASHTO Manual for Assessing Safety Hardware
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIST	National Institute for Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
OSHA	Occupational Safety and Health Administration
SAE	Society of Automotive Engineers
SI	International System of Units
SSPC	Society of Protective Coatings
UL	Underwriters' Laboratories

Each of the above abbreviations, when followed by a number or letter designation, or combination of numbers and letters, designates a specification, test method, or other code or recommendation of the particular authority or organization shown.

Use standards, specifications, test methods, or other codes as specified in the current edition at the time of the bid opening.

1-3 Definitions.

The following terms, when used in the Contract Documents, have the meaning described:

Adjusted Score-Design/Build.

A Design/Build Contract on which the Contract award is based on the lowest adjusted score.

Advertisement.

The public announcement, as required by law, inviting bids for work to be performed or materials to be furnished, usually issued as "Notice to Contractors," or "Notice to Bidders".

Architect.

The Architect as defined in Section 481.203 (3) Florida Statutes.

Architect of Record.

The Architect or Architectural Firm registered in the State of Florida that performs services for the Design-Build Firm in connection with the design and construction of buildings.

Architecture.

The practice of architecture as defined in Section 481.203(6) Florida Statutes.

Article.

The numbered prime subdivision of a Section of these Specifications.

Bid Proposal.

Bid Proposal means a separate technical proposal and a sealed price proposal submitted by each Design-Build Firm.

Bidder.

An individual, firm, or corporation submitting a proposal for the proposed work. The word "Bidder" is also deemed to include a Design-Build Firm submitting a proposal for the proposed work.

Bridge.

A structure, including supports, erected over a depression or over an obstruction such as water, highway or railway, or for elevated roadway, for carrying traffic or other moving loads, and having a length, measured along the center of the roadway, of more than 20 feet between the inside faces of end supports. A multiple-span box culvert is considered a bridge, where the length between the extreme ends of the openings exceeds 20 feet.

Calendar day.

Every day shown on the calendar, ending and beginning at midnight.

Consultant.

The Professional Engineer or Engineering Firm, or the Architect or Architectural Firm, registered in the State of Florida to perform professional services. The consultant may be the Engineer or Architect of Record or may provide services through and be subcontracted to the Engineer or Architect of Record.

Contract.

The term "Contract" means the entire and integrated agreement between the parties thereunder and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract Documents form the Contract between the Department and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the Work and the basis of payment.

Contract Claim (Claim).

A written demand submitted to the Department by the Contractor in compliance with Section 5-12.3 seeking additional monetary compensation, time, or other adjustments to the Contract, the entitlement or impact of which is disputed by the Department.

Contract Documents.

The term "Contract Documents" includes: Advertisement , Request for Proposal (RFP), the Design and Construction Criteria Package, the Technical and Price Proposal, Certification as to Publication and Notice of Advertisement for Proposal, Appointment of Agent by Nonresident Contractors, Noncollusion Affidavit, Warranty Concerning Solicitation of the Contract by Others, Resolution of Award of Contract, Executed Form of Contract, Performance Bond and Payment Bond, Design Liability Insurance, Specifications, Plans (including revisions thereto issued during construction), Standard Plans, Addenda, written statements or transcripts or minutes of oral representation by Design-Build Firm made at oral presentations, or other information mailed or otherwise transmitted to the prospective bidders prior to the receipt of bids, work orders and supplemental agreements, all of which are to be treated as one instrument whether or not set forth at length in the form of contract.

Note: As used in Sections 2 and 3 only, Contract Documents do not include work orders, and supplemental agreements. As used in Section 2 only, Contract Documents do not include

Resolution of Award of Contract, Executed Form of Contract, and Performance and Payment Bond.

Contract Bond.

The security furnished by the Contractor and the surety as a guaranty that the Contractor shall fulfill the terms of the Contract and pay all legal debts pertaining to the construction of the project.

Contract Letting.

The date that the Department opened the sealed price proposal of the bid proposals.

Contract Time.

The number of calendar days allowed for completion of the Contract work, including authorized time extensions.

Contractor.

The individual, firm, joint venture, or company contracting with the Department to perform the work. The word “Contractor” is also deemed to include a Design-Build Firm contracting with the Department for performance of work, including all engineering services and furnishing of materials.

Contractor’s Engineer of Record (EOR).

A Professional Engineer registered in the State of Florida, who undertakes the design and drawing of components of the permanent structure for repair designs and details of the permanent work.

The Contractor’s Engineer of Record may also serve as the Engineer of Record. The Contractor’s Engineer of Record may also serve as the Specialty Engineer.

The Contractor’s Engineer of Record must be an employee of a pre-qualified firm. The firm shall be pre-qualified in accordance with the Rules of the Department of Transportation, Chapter 14-75. Any Corporation or Partnership offering engineering services must hold a Certificate of Authorization from the Florida Department of Business and Professional Regulation.

As an alternate to being an employee of a pre-qualified firm, the Contractor’s Engineer of Record may be a Department-approved Specialty Engineer. For items of the permanent work declared by the State Construction Office to be “major” or “structural”, the work performed by a Department-approved Specialty Engineer must be checked by another Department-approved Specialty Engineer. An individual may become a Department-approved Specialty Engineer if the individual meets the Professional Engineer experience requirements set forth within the individual work groups in the Rules of the Department of Transportation, Chapter 14-75. Department-approved Specialty Engineers are listed on the State Construction Office Website. Department-approved Specialty Engineers will not be authorized to perform redesigns or Cost Savings Initiative Proposal designs of items fully detailed in the Plans.

Controlling Work Items.

The activity or work item on the critical path having the least amount of total float. The controlling item of work will also be referred to as a Critical Activity.

Culverts.

Any structure not classified as a bridge that provides an opening under the roadway.

Delay.

Any unanticipated event, action, force or factor, which extends the Contractor's time of performance of any controlling work item under the Contract. The term "delay" is intended to cover all such events, actions, forces or factors, whether styled "delay", "disruption", "interference", "impedance", "hindrance", or otherwise, which are beyond the control of and not caused by the Contractor, or the Contractor's subcontractors, material men, suppliers or other agents. This term does not include "extra work".

Department.

State of Florida Department of Transportation.

Design and Construction Criteria Package (DCC).

Criteria for Contractor Prepared Design, Project Concept Report, Scope of Work and Service, and all other documents attached thereto; and which, together set forth the criteria for work to be provided to complete this Contract.

Design-Build (D-B).

Design-Build means combining the project's design and construction phases, and in some cases construction engineering and inspection, into a single Contract.

Design-Build Firm.

Design-Build Firm means any company, firm, partnership, corporation, association, joint venture, or other legal entity permitted by law to practice engineering, architecture, and construction contracting, as appropriate, in the State of Florida.

Developmental Specification.

See definition for Specifications.

Engineer.

The Director, Office of Construction, acting directly or through duly authorized representatives; such representatives acting within the scope of the duties and authority assigned to them.

Note: In order to avoid cumbersome and confusing repetition of expressions in these Specifications, it is provided that whenever anything is, or is to be done, if, as, or, when, or where "acceptable, accepted, approval, approved, authorized, condemned, considered necessary, contemplated, deemed necessary, designated, determined, directed, disapproved, established, given, indicated, insufficient, ordered, permitted, rejected, required, reserved, satisfactory, specified, sufficient, suitable, suspended, unacceptable, or unsatisfactory," it shall be understood as if the expression were followed by the words "by the Engineer," "to the Engineer," or "of the Engineer."

Engineer of Record (EOR).

The Professional Engineer or Engineering Firm registered in the State of Florida that develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the Technical Proposal, Division II and III Specifications, Plans, and other

documents as required by the Request for Proposal. The EOR shall be a part of the Design Build Firm. The EOR may serve as the Contractor's EOR or as the Specialty Engineer.

Equipment.

The machinery and equipment, together with the necessary supplies for upkeep and maintenance thereof, and all other tools and apparatus necessary for the construction and acceptable completion of the work.

Extra Work.

Any "work" which is required by the Engineer to be performed and which is not otherwise covered or included in the project by the existing Contract Documents, whether it is in the nature of additional work, altered work, deleted work, work due to differing site conditions, or otherwise. This term does not include a "delay".

Federal, State, and Local Rules and Regulations.

The term "Federal, State and Local Rules and Regulations" includes: any and all Federal, State, and Local laws, bylaws, ordinances, rules, regulations, orders, permits, or decrees including environmental laws, rules, regulations, and permits.

Highway, Street, or Road.

A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Holidays.

Days designated by the State Legislature or Cabinet as holidays, which include, but are not limited to, New Year's Day, Martin Luther King's Birthday, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and the following Friday, and Christmas Day.

Inspector.

An authorized representative of the Engineer, assigned to make official inspections of the materials furnished and of the work performed by the Contractor.

Laboratory.

The official testing laboratory used by the Department.

Low Bid Design Build.

A Design/Build Contract on which the Contract award is based on the lowest responsive bid.

Materials.

Any substances to be incorporated in the work under the Contract.

Median.

The portion of a divided highway or street separating the traveled ways for traffic moving in opposite directions.

Plans.

The signed and sealed Plans prepared by the EOR and accepted by the Department, including reproductions thereof, showing the location, character, dimensions, and details of the work. Upon review by the Department, the Plans will be stamped "Released for Construction" dated and initialed by the reviewer.

Project.

Project means the project to be designed and constructed as described in the public advertisement.

Project Manager.

The Department's designee responsible for the administration of the Design-Build Contract.

Proposal.

Technical Proposal: The bidder's submittal in response to the technical requirements set forth in the Department's RFP.

Price Proposal: The bidder's submittal, on the prescribed form, in response to the price requirements set forth in the Department's RFP.

Proposal Guaranty.

The security furnished by the bidder as guaranty that the bidder will enter into the Contract for the work if the Department accepts the proposal.

Request for Proposal. (RFP)

The package to be provided to the short-listed design-build firms in the adjusted score design-build method and to those design-build firms requesting a RFP in the low bid design-build method. The RFP defines all functions and responsibilities of the firm.

Right-of-Way.

The land that the Department has title to, or right of use, for the road and its structures and appurtenances, and for material pits furnished by the Department.

Roadbed.

The portion of the roadway occupied by the subgrade and shoulders.

Roadway.

The portion of a highway within the limits of construction.

Secretary.

Secretary of Transportation, State of Florida Department of Transportation, acting directly or through an assistant or other representative authorized by him; the chief officer of the Department of Transportation.

Section.

A numbered prime division of these Specifications.

Shoulder.

The paved or unpaved portion of the roadbed outside the edges of the traveled way or back of curb, and extending to the top of front slopes.

Special Event.

Any event, including but not limited to, a festival, fair, run or race, motorcade, parade, civic activity, cultural activity, charity or fund drive, sporting event, or similar activity designated in the Contract Documents.

Special Provisions.

See definition for Specifications.

Specialty Engineer.

A Professional Engineer registered in the State of Florida, who undertakes the design and drawing preparation of components, systems, or installation methods and equipment for specific temporary portions of the project work or for special items of the permanent works not fully detailed in the Plans and required to be furnished by the Contractor. The Specialty Engineer may also provide designs and details, repair designs and details, or perform Engineering Analysis for items of the permanent work declared by the State Construction Office to be “minor” or “non-structural”.

For items of work not specifically covered by the Rules of the Department of Transportation, a Specialty Engineer is qualified if he has the following qualifications:

1. Registration as a Professional Engineer in the State of Florida.
2. The education and experience necessary to perform the submitted design as required by the Florida Department of Business and Professional Regulation.

Specifications.

The directions, provisions, and requirements contained herein, together with all stipulations contained in the Contract Documents, setting out or relating to the method and manner of performing the work, or to the quantities and qualities of materials and labor to be furnished under the Contract.

Standard Specifications: “Standard Specifications for Road and Bridge Construction” an electronic book, applicable to all Department Contracts containing adopted requirements, setting out or relating to the method or manner of performing work, or to the quantities and qualities of materials and labor.

Supplemental Specifications: Approved additions and revisions to the Standard Specifications, applicable to all Department Contracts.

Special Provisions: Specific clauses adopted by the Department that add to or revise the Standard Specifications or supplemental specifications, setting forth conditions varying from or additional to the Standard Specifications applicable to a specific project.

Technical Special Provisions: Specifications, of a technical nature, prepared, signed, and sealed by an Engineer registered in the State of Florida other than the State Specifications Engineer or his designee, that are made part of the Contract as an attachment to the Contract Documents.

Developmental Specification: A specification developed around a new process, procedure, or material.

Standard Plans.

“Standard Plans for Road and Bridge Construction”, an electronic book describing and detailing aspects of the Work. Where the term Design Standards appear in the Contract Documents, it will be synonymous with Standard Plans.

Standard Specifications.

See definition for Specifications.

State.

State of Florida.

Subarticle.

A headed and numbered subdivision of an Article of a Section of these Specifications.

Subgrade.

The portion of the roadbed immediately below the base course or pavement, including below the curb and gutter, valley gutter, shoulder and driveway pavement. The subgrade limits ordinarily include those portions of the roadbed shown in the Plans to be constructed to a design bearing value or to be otherwise specially treated. Where no limits are shown in the Plans, the subgrade section extends to a depth of 12 inches below the bottom of the base or pavement and outward to 6 inches beyond the base, pavement, or curb and gutter.

Substructure.

All of that part of a bridge structure below the bridge seats, including the parapets, backwalls, and wingwalls of abutments.

Superintendent.

The Contractor’s authorized representative in responsible charge of the work.

Superstructure.

The entire bridge structure above the substructure, including anchorage and anchor bolts, but excluding the parapets, backwalls, and wingwalls of abutments.

Supplemental Agreement.

A written agreement between the Contractor and the Department, and signed by the surety, modifying the Contract within the limitations set forth in these Specifications.

Supplemental Specifications

See definition for Specifications.

Surety.

The corporate body that is bound by the Contract Bond with and for the Design Build Firm and responsible for the performance of the Contract and for payment of all legal debts pertaining thereto.

Technical Special Provisions Requirements.

See definition for Specifications.

Traveled Way.

The portion of the roadway for the movement of vehicles, exclusive of shoulders and bicycle lanes.

Unilateral Payment.

A payment of money made to the Contractor by the Department pursuant to Section 337.11(12), Florida Statutes (2009), for sums the Department determines to be due to the Contractor for work performed on the project, and whereby the Contractor by acceptance of such payment does not waive any rights the Contractor may otherwise have against the Department for payment of any additional sums the Contractor claims are due for the work.

Work.

All labor, materials and incidentals required executing and completing the requirements of the Contract including superintendence, use of equipment and tools, and all services and responsibilities prescribed or implied.

Work Order.

A written agreement between the Contractor and the Department modifying the Contract within the limitations set forth in these Specifications. Funds for this agreement are drawn against the Initial Contingency Pay Item or a Contingency Supplemental Agreement.

Working Day.

Any calendar day on which the Contractor works or is expected to work in accordance with the approved work progress schedule.

SECTION 2 PROPOSAL REQUIREMENTS AND CONDITIONS

2-1 Prequalification of Bidders.

Bidders shall prequalify in accordance Section 337-14, Florida Statutes and Rule 14-22, Florida Administrative Code.

Pursuant to Section 287.133, Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit the following:

1. A bid on a contract to provide any goods or services to a public entity.
2. A bid on a contract with a public entity for the construction or repair of a public building or public work.
3. Bids on leases of real property to a public entity.

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 F.S., for Category Two. All restrictions apply for a period of 36 months from the date of placement on the convicted vendor list.

2-2 Proposals.

Obtain Proposal Forms under the conditions stipulated in the Advertisement. The Advertisement states the location and description of the work to be performed; the estimate of the various quantities (if applicable); the pay items of work to be performed (if applicable); the Contract Time; the amount of Proposal Guaranty; and the date, time, and place of the opening of proposals.

The Plans, Specifications and other documents designated in the Advertisement are part of the Proposal, whether attached or not. Do not detach any papers bound with or attached to the Proposal.

2-3 Interpretation of Estimated Quantities.

The Bidder is responsible for the determination of the quantities for those items constructed within the authorized plan limits or dimensions.

The Department does not assume any responsibility for any incidental information in bid documents that may be construed as a quantity of work and/or materials.

2-3.1 Lump Sum Contracts: Not applicable.

2-3.2 Contracts other than Lump Sum: Not applicable.

2-4 Examination of Contract Documents and Site of Work.

Examine the Contract Documents and the site of the proposed work carefully before submitting a Proposal for the work contemplated. Investigate the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of all Contract Documents.

Direct all questions to the Department by posting them to the Department's website at the following URL address:

<https://fdotwp1.dot.state.fl.us/BidQuestionsAndAnswers/Proposal.aspx/SearchProposal>.

Questions posted to this site before the deadlines shown in the Schedule of Events in the RFP will be responded to by the Department. For questions posted after the deadlines shown in the Schedule of Events in the RFP, an answer cannot be assured. For all questions posted before the deadlines shown in the Schedule of Events in the RFP, the Department will provide and post responses at the same website before the deadlines shown in the Schedule of Events in the RFP. Take responsibility to review and be familiar with all questions and responses posted to this website make any necessary adjustments in the proposal accordingly. If the Department's web site cannot be accessed, contact Ranae Dodson at ranae.dodson@dot.state.fl.us or (850) 330-1333.

When, in the sole judgment of the Department, responses to questions require Plans revisions, specifications revisions and/or addenda, the Contracts Office will issue them as necessary.

The Department does not guarantee the details pertaining to borings, as shown on the Plans, to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated. The Bidder shall examine boring data, where available, and make their own interpretation of the subsoil investigations and other preliminary data, and shall base their bid solely on their own opinion of the conditions likely to be encountered.

The Bidder's submission of a Proposal is prima facie evidence that the Bidder has made an examination as described in this Article.

2-5 Preparation of Proposals.

2-5.1 General: A proposal is irregular or non-responsive if it does not meet the requirements of the RFP and may be rejected by the Department.

If the proposal is made by an individual, either in the Bidder's own proper person or under a trade or firm name, the Bidder shall execute the proposal under the Bidder's signature and indicate the firm's bidding office street address. If the Proposal is made by a partnership, execute the Proposal by setting out in full, the names of the partners and the firm name of the partnership, if any, and have two or more of the general partners or authorized person sign the Proposal. Also, indicate the firm's bidding office street address. If the Proposal is made by a corporation, execute the Proposal by setting out in full the corporate name and have the president or other legally authorized corporate officer or agent sign the proposal. Also, affix the corporate seal, and indicate the corporation's bidding office street address. If the Proposal is made by a limited liability company, execute the Proposal by setting out the company name and have the manager or authorized member sign the Proposal. If the Proposal is made by a limited venture, execute the Proposal by setting out the joint venture name and have the authorized parties sign the Proposal.

If the Proposal is made by a joint venture, the individual so empowered by a properly executed Declaration of Joint Venture and Power of Attorney Form shall execute the Proposal.

The Bidder will be required to identify the EOR, who will be responsible for the engineering design portion on the Contract required in the RFP.

If required by the RFP, establish the number of Calendar Days necessary to complete the work in accordance with the Contract Documents and show this number of Calendar Days in the Proposal. For purposes of this Contract, this number of Calendar Days will serve as the Original Contract Time. For this Contract, the Department will reject any bid in which the Bidder submits proposed Contract Time in excess of the Department's established Maximum Contract Time identified in the RFP.

2-5.2 Declaration of Noncollusion: File with the Department Form 375-020-12, contained in the proposal, which includes an unsworn statement executed by, or on behalf of, the person, firm, association, or corporation submitting the bid certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid. The Department will not consider any bid unless such form is properly completed in accordance with the requirements shown thereon.

2-6 Rejection of Irregular Proposals.

A Proposal is irregular and the Department may reject such Proposal if the Proposal shows omissions, alterations of form, additions not specified or required, conditional or unauthorized alternate bids, or irregularities of any kind; or if the unit prices are obviously unbalanced, or if the cost is in excess of or below the reasonable cost analysis values.

When the Department provides for alternate bids in the Proposal Form and the bidder submits non-computer-generated proposal form sheets, make only one entry for each alternate. A Proposal that provides for alternative bids is irregular and the Department may reject such Proposal if the Bidder makes entries for more than one alternate.

2-7 Guaranty to Accompany Proposals.

The Department will not consider any Proposal unless accompanied by a Proposal

Guaranty of the character and amount indicated in the Advertisement, and unless made payable to the Florida Department of Transportation. Submit the Proposals with the understanding that the successful Bidder shall furnish a Contract Bond pursuant to the requirements of 3-5.

The Bidder's Proposal Guaranty is binding for all projects included in the Contract awarded to the Contractor pursuant to the provisions of this Subarticle.

2-8 Delivery of Proposals.

Submit all price proposals in a sealed envelope, bearing on the outside the name of the Bidder, the Bidder's address, and the Financial Project Number of the project for which the Bidder submitted the bid. For Proposals that are submitted by mail, enclose the Proposal in a sealed envelope, marked as directed above. Enclose the sealed envelope in a second outer envelope addressed to the Department, at the place designated in the RFP. For a Proposal that is not submitted by mail, deliver the Proposal to the Contracts Office of the Department, or to the place as designated in the RFP. The Department will return Proposals received after the time set for opening bids to the bidder unopened.

2-9 Withdrawal or Revision of Proposals. (Bid Proposal Only)

A Bidder may withdraw a Proposal after submission, provided the Department receives a written request to withdraw the proposal prior to the time set for opening of bids. The resubmission of any Proposal withdrawn under this provision is subject to the provisions of 2-8. Legible facsimile (FAX) price proposal changes will be accepted if received in full at the fax number listed in the Bid Solicitation Notice by the time price proposals are due on the day of the bid opening and provided that all of the following conditions are met:

1. The Bidder's name is the same on the faxed Proposal change as shown on the original Proposal.
2. The proposal change includes the following:
 - a. The correct Proposal ID.
 - b. The correct bid item number for which the price is being changed and the respective unit price change.
 - c. The correct revised total per item.
 - d. The revised total bid amount.
 - e. The signature of the President or Vice President of the Company.

Faxed price proposal changes failing to meet all of these requirements will not be considered and will not change the original bid.

The Department will not be responsible for any communications or fax machine breakdowns, transmission interruptions, delays, or any other problems that interfere with the receipt of faxed price Proposal changes as required above either at the Bidder's fax location, at the Department's fax location, or anywhere between these locations. Receipt or non-receipt of a faxed price Proposal change will not be considered grounds for a bid protest.

2-10 Opening of Proposals.

The Department will open and publicly announce technical scores (if applicable) and price proposals at the time and place indicated in the RFP. The Department invites Bidders, their authorized agents, and other interested parties to attend.

2-11 Disqualification of Bidders.

The Department may disqualify any Bidder and reject the Bidder's Proposal or Proposals for any of the following reasons:

1. The submission of more than one Proposal for the same work from an individual, firm, or corporation under the same or a different name.
2. Evidence that one Bidder has a financial interest in the firm of another bidder for the same work.
3. Evidence of collusion among Bidders. The Department will not recognize a participant in such collusion as a Bidder for any future work of the Department until the Department reinstates such participant as a qualified Bidder.
4. Failure to qualify in accordance with 2-1.
5. Uncompleted work on other projects that, in the judgment of the Department, could hinder or prevent the prompt completion of the proposed work.
6. Failure to pay or satisfactorily settle all bills due for labor and material on other Contracts in force at the time of advertisement for bids.
7. Default under a previous Contract.
8. Employment of unauthorized aliens in violation of Section 274A (e) of the Immigration and Nationality Act.
9. Falsification on any form required by the Department.
10. The submission of a Proposal that was not solicited by the Department.
11. Design-Build Firms wherein the same EOR is identified in more than one proposal.

2-12 Material, Samples and Statement.

The Department may require that the Bidder furnish a statement of the origin, composition, and manufacture of any and all materials to be used in the construction of the work, together with samples that may be subjected to the tests provided for in these Specifications to determine the materials' quality and fitness for the work.

SECTION 3 AWARD AND EXECUTION OF CONTRACT

3-1 Consideration of Bids.

1. Technical and price proposals will be received from those firms deemed to be the most highly qualified by the Selection Committee and Proposal Evaluators and approved under Rule 14-91 F.A.C. A pre-proposal conference may be held shortly after the posting of the short listed firms. Proposals shall be segmented into two packages:

a. Technical Proposal. A technical proposal shall include preliminary design Plans, preliminary specifications and special requirements, technical reports, calculations, proposed Contract Time along with schedules, and other data requested in response to the RFP, which includes the Design and Construction Criteria Package.

b. Price Proposal. Price proposals shall include one lump sum price for all design, geotechnical surveys, and construction of the proposed project, preliminary design submittal reports, services, and all other data requested in response to the RFP, which includes the Design

and Construction Criteria Package. The price proposal shall also include the Design-Build Firm's proposed Contract Time, when required by the RFP.

1. Low Bid: For the purpose of award, after opening and reading the proposals, the Department will consider the total Contract Lump Sum Price as the bid. On this basis, the Department will compare the amounts of each bid and make the results of such comparison available to the public. Until the actual award of the Contract, however, the Department reserves the right to reject any or all proposals and to waive technical errors that the Department may deem best for the interest of the State. In the event of any discrepancy in the two entries of the Contract Lump Sum Price, the Department will evaluate the bid based on the lump sum price shown in words.

2. Adjusted Score: For the purposes of this Contract, the Daily Value in the pre-established, per day monetary amount stated in the RFP to which the Design-Build Firm is responding. The proposed Contract Time in days included in the Design-Build Firm's Price Proposal shall be multiplied times the Daily Value and the product added to the Lump Sum Price Proposal to determine the Time-Adjusted Price. The lowest responsive bid will be determined by the Department as the lowest Time-Adjusted Price. The Time-Adjusted Price will be used for selection purposes only and shall not affect the Department's liquidated damages schedule or constitute an incentive/disincentive to the Contract.

2. The Proposal Evaluators shall review the technical proposal submitted by each firm and shall establish a technical score for each firm based on the criteria identified in the RFP and any addenda. Scores are provided to Professional Services who use them in calculating the adjusted score, which is announced at the public opening. (For low-bid Design-Build projects the Review Committee will approve award to the lowest responsive bid).

3-1.1 Selection for Design-Build Contract:

1. The Selection Committee shall be comprised of the District Secretary, the appropriate Director, the appropriate Office Head, or their designees.

2. The RFP shall set a date for publicly announcing the technical scores (if applicable) and opening the price proposals. The Department shall notify all firms submitting technical and price proposals at least three days prior to the opening date. The notification shall include the date, time, and place of the opening of the price proposals for the project.

3. The Department shall publicly announce the technical scores (if applicable) and open the sealed price proposals at the time and place indicated in the RFP. On Adjusted Score Design-Build Contracts, the firm selected will be the responsive firm that has the lowest adjusted score. On Low Bid Design-Build Contracts, the firm selected will be the responsive firm that has the lowest price proposal. Unless all proposals are rejected, the Final Selection Committee may approve an award to the responsive firm with the lowest adjusted score on Adjusted Score Design-Build Contracts or to the responsive firm with the lowest price proposal on Low Bid Design-Build Contracts and enter into a Contract for the price proposed. The Department reserves the right to reject all bid proposals. The Department invites bidders, their authorized agents, and other interested parties to attend.

4. The Department shall provide written notification by mail to each firm submitting a proposal of the award of the project or rejection of all proposals within 30 days of the opening of the bid proposals.

3-2 Award of Contract.

3-2.1 General: If awarded, the Department will award the Contract within 50 days after the opening of the proposals, unless the Special Provisions change this time limit or the Bidder

and the Department extends the time period by mutual consent. Prior to award of the Contract by the Department, a Contractor must provide proof of authorization to do business in the State of Florida.

The award of the Contract shall be as described in Article 3-1.

3-2.2 Bids Exceeding Bidder's Maximum Capacity Rating: Prior to award of the Contract, the Department will address bids exceeding a Bidder's maximum capacity rating, and the resulting impact on the Bidder's qualification to bid, in accordance with Florida Administrative Code Rules 14-22.003 and 14-22.009.

3-3 Cancellation of Award.

The Department reserves the right to cancel the award of any Contract at any time before the execution of the Contract by all parties, with no compensation due any of the Bidders.

3-4 Release of Proposal Guaranty.

The Department will release all Proposal Guaranties except those of the lowest responsible Bidders (short listed firms not selected) immediately following the opening and checking of the Proposals. The Department will immediately release the Proposal Guaranties of the short listed firms not selected after the successful Bidder delivers the executed Contract and a satisfactory bond to the Department, except that the Department will not retain the Proposal Guaranty of the next-to-lowest responsible Bidder longer than 50 days after the opening of the Proposals unless the Department awards the Contract to the next lowest responsible Bidder prior to the expiration of this time limit.

3-5 Contract Bond Required.

3-5.1 General Requirements of the Contract Bond: Upon award, furnish to the Department, and maintain in effect throughout the life of the Contract, an acceptable Contract Bond in a sum at least equal to the amount of the Contract. Execute such Contract Bond on Department Form 375-020-14. Obtain the Contract Bond from a Surety licensed to conduct business in the State of Florida, meeting all of the requirements of the laws of Florida and the regulations of the Department, and having the Department's approval. Ensure that the Surety's Florida Licensed Insurance Agent's name, address, and telephone number is clearly stated on the Contract Bond form.

The Department may waive the requirement for all or a portion of a Contract Bond if:

1. The Contract amount is \$250,000 or less, and the Department determines that the project is of a noncritical nature and that nonperformance will not endanger the public health, safety, or property;
2. The Contractor is a qualified nonprofit agency for the blind or for the other severely handicapped under Section 413.036(2), Florida Statutes; or,
3. The Contractor uses a subcontractor that is a qualified nonprofit agency for the blind or for the other severely handicapped under Section 413.036(2), Florida Statutes. However, the Department may not waive more than the amount of the subcontract.

The Department may require alternate means of security if it waives the requirement for a Contract Bond.

3-5.2 Continued Acceptability of Surety: Provide a Contract Bond that remains acceptable to the Department throughout the life of the Contract. In the event that the Surety executing the Contract Bond, although acceptable to the Department at the time of execution of

the Contract, subsequently becomes insolvent or bankrupt, or becomes unreliable or otherwise unsatisfactory due to any cause that becomes apparent after the Department's initial approval of the Surety, then the Department may require that the Contractor immediately replace the Contract Bond with a similar bond issued by a Surety that is reliable and acceptable to the Department. In such an event, the Department will bear all costs of the premium for the new Contract Bond, after deducting any amounts that are returned to the Contractor from their payment of premium on the original Contract Bond.

3-5.3 Default by Contractor: In case of default on the part of the Contractor, the Department will charge against the Contract Bond all expenses for services incidental to ascertaining and collecting losses under the Contract Bond, including accounting, engineering, and legal services, together with any and all costs incurred in connection with renegotiation of the Contract.

3-5.4 Surety to Furnish Legal Defense as to Payment and Performance Claims or Suits: The Surety shall indemnify and provide defense for the Department when called upon to do so for all claims or suits against the Department, by third parties, pertaining to Contractor payment or performance issues arising out of the Contract where the Contractor has failed to timely provide the Department such defense. It is expressly understood that the monetary limitation on the extent of the indemnification shall be the approved Contract amount, which shall be the original Contract amount as may be modified by subsequent Supplemental Agreements.

3-5.5 Liability for Wrongful or Criminal Act by Contractor: The principal and Surety executing the Contract Bond shall be liable to the State in any civil action that might be instituted by the Department or any officer of the State authorized in such cases, for double any amount in money or property the State might lose, or be overcharged, or otherwise be defrauded of by any wrongful or criminal act of the Contractor, their agent or their employee.

3-6 Execution of Contract and Contract Bond.

Within 10 calendar days, excluding Saturdays, Sundays, and Holidays after receipt of the Contract award, execute the necessary agreements to enter into a Contract with the Department and return the Contract along with a satisfactory Contract Bond and documentation evidencing all insurance required by 7-13 to the Department's Contracts Office that awarded the Contract. For each calendar day, excluding Saturdays, Sundays, and state holidays, the Contractor is late in delivering to the Department's Contracts Office all required documents in properly executed form, the Department will deduct one day from the Contract Time. The Department will not be bound by any Proposal until the Department executes the associated Contract.

The Department will execute the Contract within 5 calendar days, excluding Saturdays, Sundays, and state holidays after receipt of the signed Contract, necessary agreements, Contract Bond, and all other required documents from the Contractor.

3-7 Failure by Contractor to Execute Contract and Furnish Bond.

In the event that the Contractor fails to execute the awarded Contract and to submit an acceptable Contract Bond, as prescribed in 3-5 and 3-6, within 10 calendar days, excluding Saturdays, Sundays, and Holidays, of the receipt of the Contract award, the Department may annul the award, causing the Contractor to forfeit the Proposal Guaranty to the Department and any rights of receiving a stipend as liquidation of damages sustained. The Department may then award the Contract to the next lowest responsible Bidder, re-advertise, or accomplish the Work using alternate resources.

3-8 Audit of Contractor's Records.

Upon execution of the Contract, the Department reserves the right to conduct an audit of the Contractor's records pertaining to the project. The Department or its representatives may conduct an audit, or audits, at any time prior to final payment, or thereafter pursuant to 5-13. The Department may also require submittal of the records from the Contractor or any subcontractor, or material supplier. As the Department deems necessary, records include all books of account, supporting documents, and papers pertaining to the cost of performance of the Work.

Retain all records pertaining to the Contract for a period of not less than three years from the date of the Engineer's final acceptance of the project, unless a longer minimum period is otherwise specified. Upon request, make all such records available to the Department or its representative(s). For the purpose of this Article, records include but are not limited to all books of account, supporting documents, and papers that the Department deems necessary to ensure compliance with the provisions of the Contract Documents.

If the Contractor fails to comply with these requirements, the Department may disqualify or suspend the Contractor from bidding on or working as a subcontractor on future Contracts.

Ensure that the subcontractors provide access to their records pertaining to the project upon request by the Department.

Comply with Section 20.005(5), Florida Statutes, and incorporate in all subcontracts the obligation to comply with Section 20.005(5), Florida Statutes.

3-9 Public Records.

The Contractor shall comply with Chapter 119, Florida Statutes. Specifically, the Contractor shall:

1. Keep and maintain public records required by the Department to perform the service.

2. Upon request from the Department's custodian of public records, provide the Department public with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by rule or law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion of the Contract if the Contractor does not transfer the records to the Department.

4. Upon completion of the Contract, transfer at no cost to the Department, all public records in possession of the Contractor or keep and maintain public records required by the Department to perform the service. If the Contractor transfers all public records to the Department upon completion of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the Department, upon request from the Department's custodian of public records, in a format that is compatible with the information technology systems of the Department.

Failure to comply with Chapter 119, Florida Statutes, and the Article 3-9, shall be grounds for immediate unilateral termination of this Contract by the Department pursuant to 8-9.1.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

**District 3
850-330-1391
D3prcustodian@dot.state.fl.us
Florida Department of Transportation
District 3 - Office of General Counsel
1074 Highway 90 East
Chipley, FL 32428**

SECTION 4 SCOPE OF THE WORK

4-1 Intent of Contract.

The intent of the Contract is to provide for the engineering services, furnishing of materials, construction, and completion in every detail of the work described in this Contract. The Design-Build Firm shall furnish all engineering and all of its associated direct and indirect costs, construction labor, materials, equipment, supervision, tools, transportation, and supplies required to complete the work in accordance with the requirements of the Contract Documents. The terms and conditions of this Contract are fixed price and fixed time. The Contractor's submitted bid (time and cost) is to be a lump sum bid for completing the scope of work detailed in the Contract.

The Design-Build Firm shall have all liability and responsibility for all unknowns and/or differing site conditions; and including but not limited to any or all utilities, subsoil conditions, permits, etc. of any nature or kind, unless otherwise stated in the Contract. In the event that unforeseeable work is provided for in the Contract, such work shall be paid for in accordance with 4-3.2.

No substantial change, as determined at the sole discretion of the Engineer, in general plan or character of the work shall be made without written agreement by the Engineer. The Plans shall be dated, stamped, and signed and sealed by the EOR and shall be transmitted to the Engineer for the project records. The Design-Build Firm shall schedule the transmittal so that the Engineer receives the Plans and shop drawings at least 15 working days prior to commencement of any portion of work described in the Plans or as specifically required in the RFP.

Pay adjustments as shown in the Contract Documents, regardless of where those pay adjustments are referenced, shall not apply, except as provided in 9-2, Scope of Payments.

Upon execution of the Contract, conduct all written communication associated with the Contract using a paperless electronic means. When the Specifications require a submission of documentation, such documents must be submitted and exchanged electronically using the Department provided web-based collaboration site.

All documents requiring a signature must be executed electronically by both parties in accordance with Chapter 668, Florida Statutes, and have the same force and effect as a written signature. All persons requiring access to the collaboration site shall be identified during the

preconstruction conference. Persons may be added or removed during the life of the Contract on an as needed basis. All signatories must acquire digital signature certificates.

4-2 Work not covered by Standard Specifications.

Proposed construction and any contractual requirements not covered by these Standard Specifications may be covered by Contract Plan notes or by Supplemental Specifications, Special Provisions or Technical Specifications for the Contract and all requirements of such Supplemental Specifications, Special Provisions or Technical Specifications shall be considered as a part of these Specifications.

4-3 Alteration of Plans or of Character of Work.

4-3.1 General: The Engineer reserves the right to make, at any time prior to or during the progress of the work, alterations or changes, whether a significant change or not, and such alterations in the details of construction, whether a substantial change or not, including but not limited to alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable by the Engineer. Such alterations or changes shall not constitute a breach of Contract, shall not invalidate the Contract, nor release the Surety from any liability arising out of this Contract or the surety bond. The Contractor agrees to perform the work, as altered or changed, the same as if it had been a part of the original Contract.

The term “significant change” applies only when the Engineer determines that the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction. The allowance due to the Contractor will be in accordance with 4-3.2, below.

In the instance of an alleged “significant change”, the determination by the Engineer shall be conclusive. If the determination is challenged by the Contractor in any proceeding, the Contractor must establish by clear and convincing proof that the determination by the Engineer was without any reasonable basis.

4-3.2 Increase, Decrease or Alteration in the Work: The Engineer reserves the right to make alterations in the character of the work which involve a substantial change in the nature of the design or in the type of construction or which materially increases or decreases the cost or time of performance. Such alteration shall not constitute a breach of Contract, shall not invalidate the Contract or release the Surety.

Notwithstanding that the Contractor shall have no formal right whatsoever to any extra compensation or time extension deemed due by the Contractor for any cause unless and until the Contractor follows the procedures set forth in 5-12.2 for preservation, presentation and resolution of the claim, the Contractor may at any time, after having otherwise timely submitted a notice of intent to claim or preliminary time extension request pursuant to 5-12.2 and 8-7.3.2, submit to the Department a request for equitable adjustment of compensation or time or other dispute resolution proposal. The Contractor shall in any request for equitable adjustment of compensation, time, or other dispute resolution proposal certify under oath and in writing, in accordance with the formalities required by Florida Law, that the request is made in good faith, that any supportive data submitted is accurate and complete to the Contractor’s best knowledge and belief, and that the amount of the request accurately reflects what the Contractor in good faith believes to be the Department’s responsibility. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor. Any such certified statements of entitlement and costs shall be subject to the audit provisions set forth in 5-12.14. While the submittal or review of a duly certified request for equitable adjustment shall neither

create, modify, nor activate any legal rights or obligations as to the Contractor or the Department, the Department will review the content of any duly certified request for equitable adjustment or other dispute resolution proposal, with any further action or inaction by the Department thereafter being in its sole discretion. Any request for equitable adjustment that fails to fully comply with the certification requirements will not be reviewed by the Department.

The monetary compensation provided for below constitutes full and complete payment for such additional work and the Contractor shall have no right to any additional monetary compensation for any direct or indirect costs or profit for any such additional work beyond that expressly provided below. The Contractor shall be entitled to a time extension only to the extent that the performance of any portion of the additional work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. All time related costs for actual performance of such additional work are included in the compensation already provided below and any time extension entitlement hereunder will be without additional monetary compensation. The Contractor shall have no right to any monetary compensation or damages whatsoever for any direct or indirect delay to a controlling work item arising out of or in any way related to the circumstances leading up to or resulting from additional work (but not relating to the actual performance of the additional work, which is paid for as otherwise provided herein), except only as provided for under 5-12.6.2.1.

4-3.2.1 Allowable Costs for Extra Work: The Engineer may direct in writing that extra work be done and, at the Engineer’s sole discretion, the Contractor will be paid pursuant to an agreed Supplemental Agreement or in the following manner:

1. Labor and Burden: The Contractor will receive payment for actual costs of direct labor and burden for the additional or unforeseen work. Labor includes foremen actually engaged in the work; and will not include project supervisory personnel nor necessary on-site clerical staff, except when the additional or unforeseen work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. Compensation for project supervisory personnel, but in no case higher than a Project Manager’s position, shall only be for the pro-rata time such supervisory personnel spent on the contract. In no case shall an officer or director of the Company, nor those persons who own more than 1% of the Company, be considered as project supervisory personnel, direct labor or foremen hereunder.

Payment for burden shall be limited solely to the following:

Table 4-3	
Item	Rate
FICA	Rate established by Law
FUTA/SUTA	Rate established by Law
Medical Insurance	Actual
Holidays, Sick & Vacation benefits	Actual
Retirement benefits	Actual
Workers Compensation	Rates based on the National Council on Compensation Insurance basic rate tables adjusted by Contractor’s actual experience modification factor in effect at the time of the additional work or unforeseen work.

Table 4-3	
Item	Rate
Per Diem	Actual but not to exceed State of Florida's rate
Insurance*	Actual
*Compensation for Insurance is limited solely to General Liability Coverage and does not include any other insurance coverage (such as, but not limited to, Umbrella Coverage, Automobile Insurance, etc.).	

At the Pre-construction conference, certify to the Engineer the following:

- a. A listing of on-site clerical staff, supervisory personnel and their pro-rated time assigned to the contract,
- b. Actual Rate for items listed in Table 4-3.2.1,
- c. Existence of employee benefit plan for Holiday, Sick and Vacation benefits and a Retirement Plan, and,
- d. Payment of Per Diem is a company practice for instances when compensation for Per Diem is requested.

Such certification must be made by an officer or director of the Contractor with authority to bind the Contractor. Timely certification is a condition precedent to any right of the Contractor to recover compensations for such costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such costs. Any subsequent changes shall be certified to the Engineer as part of the cost proposal or seven calendar days in advance of performing such extra work.

2. Materials and Supplies: For materials accepted by the Engineer and used on the project, the Contractor will receive the actual cost of such materials incorporated into the work, including Contractor paid transportation charges (exclusive of equipment as hereinafter set forth). For supplies reasonably needed for performing the work, the Contractor will receive the actual cost of such supplies.

3. Equipment: For any machinery or special equipment (other than small tools), including fuel and lubricant, the Contractor will receive 100% of the "Rental Rate Blue Book" for the actual time that such equipment is in operation on the work, and 50% of the "Rental Rate Blue Book" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work to be performed begins) of the "Rental Rate Blue Book for Construction Equipment" as published by Equipment Watch, a division of Informa Business Media, Inc., using all instructions and adjustments contained therein and as modified below. On all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the "Rental Rate Blue Book."

Allowable Equipment Rates will be established as set out below:

- a. Allowable Hourly Equipment Rate = $\frac{\text{Monthly Rate}}{176} \times \text{Adjustment Factors} \times 100\%$.
- b. Allowable Hourly Operating Cost = $\text{Hourly Operating Cost} \times 100\%$.
- c. Allowable Rate Per Hour = $\text{Allowable Hourly Equipment Rate} + \text{Allowable Hourly Operating Cost}$.

d. Standby Rate = Allowable Hourly Equipment

Rate x 50%.

The Monthly Rate is The Basic Machine Rate Plus Any Attachments. Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

The Department will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, the Department will pay for the time to perform this work at the rate for standby equipment.

Equipment may include vehicles utilized only by Labor, as defined above.

4. Indirect Costs, Expenses, and Profit: Compensation for all indirect costs, expenses, and profit of the Contractor, including but not limited to overhead of any kind, whether jobsite, field office, division office, regional office, home office, or otherwise, is expressly limited to the greater of either (a) or (b) below:

a. Solely a mark-up of 17.5% on the payments in (1) through (3), above.

1. Bond: The Contractor will receive compensation for any premium for acquiring a bond for such additional or unforeseen work at the original Contract bond rate paid by the Contractor. No compensation for bond premium will be allowed for additional or unforeseen work paid by the Department via initial contingency pay item.

2. The Contractor will be allowed a markup of 10% on the first \$50,000 and a markup of 5% on any amount over \$50,000 on any subcontract directly related to the additional or unforeseen work. Any such subcontractor mark-up will be allowed only by the prime Contractor and a first tier subcontractor, and the Contractor must elect the markup for any eligible first tier subcontractor to do so.

b. Solely the formula set forth below and only as applied solely as to such number of calendar days of entitlement that are in excess of ten cumulative calendar days as defined below.

$$D = \frac{A \times C}{B}$$

Where A = Original Contract Amount

B = Original Contract Time

C = 8%

D = Average Overhead Per Day

Cumulative Calendar Days is defined as the combined total number of calendar days granted as time extensions due to either extra work, excluding overruns to existing contract items, that extend the duration of the project or delay of a controlling work item caused solely by the Department, or the combined total number of calendar days for which

a claim of entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined to be in favor of the Contractor.

No compensation, whatsoever, will be paid to the Contractor for any jobsite overhead and other indirect impacts when the total number of calendar days granted for time extension due to delay of a controlling work item caused solely by the Department is, or the total number of calendar days for which entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined in favor of the Contractor to be, equal to or less than ten calendar days and the Contractor also fully assumes all monetary risk of any and all partial or single calendar day delay periods, due to delay of a controlling work item caused solely by the Department, that when combined together are equal to or less than ten calendar days and regardless of whether monetary compensation is otherwise provided for hereunder for one or more calendar days of time extension entitlement for each calendar day exceeding ten calendar days. All calculations under this provision shall exclude weather days, Holidays, and Special Events.

Further, for (a) or (b) above, in the event there are concurrent delays to one or more controlling work items, one or more being caused by the Department and one or more being caused by the Contractor, the Contractor shall be entitled to a time extension for each day that a controlling work item is delayed by the Department but shall have no right to nor receive any monetary compensation for any indirect costs for any days of concurrent delay.

4-3.2.2 Subcontracted Work: Compensation for the additional or unforeseen work performed by a subcontractor shall be limited solely to that provided for in 4-3.2.1 (1), (2), (3) and (4)(a). In addition, the Contractor compensation is expressly limited to the greater of the total provided in either 4-3.2.1(4)(a) or (4)(b), except that the Average Overhead Per Day calculation is as follows:

$$D_s = \frac{A_s \times C}{B}$$

Where A_s = Original Contract Amount minus Original

Subcontract amounts(s)*

B = Original Contract Time

C = 8%

D_s = Average Overhead Per-Day

* deduct Original Subcontract Amount(s) of subcontractor(s) performing the work

The subcontractor may receive compensation for any premium for acquiring a bond for the additional or unforeseen work; provided, however, that such payment for additional subcontractor bond will only be paid upon presentment to the Department of clear and convincing proof that the subcontractor has actually submitted and paid for separate bond premiums for such additional or unforeseen work in such amount and that the subcontractor was required by the Contractor to acquire a bond.

The Contractor shall require the subcontractor to submit a certification, in accordance with 4-3.2.1(1), as part of the cost proposal and submit such to the Engineer. Such certification must be made by an officer or director of the subcontractor with authority to bind the subcontractor. Timely certification is a condition precedent to any right of the Contractor to

recover compensation for such subcontractor costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such subcontractor costs.

4-3.3 No Waiver of Contract: Changes made by the Engineer will not be considered to waive any of the provisions of the Contract, nor may the Contractor make any claim for loss of anticipated profits because of the changes, or by reason of any variation between the approximate quantities and the quantities of work actually performed. All work shall be performed as directed by the Engineer and in accordance with the Contract Documents.

4-3.4 Conditions Requiring a Supplemental Agreement: A Supplemental Agreement will be used to settle documented Contract claims in accordance with the intent of the original Contract and subsequent amendments thereto.

No payment will be made on a Supplemental Agreement or Unilateral payment prior to the Department's approval of the document.

4-3.5 Extra Work: Extra work authorized in writing by the Engineer will be paid in accordance with the formula in 4-3.2. Such payment will be the full extent of all monetary compensation entitlement due to the Contractor for such extra work. Any entitlement to a time extension due to extra work will be limited solely to that provided for in 4-3.2 for additional work.

4-3.6 Connections to Existing Pavement, Drives and Walks: Generally adhere to the limits of construction at the beginning and end of the project as detailed in the Plans. However, if the Engineer determines that it is necessary to extend the construction in order to make suitable connections to existing pavement, the Engineer will authorize such a change in writing. For necessary connections to existing walks and drives that are not indicated on the Plans, the Engineer will submit direction regarding the proper connections in accordance with the Standard Plans.

4-3.7 Differing Site Conditions: During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the Contractor disturbs the conditions or performs the affected work. Upon receipt of written notification of differing site conditions from the Contractor, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment of the Contract is warranted. The Engineer will not allow a Contract adjustment for a differing site condition unless the Contractor has submitted the required written notice. The Engineer will not allow a Contract adjustment under this clause for any effects caused to any other Department or non-Department projects on which the Contractor may be working.

4-3.8 Changes Affecting Utilities: The Contractor shall be responsible for identifying and assessing any potential impacts to a utility that may be caused by the changes proposed by the Contractor, and the Contractor shall at the time of making the request for a change notify the Department in writing of any such potential impacts to utilities. Department approval of a Contractor proposed change does not relieve the Contractor of sole responsibility for all utility

impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, design Plans (including traffic control Plans) or other Contract Documents and which effect a change in utility work different from that shown in the utility Plans, or joint project agreements.

4-3.9 Cost Savings Initiative Proposal:

4-3.9.1 Intent and Objective:

1. This Subarticle applies to any cost reduction proposal (hereinafter referred to as a Proposal) that the Contractor initiates and develops, following the submission of technical and price proposals, for the purpose of refining the Contract to increase cost effectiveness or significantly improve the quality of the end result. A mandatory Cost Savings Initiative Workshop for the Contractor and Department to discuss potential Proposals will be held within 30 calendar days following the issuance of the Notice to Proceed. This mandatory workshop can only be eliminated if agreed to in writing by both the Contractor and Department.

2. The Department will consider Proposals that would result in net savings to the Department by providing a decrease in the cost of the Contract. Proposals must result in savings without impairing essential functions and characteristics such as safety, service, life, reliability, economy of operation, ease of maintenance, aesthetics and necessary standard design features. Deletions of work, approved by the Engineer which are not directly associated with or integral to a Proposal will be handled as full credits to the Department for the work deleted.

3. The Department shall have the right to reject at its discretion any Proposal submitted that proposes a change in the design of the pavement system or that would require additional right-of-way. Pending the Department's execution of a formal supplemental agreement implementing an approved Proposal, the Contractor shall remain obligated to perform the work in accordance with the terms of the existing Contract. The Department may grant time extensions to allow for the time required to develop and review a Proposal.

4. The Department reserves the right to reject at its discretion any Proposal submitted which is based on or related to a previously rejected Alternative Technical Concept proposal submitted during the procurement process.

5. Prior to the development of a potential Proposal, a mandatory concept meeting will be held for the Contractor and Department to discuss the potential Proposal. This mandatory meeting can only be eliminated if agreed to in writing by both the Contractor and Department.

4-3.9.2 Subcontractors: The Department encourages the Contractor to include the provisions of this Subarticle in Contracts with subcontractors and to encourage submission of Proposals from subcontractors. However, it is not mandatory to submit Proposals to the Department or to accept or transmit subcontractor proposed Proposals to the Department.

4-3.9.3 Data Requirements: As a minimum, submit the following information with each Proposal:

1. A description of the difference between the existing Contract requirement, including any time extension request, and the proposed change, and the comparative advantages and disadvantages.

2. Separate detailed cost estimates for both the existing Contract requirement and the proposed change. Break down the cost estimates by pay item numbers indicating quantity increases or decreases. Identify additional proposed work not covered by using pay item numbers in the Basis of Estimates Manual. In preparing the estimates, include overhead, profit, and bond costs within pay items.

3. An itemization of the changes, deletions or additions to Plan details, Plan sheets, Standard Plans and Specifications that are required to implement the Proposal if the Department adopts it. Submit preliminary plan drawings sufficient to describe the proposed changes.

4. Engineering or other analysis in sufficient detail to identify and describe specific features of the Contract that must be changed if the Department accepts the Proposal with a proposal as to how these changes can be accomplished and an assessment of their effect on other project elements. The Department may require that Engineering Analysis be performed by a prequalified consultant in the applicable class of work. Support all design changes that result from the Proposal with drawings and computations signed and sealed by the Engineer of Record. Written documentation or drawings will be submitted clearly delineating the responsibility of the Engineer of Record.

5. The date by which the Department must approve the Proposal to obtain the total estimated cost reduction during the remainder of the Contract, noting any effect on the Contract completion time or delivery schedule.

6. A revised project schedule that would be followed upon approval of the Proposal. This schedule would include submittal dates and review time for the Department and Peer reviews.

4-3.9.4 Processing Procedures: Submit Proposal to the Engineer or his duly authorized representative. The Department will process Proposals expeditiously; however, the Department is not liable for any delay in acting upon a Proposal submitted pursuant to this Subarticle. The Contractor may withdraw, in whole or in part, a Proposal not accepted by the Department within the period specified in the Proposal. The Department is not liable for any Proposal development cost in the case where the Department rejects or the Contractor withdraws a Proposal.

The Engineer is the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of such proposal.

Prior to approval, the Engineer may modify a Proposal, with the concurrence of the Contractor, to make it acceptable. If any modification increases or decreases the net savings resulting from the Proposal, the Department will determine the Contractor's fair share upon the basis of the Proposal as modified. The Department will compute the net savings by subtracting the revised total cost affected by the Proposal from the total cost represented in the original Contract.

Prior to approval of the Proposal that initiates the supplemental agreement, submit acceptable Contract-quality plan sheets revised to show all details consistent with the Proposal design.

4-3.9.5 Computations for Change in Contract Cost of Performance: If the Proposal is adopted, the Contractor's share of the net savings as defined hereinafter represents full compensation to the Contractor for the Proposal.

The Department will not include its costs to process and implement a Proposal in the estimate. However, the Department reserves the right, where it deems such action appropriate, to require the Contractor to pay the Department's cost of investigating and implementing a Proposal as a condition of considering such proposal. When the Department imposes such a condition, the Contractor shall accept this condition in writing, authorizing the Department to deduct amounts payable to the Department from any monies due or that may become due to the Contractor under the Contract.

4-3.9.6 Conditions of Acceptance for Major Design Modifications of

Category 2 Bridges: A Proposal that proposes major design modifications of a category 2 bridge, as determined by the Engineer, shall have the following conditions of acceptance:

All bridge Plans relating to the Proposal shall undergo an independent peer review conducted by a single independent engineering firm referred to for the purposes of this article as the Independent Review Engineer pre-qualified by the Department in accordance with Rule 14-75 and who is not the originator of the Proposal design Florida Administrative Code. The independent peer review is intended to be a comprehensive, thorough verification of the original work, giving assurance that the design is in compliance with all Department requirements. The Independent Review Engineer's comments, along with the resolution of each comment, shall be submitted to the Department. The Independent Review Engineer shall sign and seal the submittal cover letter stating that all comments have been adequately addressed and the design is in compliance with the Department requirements. If there are any unresolved comments the Independent Review Engineer shall specifically list all unresolved issues in the signed and sealed cover letter.

The Contractor shall designate a primary engineer responsible for the Proposal design and as such will be designated as the Contractors Engineer of Record for the Proposal design.

New designs and independent peer reviews shall be in compliance with all applicable Department, FHWA and AASHTO criteria requirements including bridge load ratings.

4-3.9.7 Sharing Arrangements: If the Department approves a Proposal for sharing the savings in reimbursable costs for utility relocation, the Contractor shall receive a share of the savings. The savings will be the new difference between the estimated relocation cost shown in the RFP and the actual billed reimbursable amount for each utility. The savings will be determined for each utility individually and not the net of any decrease and increase in relocation costs combined for all utilities. The Contractor will receive 50% of the first \$250,000 in savings and 20% of the amount of the savings in excess of \$250,000.

For all other Proposals, if the Department approves a Proposal, the Contractor shall receive 50% of the net reduction in the cost of performance of the Contract as determined by the final negotiated agreement between the Contractor and the Department. The net reduction will be determined by subtracting from the savings of the construction costs the reasonable documented engineering costs incurred by the contractor to design and develop a Proposal. Engineering costs will be based on the consultant's certified invoice and may include the costs of the Independent Review Engineer in 4-3.9.6. The total engineering costs to be subtracted from the savings to determine the net reduction will be limited to 25% of the construction savings and shall not include any markup by the Contractor or the costs for engineering services performed by the Contractor. Engineering costs shall only be considered for Proposals initiated after Plans have been stamped "Released for Construction" by the Department as described in the RFP.

4-3.9.8 Notice of Intellectual Property Interests and Department's Future Rights to a Proposal:

4-3.9.8.1 Notice of Intellectual Property Interests: The Contractor's Proposal submittal shall identify with specificity any and all forms of intellectual property rights that either the Contractor or any officer, shareholder, employee, consultant, or affiliate, of the Contractor, or any other entity who contributed in any measure to the substance of the

Contractor's Proposal development, have or may have that are in whole or in part implicated in the Proposal. Such required intellectual property rights notice includes, but is not limited to, disclosure of any issued patents, copyrights, or licenses; pending patent, copyright or license applications; and any intellectual property rights that though not yet issued, applied for or intended to be pursued, could nevertheless otherwise be subsequently the subject of patent, copyright or license protection by the Contractor or others in the future. This notice requirement does not extend to intellectual property rights as to stand-alone or integral components of the Proposal that are already on the Department's Approved Product List (APL) or Standard Plans, or are otherwise generally known in the industry as being subject to patent or copyright protection.

4-3.9.8.2 Department's Future Rights to a Proposal: Notwithstanding 7-3 nor any other provision of the Standard Specifications, upon acceptance of a Proposal, the Contractor hereby grants to the Department and its contractors (such grant being expressly limited solely to any and all existing or future Department construction projects and any other Department projects that are partially or wholly funded by or for the Department) a royalty-free and perpetual license under all forms of intellectual property rights to manufacture, to use, to design, to construct, to disclose, to reproduce, to prepare and fully utilize derivative works, to distribute, display and publish, in whole or in part, and to permit others to do any of the above, and to otherwise in any manner and for any purpose whatsoever do anything reasonably necessary to fully utilize any and all aspects of such Proposal on any and all existing and future construction projects and any other Department projects.

Contractor shall hold harmless, indemnify and defend the Department and its contractors and others in privity therewith from and against any and all claims, liabilities, other obligations or losses, and reasonable expenses related thereto (including reasonable attorneys' fees), which are incurred or are suffered by any breach of the foregoing grants, and regardless of whether such intellectual property rights were or were not disclosed by the Contractor pursuant to 4-3.9.8.1, unless the Department has by express written exception in the Proposal acceptance process specifically released the Contractor from such obligation to hold harmless, indemnify and defend as to one or more disclosed intellectual property rights.

4-4 Unforeseeable Work.

When the Department requires work that is not covered by a price in the Contract and such work does not constitute a "Significant Change" as defined in 4-3.1, and the Department finds that such work is essential to the satisfactory completion of the Contract within its intended scope, the Department will make an adjustment to the Contract. Such adjustment will be made by Work Order when the Contract Documents provide for Contingency Work. When the Contract Documents do not provide for Contingency Work or the available funds for Contingency Work are insufficient, such adjustment will be made by Supplemental Agreement. The cost of unforeseeable work will be a negotiated amount or, in lieu of negotiations or other agreement, an amount based on material invoices, equipment costs, labor payrolls, and markups provided in 4-3.2.

Contingency Work, as used in this Article, is defined as possible additional work required to satisfactorily complete the Contract within its intended scope.

4-5 Rights in and Use of Materials Found on the Site of the Work.

4-5.1 Ownership and Disposal of Existing Materials: Take ownership and dispose of all materials that are not designated as the property of other parties, in both roadway and

structures, found on the right-of-way, and all material in structures designated for removal. Such materials do not include earth or other excavated material required for the construction of the project. The Contractor is responsible to determine if any existing materials are the property of others and so indicate it on the Plans. Additionally it is the Contractor's responsibility to coordinate with the property owner for proper removal and storage to perform the work.

Disposal of the existing bridge components shall be the responsibility of the Design-Build Firm.

4-5.2 Ornamental Trees and Shrubs: Take ownership of all ornamental trees or shrubs existing in the right-of-way that is required to be removed for the construction operations. Coordinate with adjacent property owners concerning disposition of ornamental trees and shrubs. Designate on the Plans those to be reset, or to be removed by others prior to the Construction operations.

4-6 Final Cleaning Up of Right-of-Way.

Upon completion of the work, and before the Department accepts the work and makes final payment, remove from the right-of-way and adjacent property all falsework, equipment, surplus and discarded materials, rubbish and temporary structures; restore in an acceptable manner all property, both public and private, that has been damaged during the prosecution of the work; and leave the waterways unobstructed and the roadway in a neat and presentable condition throughout the entire length of the work under Contract. Do not dispose of materials of any character, rubbish or equipment, on abutting property, with or without the consent of the property owners. The Engineer will allow the Contractor to temporarily store equipment, surplus materials, usable forms, etc., on a well-kept site owned or leased by the Contractor, adjacent to the project. However, do not place or store discarded equipment, materials, or rubbish on such a site.

Shape and dress areas adjacent to the project right-of-way that were used as plant sites, materials storage areas or equipment yards when they are no longer needed for such purposes. Restore these areas in accordance with 7-11.1 and 7-11.2. Grass these areas as necessary.

When working adjacent to or over travel lanes, ensure that dust, mud and other debris does not interfere with normal traffic operations or adjacent properties.

SECTION 5 CONTROL OF THE WORK

5-1 Plans and Working Drawings.

5-1.1 Contract Documents: Have available the Contract Documents on the worksite, at all times. All reference to separate payment for individual items of work will not apply. The cost for various items of work will be included and paid for under the Contract Lump Sum Price.

5-1.2 Plans: Plans consist of general drawings showing such details as are necessary to give a comprehensive idea of the construction contemplated. In general, roadway Plans will show alignment, profile grades, typical cross-sections and general cross-sections. In general, structure Plans will show in detail all dimensions of the work contemplated. When the structure Plans do not show the dimensions in detail, they will show general features and such details as are necessary to give a comprehensive idea of the structure.

Grades shown are finished grades, and B.M. Datum is North American Vertical Datum 1988 (NAVD-1988), National Geodetic Vertical Datum of 1929 (NGVD-1929), or other datum as noted in the Plans.

In addition to the work and materials specifically called for in the Contract Documents and any additional incidental work, not specifically mentioned, when so shown in the Plans, or if indicated, or obvious and apparent, as being necessary for the proper completion of the work will be included in the Contract Lump Sum Price.

5-1.3 Alterations in Plans: Not applicable.

5-1.4 Shop Drawings:

5-1.4.1. Definitions: In addition to the definitions below, also refer to Section 1, Definitions and Terms.

1. Bracing: Temporary structural member(s) placed between beams, girders, piles, precast columns, etc. to provide stability during construction activities.

2. Construction Affecting Public Safety: Construction that may jeopardize public safety such as structures and construction operations spanning over or adjacent to functioning vehicular roadways, pedestrian walkways, railroads, navigable waterways, and walls supporting fill sections or excavations immediately adjacent to function roadways demolition of a continuous span structure while traffic is under any span, pedestrian walkways, railroads, navigation channels of navigable waterways and walls or other structure foundations located in embankments immediately adjacent to functioning roadways. Construction Affecting Public Safety may also apply to the demolition of a bridge with continuous beams or girders if traffic is being placed under one of the spans within the unit. It does not apply to those areas of the site under the Contractor's control and outside the limits of normal public access. Adjacent as used above applies to any project or property where normal construction operations could impact functioning vehicular roadways, pedestrian walkways, railroads, or navigable waterways

3. Contractor Originated Designs: Items which the Contract Documents require the Contractor to design, detail and incorporate into the permanent works.

4. Detailer: The steel detailer that prepares the steel shop drawings for fabrication, geometry and fit-up for all steel members in accordance with the Plans.

5. Falsework: Any temporary construction work used to support the permanent structure until it becomes self-supporting. Falsework includes steel or timber beams, girders, columns, bracing piles and foundations, and any proprietary equipment including modular shoring frames, post shores, and adjustable horizontal shoring.

6. Formwork: Any structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Formwork may be comprised of common materials such as wood or metal sheets, battens, soldiers and walers, ties, proprietary forming systems such as stay-in-place metal forms, and proprietary supporting bolts, hangers and brackets. Formwork may be either permanent formwork requiring a shop drawing submittal such as stay-in-place metal or concrete forms, or may be temporary formwork which requires certification by the Specialty Engineer for Construction Affecting Public Safety and for Major and Unusual Structures.

7. Construction IPR of Temporary Works Affecting Public Safety: Construction Independent Peer Reviews (IPRs) are required to validate the design of all Temporary Works Affecting Public Safety and bridge demolition plans affecting public safety. Except as defined below, the Construction IPR may be performed by a Specialty Engineer not responsible for the initial work. In no case shall the Construction IPR Reviewer and the Specialty

Engineer responsible for the initial work be employed by the same Firm. The Construction IPR is intended to be a comprehensive, thorough independent verification of the original work. The Construction IPR is not simply a check of the Specialty Engineer's plans and calculations; it is an independent verification of the design using different programs and independent processes than what was used by the Specialty Engineer responsible for the initial work. The Engineer of Record is permitted to perform the Construction IPR provided that the above conditions are met. All Shop Drawings requiring an IPR shall be submitted to the Department with a Signed and Sealed Construction IPR Certification Letter stating "...that the design of the temporary works has been reviewed and is in full compliance with all Contract Documents and appropriate design codes." The Construction IPR letter must also state which components (e.g. temporary works, etc.) were reviewed.

For temporary works meeting the requirements herein supporting the construction of Major and Unusual Structures defined in 5-1.4.8.a, 5-1.4.8.f and 5-1.4.8.g, the Construction IPR shall be performed by a qualified engineer per Rule 14-75 consistent with the relevant bridge type. Also, the certification shall be expanded to include a statement that "a verification of the temporary works includes a verification of all loads, reactions and displacements accounting for the interaction with the structure being supported and based on the design erection tolerances, force effects due to applicable superimposed deformations (uniform temperature, temperature gradients, elastic shortening, creep, shrinkage), wind and construction loads through all phases of construction."

8. Major and Unusual Structures: Bridges of complex geometry and/or complex design. Generally, this includes the following types of structures:

- a. Bridges with an individual span longer than 300 feet.
- b. Structurally continuous superstructures with spans over 150 feet.
- c. Steel box and plate girder bridges.
- d. Concrete or steel straddle piers and straddle pier caps.
- e. Steel truss bridges including pedestrian steel truss spans that utilize proprietary designs.
- f. Concrete segmental and longitudinally post-tensioned continuous girder bridges and post-tensioned substructures.
- f. Cable stayed, extradosed or suspension bridges.
- g. Arch bridges.
- h. Tunnels.
- i. All Movable bridges (specifically including structural, electrical and mechanical components).
- j. Rehabilitation, widening, or lengthening or jacking of any of the above.

9. Permanent Works: All the permanent structures and parts thereof required of the completed Contract.

10. QA/QC Shop Drawing Check Prints: The Engineer of Record is responsible for conducting a review of all shop drawings regardless of whether the shop drawing is originated by the Engineer of Record or by others. QA/QC Shop Drawing Check Prints shall consist of highlighting items that the EOR is able to verify based on the EOR's plans and design information on each sheet reviewed. Each sheet shall be initialed by the reviewer. QA/QC

Shop Drawing Check Prints shall be submitted to the Department along with the stamped Shop Drawing.

11. Scaffolding: An elevated work platform used to support workmen, materials and equipment, but not intended to support the structure.

12. Shop Drawing: A drawing or set of drawings produced by the contractor, supplier, manufacturer, subcontractor, or fabricator for prefabricated components. Shop drawings also include all working drawings, erection plans, associated trade literature, material cut-sheets, calculations, schedules, erection manuals, geometry control manuals and other manuals and similar documents submitted by the Contractor to define some portion of the project work. The type of work includes both permanent and temporary works as appropriate to the project. All working, shop and erection drawings, associated trade literature, calculations, schedules, manuals and similar documents submitted by the Contractor to define some portion of the project work. The type of work includes both permanent and temporary works as appropriate to the project.

13. Shoring: A component of falsework such as horizontal, vertical or inclined support members. In this Section, this term is interchangeable with falsework.

14. Special Erection Equipment: Includes launching gantries, beam and winch equipment, form travelers, segment lifters, beam shifters, stability towers, strong-backs, erection trusses, launching noses or similar items made purposely for construction of the structure. It does not apply to commonly available proprietary construction equipment such as cranes.

15. Temporary Works: Any temporary construction work necessary for the construction of the permanent works. This includes but is not limited to bracing, falsework, formwork, scaffolding, shoring, stability towers, strong-backs, counterweights, temporary earthworks, sheeting, cofferdams, and special erection equipment.

5-1.4.2 Shop Drawing Submittal and Review Requirements: See table 5-1 below for shop drawing submittal and review requirements.

Table 005-1 Submittal and Review Requirements						
Shop Drawing for:	Originated by Specialty Engineer Not Signed and Sealed	Originated by Detailer Not Signed and Sealed	Originated by Specialty Engineer Signed and Sealed	Originated by Contractor's EOR Signed and Sealed	Requires Review, QA/QC Check prints and disposition stamp by Design EOR	Requires Construction IPR and signed and sealed Certification Letter
Steel Fabrication Drawings		Originator			Reviewer	
Steel Erection Plan			Originator		Reviewer	
Geometry Control Manual				Originator	Reviewer	
Segmental Erection Manual				Originator	Reviewer	Reviewer ₅

Table 005-1
Submittal and Review Requirements

Segmental Shop Drawings	Originator		Originator		Reviewer	
Post-tensioning Mock-up Plan			Originator		Reviewer	
Post-tensioning Systems ₁			Originator		Reviewer	
Pretensioned Prestressed Concrete Products Containing FRP Bars or Strands Excluding Standard Piles and Sheet Piles			Originator		Reviewer	
Temporary Works Affecting Public Safety ₂			Originator		Reviewer	Reviewer ₆
Demolition Plans of Bridges with Continuous Beams or Girders Where One Span Within the Unit is Over Traffic			Originator			Reviewer ₇
Prefabricated Bridge Elements and System Connection Mock-Up Plans			Originator		Reviewer	
Bridge Formwork Including SIP Forms			Originator		Reviewer	
Construction Equipment Placed on Existing Bridges				Originator	Reviewer	
Bridge components not fully detailed in the Plans, i.e., post-tensioning details, handrails, temporary operating systems for movable bridges etc.				Originator	Reviewer	
Retaining Wall Systems			Originator		Reviewer	
Precast Box Culverts			Originator		Reviewer	
Non-standard			Originator		Reviewer	

Table 005-1
Submittal and Review Requirements

structures and components for drainage, lighting, signalization and signing						
Building structures			Originator ³		Reviewer ⁴	
Non-standard crash cushions and other nonstructural items			Originator		Reviewer	
Design and structural details furnished by the Contractor in compliance with the Contract				Originator	Reviewer	
Material or Product Cut-Sheets	Originator				Reviewer	

- 1 Includes approved post-tensioning systems and project specific integration details of the approved system.
- 2 Does not include formwork complying with Standard Plans, Index 102-600 (concrete placement is not permitted directly over traffic). Also, does not include critical temporary walls that are fully detailed in the plans unless redesigned by the Contractor. Does not include specialized equipment if traffic is removed from under equipment while equipment is being loaded, launched, and while loads are being transported by equipment.
- 3 In lieu of a Specialty Engineer the originator may be a licensed Architect.
- 4 In lieu of the Design Engineer of Record the reviewer may be the Design Architect of Record.
5. Submit an Independent Peer Review Certification Letter for portions of the Erection Manual that include temporary works affecting public safety. Specifically reference pages in the Erection Manual that are included in the Certification provided. The certification letter shall state: "...that the design of the temporary works has been reviewed and is in full compliance with all Contract Documents and appropriate design codes." The certification letter shall also clearly state what components (e.g. temporary works, etc. were reviewed).
6. The certification letter for the Construction IPR shall state: "...that the design of the temporary works has been reviewed and is in full compliance with all Contract Documents and appropriate design codes." The certification letter shall also clearly state what components (e.g. temporary works, etc. were reviewed).
7. The certification letter for the Construction IPR shall state: "...that the demolition plan has been reviewed and is in full compliance with the Contract and acceptable design codes and specifications."

5-1.4.2 Work Items Requiring Shop Drawings: In general, the Department requires shop drawings for items of work not fully detailed in the Plans which require additional drawings and coordination prior to constructing the item, including but not limited to:

1. Bridge components not fully detailed in the Plans, i.e. segments, steel girder details, post-tensioning details, handrails, etc.

2. Retaining wall systems
3. Precast Box Culverts
4. Non-standard structures and components for drainage, lighting, signalization and signing
5. Building structures
6. Non-standard crash cushions and other nonstructural items
7. Design and structural details furnished by the Contractor in compliance with the Contract
8. Temporary Works affecting public safety

Additional clarification for certain types of bridge structures is provided in 5-1.4.7. Other provisions of the Contract Documents may waive the requirement for submittals for certain items; i.e., items constructed from standard drawings or those complying with alternate details for prestressed members under Section 450. Review the Contract Documents to determine the submittals required.

5-1.4.3 Schedule of Submittals: Prepare and submit a schedule of submittals that identifies the work for which shop drawings apply. For each planned submittal, define the type, and approximate number of drawings or other documents that are included and the planned submittal date, considering the processing requirements herein. Submit the schedule of submittals to the Department's Shop Drawing Review Office and the Engineer of Record within 60 days of the start of the Contract construction operations, and prior to the submission of any shop drawings.

Coordinate subsequent submittals with construction schedules to allow sufficient time for review and re-submittal, and approval prior to beginning fabrication, as necessary.

5-1.4.4 Style, Numbering, and Material of Submittals:

5-1.4.4.1 Drawings: Submit all shop drawings that are necessary to complete the structure in compliance with the design shown on the Plans. Prepare all shop drawings using the same units of measure as those in the Contract Plans. English Units. Consecutively number each sheet in the submittal series, and indicate the total number in the series (i.e., 1 of 12, 2 of 12, . . . , 12 of 12). Include on each sheet the following items as a minimum requirement: the complete Financial Project Identification Number, Bridge Number(s), drawing title and number, a title block showing the names of the fabricator or producer and the Contractor for which the work is being done, the initials of the person(s) responsible for the drawing, the date on which the drawing was prepared, the location of the item(s) within the project, the Contractor's approval stamp with date and initials, and, when applicable, the signature and embossed seal of the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record. A re-submittal will be requested when any of the required information is not included.

Shop drawings shall be submitted in Portable Document Format (PDF) files, formatted in on sheets 11 inch by 17 inches sheets.

5-1.4.4.2 Other Documents: Submit PDF files of other documents (such as trade literature, catalogue information, calculations, work plans including methods, phasing, procedures, sequences and manuals formatted on sheets). Provide sheets no larger than 11 by 17 inches. Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e., 1 of 12, 2 of 12, . . . 12 of 12).

Prepare all documents using English units the same units of measure as the Contract Plans and include a Table of Contents cover sheet. List on the cover sheet the total number of pages and appendices, and include the complete Financial Project Identification Number, a title referencing the submittal item(s), the name of the firm and person(s) responsible for the preparation of the document, the Contractor's approval stamp with date and initials, and, when applicable, the signature and embossed seal of the the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record.

Submit appropriately prepared and checked calculations and manuals that clearly outline the design criteria. Include on the internal sheets the complete Financial Project Identification Number and the initials of the person(s) responsible for preparing and checking the document.

Clearly label trade literature and catalogue information on the front cover with the title, Financial Project Identification Number, date and name of the firm and person(s) responsible for that document.

5-1.4.5 Submittal Paths:

5-1.4.5.1 General: Shop drawings are not required for prequalified items. At the preconstruction conference, the Department will notify the Contractor in writing of any changes in the submittal path and whether the Department's review stamp will signify an officially reviewed shop drawing.

Submit shop drawings to the Engineer. Shop drawings shall be in conformance with the Department's Plans Preparation FDOT Design Manual. When submitted to the Engineer for review by the Department, the shop drawings must bear the stamp and signature of the Contractor, EOR, and signature and seal of the Specialty Engineer, as appropriate. Only forward shop drawings stamped "Approved" or "Approved as Noted" along with the QA/QC Shop Drawing Check Prints and Construction IPR certification letter (when applicable) to the Engineer for review by the Department. Shop drawings submitted without the stamps of the Contractor and the EOR or without the QA/QC Shop Drawing Check Prints or Construction IPR certification letter (when applicable) will be returned for re-submittal. In the case where the EOR generates the shop drawings for the project, another engineer with the EOR's firm, not involved in the production of the shop drawing, will review and stamp the drawings per the requirements stated herein. Shop drawings shall not be submitted, processed reviewed, or approved until the component plan set for the particular item is stamped "Released for Construction". For work requiring other information (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating procedures), submit the required number of copies to the Engineer. Submit material certifications and material tests to the Engineer.

5-1.4.5.2 Building Structures: Submit workshop , shop and erection drawings, and all correspondence related to building structures, such as Rest Area Pavilions, Office Buildings, and Maintenance Warehouses, to the Engineer for review by the Department. All shop drawings for building structures shall bear the stamp and signature of the Contractor, Design-Build Firm's Architect of Record, and Specialty Engineer, as appropriate. Only forward shop drawings stamped "Approved" or "Approved as Noted" to the Engineer for Review.

5-1.4.5.3 Contractor Originated Design: Submit shop drawings and applicable calculations to the Engineer of Record for review. The shop drawings and applicable calculations must be signed and sealed by the Specialty Engineer or the Contractor's Engineer of Record. Submit in accordance with the requirements of 5-1.4. 1 through 5-1.4. 3, as appropriate.

5-1.4.5.4 Temporary Works: For Construction Affecting Public Safety, the submit to the Engineer of Record and the Construction IPR Reviewer shall review all shop drawings and the applicable calculations for the design of special erection equipment, bracing, falsework, scaffolding, etc. The shop drawings and the applicable calculations will be signed and sealed by the Specialty Engineer. Submit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.15-1.4.5.1 through 5-1.4.35-1.4.5.2, as appropriate. Provide Signed and Sealed Construction IPR Certification Letter with submittal.

5-1.4.5.5 Demolition Plans of Bridges with Continuous Beams or Girders When Traffic is Under Any of the Spans of the Unit During Demolition Activities: For demolition plans of bridges with continuous beams or girders when traffic is placed under any of the spans of the unit during demolition activities, the Speciality Engineer shall prepare signed and sealed demolition plans and applicable calculations including a step-by-step sequence of demolition, etc. Clearly denote any traffic restrictions for all demolition steps. Submit in accordance with the requirements of 5-1.4. 1 through 5-1.4. 3, as appropriate

For bridge demolition meeting the requirements herein the demolition plan shall be Independent Peer Reviewed. The Construction IPR shall be performed by a qualified engineer per Rule 14-75 consistent with the bridge type being demolished. The demolition plan and calculations shall be submitted to the Department with a Signed and Sealed Construction IPR Certification Letter stating "...that the demolition plan has been reviewed and is in full compliance with the Contract and acceptable design codes and specifications."

5-1.4.5.6 Falsework Founded on Shallow Foundations: When vertical displacement limits are provided in the Plans for falsework founded on shallow foundations such as spread footings and mats, the Engineer of Record shall review all shop drawings and applicable calculations of the falsework system including subsurface conditions and settlement estimates. The shop drawings and the applicable calculations will must be signed and sealed by the Specialty Engineer. Submit in accordance with the requirements of 5-1.4.1 5-1.4.5.1 through 5-1.4.35-1.4.5.2, as appropriate.

5-1.4.5.7 Formwork and Scaffolding: The Contractor is solely responsible for the safe installation and use of all formwork and scaffolding. The Department does not require any formwork or scaffolding submittals unless such work would be classified as Construction Affecting Public Safety. For formwork, scaffolding, or other temporary works affecting public safety, develop the required designs in accordance with the AASHTO Guide Design Specifications for Bridge Temporary Works, the AASHTO Construction Handbook for Bridge Temporary Works, and Chapter 11 of the Structures Design Guidelines (SDG) using wind loads specified in the SDG.

5-1.4.5.8 Beam and Girder Temporary Bracing: The Contractor is solely responsible for ensuring stability of beams, and girders and columns during all handling, storage, shipping and erection. Adequately brace columns, beams and girders to resist wind, weight of forms and other temporary loads, especially those eccentric to the vertical axis of the products, considering actual beam geometry and support conditions during all stages of erection and deck construction. At a minimum, provide temporary bracing at each end of each beam or girder. Develop the required bracing designs in accordance with the AASHTO LRFD Bridge Design Specifications (LRFD) and Chapter 11 of the SDG using wind loads specified in the SDG. For information not included in the SDG or LRFD, refer to the AASHTO Guide Design Specifications for Bridge Temporary Works and the AASHTO Construction Handbook for Bridge Temporary Works.

For Construction Affecting Public Safety, when temporary bracing requirements are shown in the Plans, submit Plans and calculations signed and sealed by a Specialty Engineer for the design of temporary bracing members and connections based on the forces shown in the Plans. In addition, submit a written certification that construction loads do not exceed the assumed loads shown in the Plans.

For Construction Affecting Public Safety, when temporary bracing requirements are not shown in the Plans or an alternate temporary bracing system is proposed, submit Plans and calculations signed and sealed by a Specialty Engineer including the stability analysis and design of temporary bracing members and connections.

5-1.4.5.9 Erection Plan, Geometry Control Manual and Erection

Manual: Submit, for the Engineer's review, an Erection Plan that meets the specific requirements of Sections 450, 452 and 460 and this section. Submit in writing for the Engineer's review an Erection Manual and Geometry Control Manual that meets the specific requirements of Section 462 and this Section. Submit an Independent Peer Review Certification Letter for portions of the Erection Manual that include temporary works affecting public safety. Specifically reference pages in the Erection Manual that are included in the Certification provided. For all Erection Plans and Erection Manuals Refer to Standard Plans, Index 102-600 for construction activities not permitted over traffic. For construction operations not covered in Index 102-600 clearly denote what additional construction steps are not allowed over traffic.

5-1.4.5.10 Other Miscellaneous Design and Structural Details

Furnished by the Contractor in Compliance with the Contract: The Engineer of Record shall review all shop drawings and the applicable calculations for miscellaneous design and structural details as required by the Contract. The shop drawings and the applicable calculations will be signed and sealed by the Specialty Engineer. Submit in accordance with the requirements of 5-1.4.15-1.4.5.1 through 5-1.4.35-1.4.5.2, as appropriate.

5-1.4.6 Processing of Shop Drawings:

5-1.4.6.1 Contractor Responsibility for Accuracy and Coordination of Shop Drawings: Coordinate, schedule, and control all submittals, with a regard for the required priority, including those of the various subcontractors, suppliers, and engineers, to provide for an orderly and balanced distribution of the work.

Coordinate, review, date, stamp, approve and sign all shop drawings prepared by the Contractor or agents (subcontractor, fabricator, supplier, etc.) prior to submitting them to the Engineer for review. Submittal of the drawings confirms verification of the work requirements, units of measurement, field measurements, construction criteria, sequence of assembly and erection, access and clearances, catalog numbers, and other similar data. Indicate on each series of drawings the specification section and sheet or drawing number of the Contract Plans to which the submission applies. Indicate on the shop drawings all deviations from the Contract drawings and itemize all deviations in the letter of transmittal. Likewise, whenever a submittal does not deviate from the Contract Plans, clearly state so in the submittal.

Schedule the submission of shop drawings to allow for a review period as described in the RFP. The review period commences upon the Engineer's receipt of the valid submittal or valid re-submittal and terminates upon the transmittal of the submittal back to the Contractor. A valid submittal includes all the minimum requirements outlined in 5-1.4.4.

Submit shop drawings to facilitate expeditious review. The Contractor is discouraged from transmitting voluminous submittals of shop drawings at one time. For submittals transmitted in this manner, allow for the additional review time that may result.

Only shop drawings distributed with the approval stamps are valid and all work that the Contractor performs in advance of approval will be at the Contractor's risk. Work affecting Public Safety may not be performed prior to approval of appropriate submittals and work may not proceed at the Contractor's risk.

5-1.4.6.2 Scope of Review by Engineer of Record: The Engineer of Record's review of the shop drawings is for conformity to the requirements of the Contract Documents and to the intent of the design. The Engineer of Record's review of shop drawings which include means, methods, techniques, sequences, and construction procedures are limited to the effects on the permanent works. The Engineer of Record's review of submittals which include means, methods, techniques, sequences, and construction procedures does not include an in-depth check for the ability to perform the work in a safe or efficient manner.

5-1.4.6.3 Special Review by the Engineer of Shop Drawings by the Engineer of Record for Construction Affecting Public Safety: The Engineer may request copies of shop drawings related to Construction Affecting Public Safety for review and comment. When shop drawings are requested, do not proceed with construction of the permanent works until receiving the Engineer's written approval. For Construction Affecting Public Safety, the Engineer of Record will perform an independent review of all relevant shop drawings and similar documents. Do not proceed with construction of the permanent works until receiving the Engineer of Record's written approval.

5-1.4.7 Other Requirements for Shop Drawings for Bridges:

5-1.4.7.1 Shop Drawings for Structural Steel and Miscellaneous Metals: Submit shop drawings for structural steel and miscellaneous metals. Shop drawings shall consist of working, shop, and erection drawings, welding procedures, and other working Plansplans, showing details, dimensions, sizes of material, and other information necessary for the complete fabrication and erection of the metal work.

5-1.4.7.2 Shop Drawings for Concrete Structures: Submit shop drawings for concrete components that are not cast-in-place and are not otherwise exempted from submittal requirements. Also, submit shop drawings for all details that are required for the effective prosecution execution of the concrete work and are not included in the Contract Documents such as: special erection equipment, masonry layout diagrams, and diagrams for bending reinforcing steel, in addition to any details required for concrete components for the permanent work.

5-1.4.7.3 Shop Drawings for Major and Unusual Structures: In addition to any other requirements, within 60 days from the nNotice to Pproceed, submit information to the Engineer outlining the integration of the Major and Unusual Structure into the overall approach to the project. Where applicable to the project, include, but do not limit this information to:

1. The overall construction program for the duration of the Contract. Clearly show the Milestone dates. (For example, the need to open a structure by a certain time for traffic operations.)
2. The overall construction sequence. The order in which individual structures are to be built, the sequence in which individual spans of girders or cantilevers are erected, and the sequence in which spans are to be made continuous and the order

that components are to be installed (such as mechanical and electrical devices in moveable bridges).

3. The general location of any physical obstacles to construction that might impose restraints or otherwise affect the construction, and an outline of how to deal with such obstacles while building the structure(s). (For example, obstacles might include road, rail and waterway clearances, temporary diversions, transmission lines, utilities, property, and the Contractor's own temporary works, such as haul roads, cofferdams, plant clearances and the like.)

4. The approximate location of any special lifting equipment in relation to the structure, including clearances required for the operation of the equipment. (For example, crane positions, operating radii and the like.)

5. The approximate location of any temporary falsework, and the conceptual outline of any special erection equipment. Provide the precise locations and details of attachments, fixing devices, loads, etc. in later detailed submittals.

6. An outline of the handling, transportation, and storage of fabricated components, such as girders or concrete segments. Provide the precise details in later detailed submittals.

7. Any other information pertinent to the proposed scheme or intended approach.

Clearly and concisely present the above information on as few drawings as possible in order to provide an overall, integrated summary of the intended approach to the project. The Department will use these drawings for information, review planning, and to assess the Contractor's approach in relation to the intent of the original design. Submittal to and receipt by the Engineer does not constitute any Department acceptance or approval of the proposals shown thereon. Include the details of such proposals on subsequent detailed shop drawing submittals. Submit timely revisions and re-submittals for all variations from these overall scheme proposals.

5-1.4.8 Modifications for Construction: Where the Engineer allows the Contractor to make modifications to the permanent works for the purposes of expediting the Contractor's chosen construction methods, the Contractor shall submit proposals to the Engineer of Record for review and approval prior to modifying the works. Submit proposals for minor modifications under the shop drawing process. Indicate on all drawings the deviations from the Contract Documents and itemize all deviations in the letter of transmittal. The Department will require additional submittals and/or submittal under a Cost Savings Initiative Proposal for major modifications.

Minor modifications are those items that, in the opinion of the Engineer, do not significantly affect the quantity of measured work, or the integrity or maintainability of the structure or its components. (For example, adjusting concrete dimensions, substituting steel plate sizes, changing reinforcing bar size and spacing, etc., all within the acceptable limits of the design.)

Major modifications are any modifications that, in the opinion of the Engineer, significantly affect the quantity of measured work, or the integrity or maintainability of the structure or its' components. (For example, substituting alternative beam sizes and spacings, changing material strength or type, and the like.). Submit signed and sealed revised sheets to the Engineer for any such revisions to the Contract Plans prior to submitting shop drawings.

The Engineer's decision on the delineation between a minor and a major modification and the disposition of a proposal is final.

5-1.4.9 Cost of Shop Drawings: Include the cost of shop and working shop drawings submittal in the Contract prices for the work requiring the shop and working shop drawings. The Department will not pay the Contractor additional compensation for such drawings.

5-1.5 Certifications:

5-1.5.1 Special Erection Equipment: Prior to its use, ensure that the Specialty Engineer personally inspects the special erection equipment and submits a written certification to the Engineer that the equipment has been fabricated in accordance with the submitted drawings and calculations. In addition, after assembly, ensure that the Specialty Engineer observes the equipment in use and submits a written certification to the Engineer that such equipment is being used as intended and in accordance with the submitted drawings and calculations. In each case, the Specialty Engineer must will sign and seal the letter of certification.

5-1.5.2 Falsework and Shoring Requiring Shop Drawings: After its erection or installation but prior to the application of any superimposed load, ensure that a Specialty Engineer or a designee inspects the falsework and certifies to the Engineer in writing that the falsework has been constructed in accordance with the materials and details shown on the submitted drawings and calculations. The letter of certification will must be signed and sealed by the Specialty Engineer. Where so directed in the shop drawings, ensure all welds are performed by welders qualified under AWS D1.5 for the type of weld being performed.

5-1.5.3 Temporary Formwork: For Construction Affecting Public Safety and for Major and Unusual Structures, prior to the placement of any concrete, ensure that a Specialty Engineer or a designee inspects the formwork and submits a written certification to the Engineer that the formwork has been constructed to safely withstand the superimposed loads to which it will be subjected. Ensure that the Specialty Engineer signs and seals the letter of certification The Specialty Engineer must sign and seal the letter of certification.

5-1.5.4 Erection: For Construction Affecting Public Safety, submit an erection plan signed and sealed erection plan to the by the Specialty Engineer to the Engineer at least four weeks prior to erection commencing. in accordance with the submittal timeframes described in the RFP. Include as part of this submittal signed and sealed calculations and details for any falsework, bracing or other connection(s) supporting the structural elements shown in the erection Plan. Unless otherwise specified in the Plans, erection Plans are not required for simple span precast prestressed concrete girder bridges with spans of 170 feet or less.

At least two weeks prior to beginning erection, conduct a Pre-erection meeting to review the details of the plan with the Specialty Engineer that signed and sealed the plan, and any Specialty Engineers that may inspect the work, and the Engineer.

After erection of the elements, but prior to opening of the facility below the structure, ensure that a Specialty Engineer or a designee has inspected the erected member. Ensure that the Specialty Engineer has submitted a written certification to the Engineer that the structure has been erected in accordance with the signed and sealed erection plan.

For structures without temporary supports but with temporary girder bracing systems, perform, as a minimum, weekly inspections of the bracing until all the diaphragms and cross frames are in place. For structures with temporary supports, perform daily inspections until the temporary supports are no longer needed as indicated in the erection plans.

Submit written documentation of the inspections to the Engineer within 24 hours of the inspection

5-1.6 Corrections for Construction Errors: For work that the Contractor constructs incorrectly or does not meet the requirements of the Contract Documents, the Contractor has the prerogative to submit an acceptance proposal to the Engineer for review and disposition. The acceptance proposal shall describe the error or defect and either describe remedial action for its correction or propose a method for its acceptance. In either case, the acceptance proposal shall address structural integrity, aesthetics, maintainability, and the effect on Contract Time. The Department will judge any such proposal for its effect on these criteria and also for its effect on Contract Administration.

When the Engineer judges that a proposal infringes on the structural integrity or maintainability of the structure, the Contractor's Engineer of Record will perform a technical assessment and submit it to the Engineer for approval. Do not take any corrective action without the Engineer's written approval.

Carry out all approved corrective construction measures at no expense to the Department.

Notwithstanding any disposition of the compensation aspects of the defective work, the Engineer's decision on the technical merits of a proposal is final.

5-2 Coordination of Contract Documents.

These Specifications, the Plans, Special Provisions, and all supplementary documents are integral parts of the Contract; a requirement occurring in one is as binding as though occurring in all. In addition to the work and materials specifically called for in the Contract Documents and any additional incidental work, not specifically mentioned, when so shown in the Plans, or if indicated, or obvious and apparent, as being necessary for the proper completion of the work, will be included in the Contract Lump Sum Price.

In cases of discrepancy, the governing order of the documents is as follows:

1. Request for Proposal Packages
2. Special Provisions
3. Technical Special Provisions
4. Plans
5. Standard Plans
6. Developmental Specifications
7. Supplemental Specifications
8. Standard Specifications

Computed dimensions govern over scaled dimensions.

5-3 Conformity of Work with Contract Documents.

Perform all work and furnish all materials in conformity with the lines, grades, cross-sections, dimensions, and material requirements, including tolerances, as specified in the Contract Documents.

In the event that the Engineer finds that the Contractor has used material or produced a finished product that is not in reasonably close conformity with the Contract Documents, but that the Contractor has produced reasonably acceptable work, the Engineer will determine if the Department will accept the work in place. In this event, the Engineer will document the basis of acceptance by Contract modification, which provides for an appropriate reduction in the Contract

price for such work or materials included in the accepted work as deemed necessary to conform to the determination based on engineering judgment.

In the event that the Engineer finds that the Contractor has used material or produced a finished product that is not in reasonably close conformity with the Contract Documents, and that the Contractor has produced an inferior or unsatisfactory product, the Contractor shall remove and replace or otherwise correct the work or materials at no expense to the Department.

For base and surface courses, the Department will allow the finished grade to vary as much as 0.1 foot from the grade shown in the Plans, provided that the Contractor's work meets all templates and straightedge requirements and contains suitable transitions.

5-4 Errors or Omissions in Contract Documents.

Errors and omissions discovered in the Plans or specifications are the total responsibility of the Design-Build Firm. The errors and omissions shall be brought to the attention of the Engineer of Record as well as the Engineer. Resolution of the question by the Engineer of Record is intended, and will be at no additional cost to the Department. All such modifications are subject to approval of the Engineer.

5-5 Authority of the Engineer.

Perform all work to the satisfaction of the Engineer.

The Director, Office of Construction, will decide all questions, difficulties, and disputes, of whatever nature that may arise relative to the interpretation of the Plans, construction, prosecution, and fulfillment of the Contract, and as to the character, quality, amount, and value of any work done, and materials furnished, under or by reason of the Contract.

5-6 Authority and Duties of Engineer's Assistants.

The Director, Office of Construction, may appoint such assistants and representatives, as desired. These assistants and representatives are authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the manufacture, preparation, or fabrication of the materials to be used. Such assistants and representatives are not authorized to revoke, alter, or waive any requirement of these Specifications. Rather, they are authorized to call to the attention of the Contractor any failure of the work or materials to meet the Contract Documents, and have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Engineer. The Engineer will immediately submit written notification to the Contractor of any such suspension of the work, stating in detail the reasons for the suspension. The presence of the inspector or other assistant in no way lessens the responsibility of the Contractor.

5-7 Engineering and Layout.

Not Applicable.

5-8 Contractor's Supervision.

5-8.1 Prosecution of Work: Give the work the constant attention necessary to ensure the scheduled progress, and cooperate fully with the Engineer and with other Contractors at work in the vicinity.

5-8.2 Contractor's Superintendent: Maintain a competent superintendent at the site at all times while work is in progress to act as the Contractor's agent. Provide a superintendent who is a competent superintendent capable of properly interpreting the Contract Documents and is

thoroughly experienced in the type of work being performed. Provide a superintendent with the full authority to receive instructions from the Engineer and to execute the orders or directions of the Engineer, including promptly supplying any materials, tools, equipment, labor, and incidentals that may be required. Provide such superintendence regardless of the amount of work sublet.

Provide a superintendent who speaks and understands English, and maintain at least one other responsible person who speaks and understands English, on the project during all working hours.

5-8.3 Supervision for Emergencies: Provide a responsible person, who speaks and understands English, and who is available at or reasonably near the worksite on a 24-hour basis, seven days a week. Designate this person as the point of contact for emergencies and in cases that require immediate action to maintain traffic or to resolve any other problem that might arise. Submit the phone numbers and names of personnel designated to be contacted in cases of emergencies, along with a description of the project location, to the Florida Highway Patrol and all other local law enforcement agencies.

5-9 General Inspection Requirements.

5-9.1 Cooperation by Contractor: Do not perform work or furnish materials without obtaining inspection by the Engineer. Provide the Engineer with safe means of access to the work, so the Engineer can determine whether the work performed and materials used are in accordance with the requirements and intent of the Contract Documents. For bridge projects with construction operations accessible only by watercraft, provide safe passage and transport to facilitate the Engineer's inspection of the Work. If the Engineer so requests at any time before final acceptance of the work, remove or uncover such portions of the finished work as directed. After examination, restore the uncovered portions of the work to the standard required by the Contract Documents. If the Engineer determines that the work so exposed or examined is unacceptable, perform the uncovering or removal, and the replacing of the covering or making good of the parts removed, at no expense to the Department. However, if the Engineer determines that the work thus exposed or examined is acceptable, the Department will pay for the uncovering or removing, and the replacing of the covering or making good of the parts removed in accordance with 4-4.

5-9.2 Failure of Engineer to Reject Work During Construction: If, during or prior to construction operations, the Engineer fails to reject defective work or materials, whether from lack of discovery of such defect or for any other reason, such initial failure to reject in no way prevents the later rejection when such defect is discovered, or obligates the Department to final acceptance. The Department is not responsible for losses suffered due to any necessary removals or repairs of such defects.

5-9.3 Failure to Remove and Renew Defective Materials and Work: If the Contractor fails or refuses to remove and renew any defective materials used or work performed, or to make any necessary repairs in an acceptable manner and in accordance with the requirements of the Contract within the time indicated in writing, the Engineer has the authority to repair, remove, or renew the unacceptable or defective materials or work as necessary, all at the Contractor's expense. The Department will obtain payment for any expense it incurs in making these repairs, removals, or renewals, that the Contractor fails or refuses to make, by deducting such expenses from any moneys due or which may become due the Contractor, or by charging such amounts against the Contract bond.

5-9.4 Inspection by Federal Government: When the United States Government pays a portion of the cost of construction, its representatives may inspect the construction work, as they deem necessary. However, such inspection will in no way make the Federal Government a party to the Contract.

5-10 Final Inspection.

5-10.1 Maintenance until Acceptance: Maintain all Work until the Engineer has given final acceptance in accordance with 5-11.

5-10.2 Inspection for Acceptance: Upon submittal of written notification that all Contract Work, or all Contract Work on the portion of the Contract scheduled for acceptance, has been completed, the Engineer will make an inspection for acceptance. The inspection will be made within seven days of such notification. If the Engineer finds that all work has been satisfactorily completed, the Department will consider such inspection as the final inspection. If any or all of the Work is found to be unsatisfactory, the Engineer will detail the remedial work required to achieve acceptance. Immediately perform such remedial work. Subsequent inspections will be made on the remedial work until the Engineer accepts all Work.

Upon satisfactory completion of the Work, the Department will submit written notice of acceptance, partial or final, to the Contractor.

Until final acceptance in accordance with 5-11, replace or repair any damage to the accepted Work. Payment of such work will be as provided in 7-14.

5-10.3 Partial Acceptance: At the Engineer's sole discretion, the Engineer may accept any portion of the Work under the provisions of 5-10.2.

5-10.4 Conditional Acceptance: The Engineer will not make, or consider requests for conditional acceptance of a project.

5-11 Final Acceptance.

When, upon completion of the final construction inspection of the entire project, the Engineer determines that the Contractor has satisfactorily completed the work, the Engineer will submit written notice of final acceptance to the Contractor.

5-12 Claims by Contractor.

5-12.1 General: When the Contractor deems that extra compensation or a time extension is due beyond that agreed to by the Engineer, whether due to delay, additional work, altered work, differing site conditions, breach of Contract, or for any other cause, the Contractor shall follow the procedures set forth herein for preservation, presentation and resolution of the claim.

Submission of timely notice of intent to file a claim, preliminary time extension request, time extension request, and the certified written claim, together with full and complete claim documentation, are each a condition precedent to the Contractor bringing any circuit court, arbitration, or other formal claims resolution proceeding against the Department for the items and for the sums or time set forth in the Contractor's certified written claim. The failure to provide such notice of intent, preliminary time extension request, time extension request, certified written claim and full and complete claim documentation within the time required shall constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to additional compensation or a time extension for such claim.

5-12.2 Notice of Claim:

5-12.2.1 Claims For Extra Work: Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the

Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit written notification to the Engineer of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. If such written notification is not submitted and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension. Such notice by the Contractor, and the fact that the Engineer has kept account of the labor, materials and equipment, and time, shall not in any way be construed as establishing the validity of the claim or method for computing any compensation or time extension for such claim. On projects with an original Contract amount of \$3,000,000 or less within 90 calendar days after final acceptance of the project in accordance with 5-11, and on projects with an original Contract amount greater than \$3,000,000 within 180 calendar days after final acceptance of the project in accordance with 5-11, the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9. However, for any claim or part of a claim that pertains solely to final estimate quantities disputes the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9, as to such final estimate claim dispute issues, within 90 or 180 calendar days, respectively, of the Contractor's receipt of the Department's final estimate.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

5-12.2.2 Claims For Delay: Where the Contractor deems that additional compensation or a time extension is due on account of delay, differing site conditions, breach of Contract, or any other cause other than for work or materials not expressly provided for in the Contract (Extra Work) or which is by written directive of the Engineer expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit a written notice of intent to the Engineer within ten days after commencement of a delay to a controlling work item expressly notifying the Engineer that the Contractor intends to seek additional compensation, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay to a controlling work item, as to such delay and providing a reasonably complete description as to the cause and nature of the delay and the possible impacts to the Contractor's work by such delay, and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. On projects with an original Contract amount of \$3,000,000 or less within 90 calendar days after final acceptance of the project in accordance with 5-11, and on projects with an original Contract amount greater than \$3,000,000 within 180 calendar days after final acceptance of the project in accordance with 5-11, the Contractor shall submit full and complete documentation as described in 5-12.3 and duly certified pursuant to 5-12.9.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

There shall be no Contractor entitlement to any monetary compensation or time extension for any delays or delay impacts, whatsoever, that are not to a controlling work item, and then as to any such delay to a controlling work item entitlement to any monetary compensation or time extension shall only be to the extent such is otherwise provided for expressly under 4-3 or 5-12, except that in the instance of delay to a non-controlling item of work the Contractor may be compensated for the direct costs of idle labor or equipment only, at the rates set forth in 4-3.2.1 (1) and (3), and then only to the extent the Contractor could not reasonably mitigate such idleness.

If the Contractor provides the written notice of intent, the preliminary request for time extension, and the request for Contract Time extension in compliance with the aforementioned time and content requirements, the Contractor's claim for delay to a controlling work item will be evaluated as of the date of the elimination of the delay even if the Contractor's performance subsequently overcomes the delay. If the claim for delay has not been settled, the Contractor must also comply with 5-12.3 and 5-12.9 to preserve the claim.

5-12.3 Content of Written Claim: As a condition precedent to the Contractor being entitled to additional compensation or a time extension under the Contract, for any claim, the Contractor shall submit a certified written claim to the Department which will include for each individual claim, at a minimum, the following information:

1. A detailed factual statement of the claim providing all necessary dates, locations, and items of work affected and included in each claim;
2. The date or dates on which actions resulting in the claim occurred or conditions resulting in the claim became evident;
3. Identification of all pertinent documents and the substance of any material oral communications relating to such claim and the name of the persons making such material oral communications;
4. Identification of the provisions of the Contract which support the claim and a statement of the reasons why such provisions support the claim, or alternatively, the provisions of the Contract which allegedly have been breached and the actions constituting such breach;
5. A detailed compilation of the amount of additional compensation sought and a breakdown of the amount sought as follows:
 - a. Documented additional job site labor expenses;
 - b. Documented additional cost of materials and supplies;
 - c. A list of additional equipment costs claimed, including each piece of equipment and the rental rate claimed for each;
 - d. Any other additional direct costs or damages and the documents in support thereof;
 - e. Any additional indirect costs or damages and all documentation in support thereof.

6. A detailed compilation of the specific dates and the exact number of calendar days sought for a time extension, the basis for entitlement to time for each day, all documentation of the delay, and a breakout of the number of days claimed for each identified event, circumstance or occurrence.

Further, the Contractor shall be prohibited from amending either the bases of entitlement or the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder, and any circuit court, arbitration, or other formal claims resolution proceeding shall be limited solely to the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder. This shall not, however, preclude a Contractor from withdrawing or reducing any of the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder at any time.

5-12.4 Action on Claim: The Engineer will respond in writing on projects with an original Contract amount of \$3,000,000 or less within 90 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3, and on projects with an original Contract amount greater than \$3,000,000 within 120 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3. Failure by the Engineer to respond in writing to a claim within 90 or 120 days, respectively, after receipt of a complete claim submitted by the Contractor in compliance with 5-12.3 constitutes a denial of the claim by the Engineer. If the Engineer finds the claim or any part thereof to be valid, such partial or whole claim will be allowed and paid for to the extent deemed valid and any time extension granted, if applicable, as provided in the Contract. No circuit court or arbitration proceedings on any claim, or a part thereof, may be filed until after final acceptance per 5-11 of all Contract work by the Department or denial hereunder, whichever occurs last.

5-12.5 Pre-Settlement and Pre-Judgment Interest: Entitlement to any pre-settlement or prejudgment interest on any claim amount determined to be valid subsequent to the Department's receipt of a certified written claim in full compliance with 5-12.3, whether determined by a settlement or a final ruling in formal proceedings, the Department shall pay to the Contractor simple interest calculated at the Prime Rate (as reported by the Wall Street Journal as the base rate on corporate loans posted by at least 75% of the Nation's 30 largest banks) as of the 60th calendar day following the Department's receipt of a certified written claim in full compliance with 5-12.3, such interest to accrue beginning 60 calendar days following the Department's receipt of a certified written claim in full compliance with 5-12.3 and ending on the date of final settlement or formal ruling.

5-12.6 Compensation for Extra Work or Delay:

5-12.6.1 Compensation for Extra Work: Notwithstanding anything to the contrary contained in the Contract Documents, the Contractor shall not be entitled to any compensation beyond that provided for in 4-3.2.

5-12.6.2 Compensation for Delay: Notwithstanding anything to the contrary contained in the Contract Documents, the additional compensation set forth in 5-12.6.2.1 shall be the Contractor's sole monetary remedy for any delay other than to perform extra work caused by the Department unless the delay shall have been caused by acts constituting willful or intentional interference by the Department with the Contractor's performance of the work and then only where such acts continue after Contractor's written notice to the Department of such interference. The parties anticipate that delays may be caused by or arise from any number of

events during the term of the Contract, including, but not limited to, work performed, work deleted, supplemental agreements, work orders, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors or other Contractors, actions by third parties, suspensions of work by the Engineer pursuant to 8-6.1, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, Holidays, Special Events, suspension of Contract Time, or other events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on the performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not be deemed to constitute willful or intentional interference with the Contractor's performance of the work without clear and convincing proof that they were the result of a deliberate act, without reasonable and good-faith basis, and specifically intended to disrupt the Contractor's performance.

5-12.6.2.1 Compensation for Direct Costs, Indirect Costs, Expenses, and Profit thereon, of or from Delay: For any delay claim, the Contractor shall be entitled to monetary compensation for the actual idle labor (including supervisory personnel) and equipment, and indirect costs, expenses, and profit thereon, as provided for in 4-3.2.1(4) and solely for costs incurred beyond what reasonable mitigation thereof the Contractor could have undertaken.

5-12.7 Mandatory Claim Records: After submitting to the Engineer a notice of intent to file a claim for extra work or delay, the Contractor must keep daily records of all labor, material and equipment costs incurred for operations affected by the extra work or delay. These daily records must identify each operation affected by the extra work or delay and the specific locations where work is affected by the extra work or delay, as nearly as possible. The Engineer may also keep records of all labor, material and equipment used on the operations affected by the extra work or delay. The Contractor shall, once a notice of intent to claim has been timely filed, and not less than weekly thereafter as long as appropriate, submit the Contractor's daily records to the Engineer and be likewise entitled to receive the Department's daily records. The daily records to be submitted hereunder shall be done at no cost to the recipient.

5-12.8 Claims For Acceleration: The Department shall have no liability for any constructive acceleration of the work, nor shall the Contractor have any right to neither make any claim for constructive acceleration nor include the same as an element of any claim the Contractor may otherwise submit under this Contract. If the Engineer gives express written direction for the Contractor to accelerate its efforts, such written direction will set forth the prices and other pertinent information and will be reduced to a written Contract Document promptly. No payment will be made on a Supplemental Agreement for acceleration prior to the Department's approval of the documents.

5-12.9 Certificate of Claim: When submitting any claim, the Contractor shall certify under oath and in writing, in accordance with the formalities required by Florida law, that the claim is made in good faith, that the supportive data are accurate and complete to the Contractor's best knowledge and belief, and that the amount of the claim accurately reflects what the Contractor in good faith believes to be the Department's liability. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor.

5-12.10 Non-Recoverable Items: The parties agree that for any claim the Department will not have liability for the following items of damages or expense:

1. Loss of profit, incentives or bonuses;

2. Any claim for other than extra work or delay;
3. Consequential damages, including, but not limited to, loss of bonding capacity, loss of bidding opportunities, loss of credit standing, cost of financing, interest paid, loss of other work or insolvency;
4. Acceleration costs and expenses, except where the Department has expressly and specifically directed the Contractor in writing, "to accelerate at the Department's expense"; nor
5. Attorney fees, claims preparation expenses and costs of litigation.

5-12.11 Exclusive Remedies: Notwithstanding any other provision of this Contract, the parties agree that the Department shall have no liability to the Contractor for expenses, costs, or items of damages other than those, which are specifically identified as payable under 5-12. In the event any legal action for additional compensation, whether on account of delay, acceleration, breach of Contract, or otherwise, the Contractor agrees that the Department's liability will be limited to those items which are specifically identified as payable in 5-12.

5-12.12 Settlement Discussions: The content of any discussions or meetings held between the Department and the Contractor to settle or resolve any claims submitted by the Contractor against the Department shall be inadmissible in any legal, equitable, arbitration or administrative proceedings brought by the Contractor against the Department for payment of such claim. Dispute Resolution Board, State Arbitration Board and Claim Review Committee proceedings are not settlement discussions, for purposes of this provision.

5-12.13 Personal Liability of Public Officials: In carrying out any of the provisions of the Contract or in exercising any power or authority granted to the Secretary of Transportation, Engineer or any of their respective employees or agents, there shall be no liability on behalf of any employee, officer or official of the Department for which such individual is responsible, either personally or as officials or representatives of the Department. It is understood that in all such matters such individuals act solely as agents and representatives of the Department.

5-12.14 Auditing of Claims: All claims filed against the Department shall be subject to audit at any time following the filing of the claim, whether or not such claim is part of a suit pending in the Courts of this State. The audit may be performed, at the Department's sole discretion, by employees of the Department or by any independent auditor appointed by the Department, or both. The audit may begin after ten days written notice to the Contractor, subcontractor, or supplier. The Contractor, subcontractor, or supplier shall make a good faith effort to cooperate with the auditors. As a condition precedent to recovery on any claim, the Contractor, subcontractor, or supplier must retain sufficient records, and provide full and reasonable access to such records, to allow the Department's auditors to verify the claim and failure to retain sufficient records of the claim or failure to provide full and reasonable access to such records shall constitute a waiver of that portion of such claim that cannot be verified and shall bar recovery thereunder. Further, and in addition to such audit access, upon the Contractor submitting a written claim, the Department shall have the right to request and receive, and the Contractor shall have the affirmative obligation to submit to the Department any and all documents in the possession of the Contractor or its subcontractors, materialmen or suppliers as may be deemed relevant by the Department in its review of the basis, validity or value of the Contractor's claim.

Without limiting the generality of the foregoing, the Contractor shall upon written request of the Department make available to the Department's auditors, or upon the

Department's written request, submit at the Department's expense, any or all of the following documents:

1. Daily time sheets and foreman's daily reports and diaries;
2. Insurance, welfare and benefits records;
3. Payroll register;
4. Earnings records;
5. Payroll tax return;
6. Material invoices, purchase orders, and all material and supply acquisition Contracts;
7. Material cost distribution worksheet;
8. Equipment records (list of company owned, rented or other equipment used);
9. Vendor rental agreements and subcontractor invoices;
10. Subcontractor payment certificates;
11. Canceled checks for the project, including, payroll and vendors;
12. Job cost report;
13. Job payroll ledger;
14. General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;
15. Cash disbursements journal;
16. Financial statements for all years reflecting the operations on this project;
17. Income tax returns for all years reflecting the operations on this project;
18. All documents which reflect the Contractor's actual profit and overhead during the years this Contract was being performed and for each of the five years prior to the commencement of this Contract;
19. All documents related to the preparation of the Contractor's bid including the final calculations on which the bid was based;
20. All documents which relate to each and every claim together with all documents, which support the amount of damages as to each claim;
21. Worksheets used to prepare the claim establishing the cost components for items of the claim including, but not limited to, labor, benefits and insurance, materials, equipment, subcontractors, and all documents that establish which time periods and individuals were involved, and the hours and rates for such individuals.

5-13 Recovery Rights, Subsequent to Final Payment.

The Department reserves the right, if it discovers an error in the partial or final estimates, or if it discovers that the Contractor performed defective work or used defective materials, after the final payment has been made, to claim and recover from the Contractor or his surety, or both, by process of law, such sums as may be sufficient to correct the error or make good the defects in the work and materials.

5-14 Value Added Project Features.

5-14.1 Description: Construct Value Added Project Features consisting of those features provided for in the Design and Construction Criteria and/or the Technical Proposal.

The Contractor shall assume responsibility for all the associated guaranteed work specified in this Article for a minimum period of five years, unless otherwise stated in the Contract, after final acceptance of the Contract in accordance with 5-11, including continued responsibility as to any deficiencies to which notice was provided to the Contractor within such guarantee period until all such pre-existing deficiencies are resolved.

5-14.2 Responsible Party: For the purpose of this Specification, the Contractor shall be the responsible party unless otherwise agreed to in writing by the Department.

Upon final acceptance of the Contract in accordance with 5-11, the Contractor's responsibility for maintenance of all the work or facilities within the project limits of the Contract will terminate in accordance with 5-11; with the sole exception that the obligations set forth in this Article for Value Added Project Features shall continue thereafter to be responsibility of the Contractor as otherwise provided in this Article.

5-14.3 Evaluation and Remedial Work: Identify in the Technical Proposal each guaranteed feature with its associated type of distress and threshold values defining the extent and magnitude of such distresses that will necessitate remedial work. The Contractor will conduct a review of the Value Added Project Features during the guarantee period in accordance with the frequency established in the contract, but in any case, at least once annually. The Department may conduct a review at intermediate times as determined necessary by the Department. Conduct final review, no later than forty five calendar days before the end of guarantee period for each item.

All reviews by the Contractor will be conducted at no cost to the Department. The Department will be advised of the review schedule at least seven calendar days prior to the review-taking place. The results of the review, intermediate or final, shall be made available to the Department within fifteen calendar days after completion of the review.

If the review findings, intermediate or final, are not accepted by the Department, the Department will provide written notification to the Contractor within thirty calendar days of the date of receipt of the results of the review.

During the guarantee period, the Contractor may monitor the project using nondestructive procedures. The Contractor shall not conduct any coring, milling or other destructive procedures without prior approval by the Department.

If a measured distress value indicates remedial action is required per the contract, the Contractor shall begin remedial work within forty five calendar days of the Contractor's review or a ruling of the Statewide Disputes Review Board that the Contractor is responsible for the remedial action required to correct the measured distress, whichever is later. The Department will determine the allowable duration for the completion of the remedial work.

In the event remedial action is necessary and forensic information is required to determine the source of the distress, obtain approval of the Department prior to starting any forensic activities. All forensic activities shall be at no cost to the Department. The Department will not be responsible for damages to the Value Added Project Features as a result of any forensic activities conducted by the Contractor.

The Contractor has the first option to perform all remedial work that is determined by the Department to be the Contractor's responsibility. If, in the opinion of the Department, the feature showing distress poses an immediate danger to the traveling public and the Contractor cannot begin remedial work within the time frame established by the Department, the Department has the authority to have the remedial work performed by other forces. The Contractor is responsible for all incurred costs of the work performed by other forces should the

problem (remedial work) be determined to be its responsibility. Remedial work performed by other forces does not alter any of the requirements, responsibilities or obligations of the Contractor.

The Contractor shall complete all remedial work to the satisfaction of the Department. Any disputes regarding the adequacy of the remedial work will be resolved by the Statewide Disputes Review Board in accordance with 5-14.4. Approval of remedial work does not relieve the Contractor from continuing responsibility under the provisions of this specification.

Notify the Department in writing prior to beginning any remedial work. Meet the requirements of the Contract when performing any remedial work.

Perform all remedial work at no cost to the Department. If remedial work necessitates a corrective action to the pavement markings, adjacent lane (s), roadway shoulders, or any other elements, perform these corrective actions using similar products at no additional cost to the Department.

5-14.4 Disputes Resolution: The Statewide Disputes Review Board in accordance with 8-3.8 will be utilized to resolve any and all disputes that may arise involving administration and enforcement of this Specification.

5-14.5 Value Added Work: During the guarantee period, the Contractor shall perform all necessary remedial work described in the Contract. Should an impasse develop in any regard as to the need for remedial work or the extent required, the Statewide Disputes Review Board would render a final decision.

The maintenance obligation for Value Added Project Features will not apply to deficiencies if any one of the following factors is found to be beyond the control of the Contractor:

1. Determination that the deficiency was due to the failure of the other features not a part of the contract.
2. Determination that the deficiency was the responsibility of a third party performing work not included in the contract.

5-14.6 Failure to Perform: Should the Contractor fail to timely submit any dispute to the Statewide Dispute Review Board, refuse to submit any dispute to the Statewide Dispute Review Board, fail to satisfactorily perform any remedial work within the duration allowed by the Department, or fail to compensate the Department for any remedial work performed by the Department, as determined by the Statewide Disputes Review Board to be the Contractor's responsibility, the Department shall suspend, revoke or deny the Contractor's certificate of qualification under the terms of Section 337.16(d)(2), Florida Statutes, until the remedial work has been satisfactorily performed or full and complete payment for the remedial work made to the Department.

In no case shall the period of suspension, revocation, or denial of the Contractor's certificate of qualification be less than six months. Should the Contractor choose to challenge the Department's notification of intent for suspension, revocation or denial of qualification and the Department's action is upheld, the Contractor shall have its qualification suspended for a minimum of six months or until the remedial action is satisfactorily performed, whichever is longer.

5-14.7 Traffic Control: During maintenance work operations, perform all signing and traffic control in accordance with the current edition of the Department's Roadway and Traffic Design Standards for Design, Construction, Maintenance and Utility Operations on the State

Highway System. Provide Maintenance of Traffic during remedial work at no additional cost to the Department. Lane closure restrictions listed in the original Contract will apply to remedial work. Notification of lane closure for remedial work must be made to the Department forty eight hours in advance. Obtain a Maintenance Permit prior to performing any guarantee work operations.

SECTION 6 CONTROL OF MATERIALS

6-1 Acceptance Criteria.

6-1.1 General: Acceptance of materials is based on the following criteria. All requirements may not apply to all materials. Use only materials in the work that meet the requirements of these Specifications. The Engineer may inspect and test any material, at points of production, distribution and use.

6-1.2 Sampling and Testing: Use the Department's current sample identification and tracking system to provide related information and attach the information to each sample. Restore immediately any site from which material has been removed for sampling purposes to the pre-sampled condition with materials and construction methods used in the initial construction, at no additional cost to the Department.

Ensure when a material is delivered to the location as described in the Contract Documents, there is enough material delivered to take samples, at no expense to the Department.

6-1.2.1 Pretest by Manufacturers: Submit certified manufacturer's test results to the Engineer for qualification and use on Department projects. Testing will be as specified in the Contract Documents. The Department may require that manufacturers submit samples of materials for independent verification purposes.

6-1.2.2 Point of Production Test: Test the material during production as specified in the Contract Documents.

6-1.2.3 Point of Distribution Test: Test the material at Distribution facilities as specified in the Contract Documents.

6-1.2.4 Point of Use Test: Test the material immediately following placement as specified in the Specifications. After delivery to the project, the Department may require the retesting of materials that have been tested and accepted at the source of supply, or may require the testing of materials that are to be accepted by manufacturer certification. The Department may reject all materials that, when retested, do not meet the requirements of these Specifications.

6-1.3 Certification:

6-1.3.1 Manufacturer Material Certification: Submit material certifications for all materials to the Engineer for approval when required by the Specifications. Materials will not be considered for payment when not accompanied by a material certification. Sample material certification forms are available on the Department's website at the following URL: <https://www.fdot.gov/materials/administration/resources/library/publications/certifications/sampleforms.shtm>. Ensure that the material certification follows the format of the sample form, is submitted on the manufacturer's letterhead, and is signed by a legally responsible person employed by the manufacturer.

6-1.3.1.1 Approved Product List: This list provides assurance to Contractors, consultants, designers, and Department personnel that specific products and

materials are approved for use on Department facilities. The Department will limit the Contractor's use of products and materials that require use of APL items to those listed on the APL effective at the time of placement. Where the terms "Qualified Products List" or "QPL" appear in Contract Documents, they will be synonymous with "Approved Product List" and "APL".

Manufacturers seeking to have a product evaluated for the APL must submit a Request for Product Consideration application, available on the Department's website at the following URL:

<https://www.fdot.gov/programmanagement/ProductEvaluation/Default.shtm>. Applications must include supporting documentation required by the Specifications, Standard Plans, and APL approval process. Required test reports must be conducted by an independent laboratory or other independent testing facility and required drawings and calculations must be signed and sealed by a Professional Engineer licensed in the State of Florida, unless defined otherwise in the Specifications, Design Standards, and APL approval process requirements. Applications must be signed by a legally responsible person employed by the manufacturer of the product. Manufacturer name and material designation (product name, product model/part number/style number, etc.) submitted on the application must be as identified on the product, product packaging and product labels as required by the Specifications.

Products that have successfully completed the Department's evaluation process are eligible for inclusion on the APL. Unless defined otherwise in the Specifications, Standard Plans, or APL approval process requirements, products listed on the APL must have an associated photograph, drawing, or product label submitted by the product manufacturer before listing on the APL. Manufacturers are required to submit requests to the Department for approval of any modifications or alterations made to a product listed on the APL. This includes, but is not limited to, design, materials, fabrication methods or operational modifications. Modification or alteration requests must be submitted along with supporting documentation that the product continues to meet the Specification or Standard Plans requirements. A sample and additional product testing may be required for the modification evaluation. Any marked variations from original test values, failure to notify the Department of any modifications or alterations, or any evidence of inadequate performance of a product as a result of product modification or alteration, may result in removal of the product from the APL.

Manufacturers must submit supporting documentation to the Department for a periodic review and re-approval of their APL products on or before the product's original approval anniversary. APL products that are not re-approved may be removed from the APL. Documentation requirements for the product review and re-approval, including schedule and criteria are available on the Department's website at the following URL:

<https://www.fdot.gov/programmanagement/ProductEvaluation/Default.shtm>

6-1.3.2 Contractor Installation Certification: Submit installation certifications as required by the Contract Documents.

6-1.3.3 Lump Sum Project General Requirements: Material is accepted by material sampling and testing requirements for the following work activities: Earthwork and Related Operations, Base Courses, Hot Bituminous Mixtures, Portland Cement Concrete, and Reinforcing Steel as stated in 9-11.1. Fabricated metal acceptance will be in accordance with 9-11.2. All other material acceptance will be in accordance with 6-1.

6-1.3.4 Certification on Approved Product List (APL) Products: Submit to the Engineer a notarized manufacturer's certification on each APL product that will be incorporated

in the project. Submit the certification prior to utilization of the material on the project. Each certification will have the manufacturer letterhead, product name, batch number, FPID, Contract Number, category, county, title of certification person and test results in each product listed in the Department Specification. This letter will also provide the following statement: “This product meets the material specifications as provided in the Contract Documents.” Ensure that the date of the manufacturer’s certification is current to the shelf life of the product. This letter will be delivered to the jobsite prior to placement or utilization. Retain test results for a minimum of three years.

6-1.3.5 Certification on all Other Materials Not Specified: Submit to the Engineer a notarized manufacturer’s certification on each product that will be incorporated in the project. Submit the certification prior to utilization on the project. Each certification will have the manufacturer letterhead, identification and type of material, FPID, Contract Number, county, test results of the material and notarized signature from the manufacturer. This letter will also provide the following statement: “This product meets the material specifications as provided in the Contract Documents.” Ensure that the date of the manufacturer’s certification is current to the shelf life of the product. Retain test results for a minimum of three years.

6-2 Applicable Documented Authorities other than Specifications.

6-2.1 General: Details on individual materials are identified in various material specific Sections of the Specifications that may refer to other documented authorities for requirements. When specified, meet the requirements as defined in such references.

6-2.2 Test Methods: Methods of sampling and testing materials are in accordance with the Florida Methods (FM). If a Florida Method does not exist for a particular test, perform the testing in accordance with the method specified in the Specification. When test methods or other standards are referenced in the Specifications without identification of the specific time of issuance, use the most current issuance, including interims or addendums thereto, at the time of bid opening.

6-2.3 Construction Aggregates: Aggregates used on Department projects must be in accordance with Rule 14-103, FAC.

6-3 Storage of Materials and Samples.

6-3.1 Method of Storage: Store materials in such a manner as to preserve their quality and fitness for the work, to facilitate prompt inspection, and to minimize noise impacts on sensitive receivers. More detailed specifications concerning the storage of specific materials are prescribed under the applicable Specifications. The Department may reject improperly stored materials.

6-3.2 Use of Right-of-Way for Storage: If the Engineer allows, the Contractor may use a portion of the right-of-way for storage purposes and for placing the Contractor’s plant and equipment. Use only the portion of the right-of-way that is outside the clear zone, which is the portion not required for public vehicular or pedestrian travel. When used, restore the right-of-way to pre-construction condition at no additional cost to the Department or as specified in the Contract Documents. Provide any additional space required at no expense to the Department.

6-3.3 Responsibility for Stored Materials: Accept responsibility for the protection of stored materials. The Department is not liable for any loss of materials, by theft or otherwise, or for any damage to the stored materials.

6-3.4 Storage Facilities for Samples: Provide facilities for storage of samples as described in the Contract Documents and warranted by the test methods and Specifications.

6-4 Defective Materials.

Materials not meeting the requirements of these Specifications will be considered defective. The Engineer will reject all such materials, whether in place or not. Remove all rejected material immediately from the site of the work and from storage areas, at no expense to the Department.

Do not use material that has been rejected, until the Engineer has approved the material's use. Upon failure to comply promptly with any order of the Engineer made under the provisions of this Article, the Engineer has the authority to have the defective material removed and replaced by other forces and deduct the cost of removal and replacement from any moneys due or to become due the Contractor.

6-4.1 Engineering Analysis: As an exception to the above, within 30 calendar days of the termination of the LOT or rejection of the material, the Contractor may submit to the Engineer a proposed Engineering Analysis Scope to determine the disposition of the material. The Engineering Analysis Scope must contain at a minimum:

1. Description of the defective materials.
2. Supporting information, testing or inspection reports with nonconformities, pictures, drawings, and accurately dimensioned deficiency maps as necessary. For cracked elements, provide drawings showing the location, average width, depth, length, and termination points of each crack along the surfaces. Provide the distance from each termination point to a fixed reference point on the component, such as beam end or edge of flange.
3. Proposed approach of investigation and analysis.
4. Name and credentials of the proposed Specialty Engineer or Contractor's Engineer of Record who will perform the Engineering Analysis.
5. Proposed testing laboratories, qualified in accordance with Section 105-7.

Upon approval of the Engineering Analysis Scope by the Engineer, the Specialty Engineer or Contractor's Engineer of Record may perform the Engineering Analysis as defined in the approved scope and submit a signed and sealed Engineering Analysis Report (EAR) to the Engineer. The EAR must contain at a minimum:

1. The approved Engineering Analysis Scope.
2. Any investigations performed and the associated results obtained.
3. Analysis and conclusion.
4. Proposed disposition of the material, addressing the performance and durability of the proposed action.

Provide as appropriate:

1. Written evidence of a previously approved comparable deficiency and its repair.
2. Documented research demonstrating the effectiveness of the proposed repair.
3. Engineering calculations.

A Specialty Engineer, who is an independent consultant, or the Contractor's Engineer of Record as stated within each individual Section shall perform any such analysis within 45 calendar days of the Engineer's approval of the Engineering Analysis Scope, complete and submit the EAR. The EAR must be signed and sealed by the Specialty Engineer or the Contractor's Engineer of Record that performed the Engineering Analysis. The Engineer will

determine the final disposition of the material after review of the EAR. No additional monetary compensation or time extension will be granted for the impact of any such analysis or review.

6-5 Products and Source of Supply.

6-5.1 Source of Supply–Convict Labor (Federal-Aid Contracts Only): Do not use materials that were produced after July 1, 1991, by convict labor for Federal-aid highway construction projects unless the prison facility has been producing convict-made materials for Federal-aid highway construction projects before July 1, 1987.

Use materials that were produced prior to July 2, 1991, by convicts on Federal-aid highway construction projects free from the restrictions placed on the use of these materials by 23 U.S.C. 114. The Department will limit the use of materials produced by convict labor for use in Federal-aid highway construction projects to:

1. Materials produced by convicts on parole, supervised release, or probation from a prison or,
2. Materials produced in a qualified prison facility.

The amount of such materials produced for Federal-aid highway construction during any 12-month period shall not exceed the amount produced in such facility for use in such construction during the 12-month period ending July 1, 1987.

6-5.2 Source of Supply-Steel: Use steel and iron manufactured in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melting and continuing through the final shaping and coating. If a steel or iron product is taken outside the United States for any process, it becomes foreign source material. When using steel or iron as a component of any manufactured product (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply. Foreign steel and iron may be used when the total actual cost of such foreign materials does not exceed 0.1% of the total Contract amount or \$2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work, but are not applicable to steel and iron items that the Contractor uses but does not incorporate into the finished work. Submit a certification from the manufacturer of steel or iron, or any product containing steel or iron, stating that all steel or iron furnished or incorporated into the furnished product was produced and manufactured in the United States or a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual cost). Submit each such certification to the Engineer prior to incorporating the material or product into the project. Prior to the use of foreign steel or iron materials on a project, submit invoices to document the actual cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project. For work involving relocation of utilities within the Department's right-of-way in which the Utility Agency/Owner (UAO) is performing the relocation, require the UAO to comply with this subarticle.

6-5.3 Contaminated, Unfit, Hazardous, and Dangerous Materials: Do not use any material that, after approval and/or placement, has in any way become unfit for use. Do not use materials containing any substance that has been determined to be hazardous by the State of Florida Department of Environmental Protection or the U.S Environmental Protection Agency (EPA). Provide workplaces free from serious recognized hazards and to comply with

occupational safety and health standards, as determined by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA).

SECTION 7 LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC

7-1 Laws to be Observed.

7-1.1 General: Become familiar with and comply with all Federal, State, and Local Rules and Regulations that control the action or operation of those engaged or employed in the work or that affect material used. Pay particular attention called to the safety regulations promulgated by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). In addition, comply with Chapter 403, of the Florida Statutes, regarding control of air pollution. Direct special attention to that portion of Chapter 62-256, Rules of the Department of Environmental Protection, Florida Administrative Code, pertaining to open burning in land clearing operations. Where work or structures included in the Contract are in “Navigable Waters of the U.S.,” (reference 33 of the Code of Federal Regulations, Part 329); “Waters of the U.S.,” (reference 33 of the Code of Federal Regulations, Parts 323 and 328); or “Waters of the State,” (reference Part 4, Chapters 253 and 373 of the Florida Statutes and Section 62-340 of the Florida Administrative Code); comply with the regulatory provisions of Section 404 of the Federal Clean Water Act of 1977; Sections 9 and 10 of the Federal River and Harbor Act of 1899; Chapter 161 of the Florida Statutes; and any local authority having jurisdiction over such waters.

Comply with Part IV, Chapter 378, of the Florida Statutes regarding land reclamation. Direct special attention to Chapters 62C-36 and 62C-39 of the Florida Administrative Code. Submit the Notice of Intent to Mine to
Department of Environmental Protection
Collins Building
2051 East Dirac Drive
Tallahassee, Florida 32310-3760

with a copy to the Engineer. The Engineer will determine consistency with the environmental documents prior to commencement of mining.

Obtain certification from the Construction Industry Licensing Board as required by Chapter 489, Part I, Florida Statutes, regardless of exemptions allowed by subsection 489.103, Florida Statutes prior to removing underground pollutant storage tanks. Dispose of tanks and pollutants in accordance with the requirements and regulations of any Federal, State, or local, agency having jurisdiction.

Prior to building construction or renovation, submit copies of current registrations or certifications issued by the Florida Construction Industry Licensing Board in accordance with Chapter 489, Florida Statutes, for the appropriate category of construction.

Corporations must be registered with the State of Florida, Department of State, Division of Corporations, and hold a current State Corporate Charter Number in accordance with Chapter 607, Florida Statutes.

The Contractor or the authorized subcontractor applying the roofing material must be licensed or be an approved dealer and applicator of the proposed roofing material.

Indemnify, defend, and save harmless the Department and all of its officers, agents, and employees, in the amount of the Contract price, against all claims or liability arising from or based on the violation of any such Federal, State, and Local Rules and Regulations; whether by himself or his employees.

The Contractor shall comply with all environmental permits, including measures identified in the National Pollutant Discharge Elimination System (NPDES) Stormwater Pollution Prevention Plan and Sediment and Erosion Control Plan for the work.

The Contractor shall exert every reasonable and diligent effort to ensure that all labor employed by the Contractor and his subcontractors for work on the project work harmoniously and compatibly with all labor used by other building and construction contractors now or hereafter on the site of the work covered by this Contract. Include this provision in all subcontracts, and require all subcontractors to include it in their subcontracts with others. However, do not interpret or enforce this provision so as to deny or abridge, on account of membership or non-membership in any labor union or labor organization, the right of any person to work as guaranteed by Article I, Section 6 of the Florida Constitution.

Comply with Chapter 556 of the Florida Statutes during the performance of excavation or demolition operations.

The Executive Order 11246 Electronic version, dated September 24, 1965 is posted on the Department's website at the following URL address:
https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/deo112468a91904c88e94148b94569982fdff3d2.pdf?sfvrsn=6b78d1d6_2 Take responsibility to obtain the information posted on this website up through five calendar days before the opening of bids and comply with the provisions contained in Executive Order 11246.

The FHWA-1273 Electronic version, dated May1, 2012 is posted on the Department's website at the following URL address:
https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/fhwa1273.pdf?sfvrsn=a8c7d8c8_2. Take responsibility to obtain this information and comply with all requirements posted on this website up through five calendar days before the opening of bids.

Comply with the provisions contained in FHWA-1273.

If the Department's website cannot be accessed, contact the Department's Specifications Office Web Coordinator at (850) 414-4101.

7-1.2 Plant Quarantine Regulations: The U.S. Department of Agriculture and the Florida Department of Agriculture and Consumer Services have issued quarantine regulations pertaining to control of the nematodes of citrus, Rule 5B-44, Florida Administrative Code, and other plant pests. Contact the local (or other available) representatives of the Animal and Plant Health Inspection Service of the U.S. Department of Agriculture, and the Division of Plant Industry of the Florida Department of Agriculture and Consumer Services to ascertain all current restrictions regarding plant pests that are imposed by these agencies. Keep advised of current quarantine boundary lines throughout the construction period.

These restrictions may affect operations in connection with such items as clearing and grubbing, earthwork, grassing and mulching, sodding, landscaping, and other items which might involve the movement of materials containing plant pests across quarantine lines.

Obtain quarantine regulations and related information from the following:

Animal and Plant Health Inspection Service

U.S. Department of Agriculture
3031 Lake Alfred Road
Winter Haven, Florida 33881

Director, Division of Plant Industry
Florida Department of Agriculture and Consumer Services
Post Office Box 147100
Gainesville, Florida 32614-7100

7-1.3 Introduction or Release of Prohibited Aquatic Plants, Plant Pests, or Noxious Weeds: Do not introduce or release prohibited aquatic plants, plant pests, or noxious weeds into the project limits as a result of clearing and grubbing, earthwork, grassing and mulching, sodding, landscaping, or other such activities. Immediately notify the Engineer upon discovery of all prohibited aquatic plants, plant pests, or noxious weeds within the project limits. Do not move prohibited aquatic plants, plant pests, or noxious weeds within the project limits or to locations outside of the project limits without the Engineer's permission. Maintain all borrow material brought onto the project site free of prohibited aquatic plants, plant pests, noxious weeds, and their reproductive parts. Refer to Rule 5B-64 and Rule 5B-57, of the Florida Administrative Code for the definition of prohibited aquatic plants, plant pests, and noxious weeds.

7-1.4 Compliance with Federal Endangered Species Act and other Wildlife Regulations: The Federal Endangered Species Act requires that the Department investigate the potential impact to a threatened or endangered species prior to initiating an activity performed in conjunction with a highway construction project. If the Department's investigation determines that there is a potential impact to a protected, threatened or an endangered species, the Department will conduct an evaluation to determine what measures may be necessary to mitigate such impact. When mitigation measures and/or special conditions are necessary, these measures and conditions will be addressed on the Contract Documents or in permits as identified in 7-2.1.

In addition, in cases where certain protected, threatened or endangered species are found or appear within close proximity to the project boundaries, the Department has established guidelines that will apply when interaction with certain species occurs, absent of any special mitigation measures or permit conditions otherwise identified for the project.

These guidelines are posted at the following URL address:

https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/endangeredwildlifeguidelines.pdf?sfvrsn=e27baf3f_4

Take responsibility to obtain this information and take all actions and precautions necessary to comply with the conditions of these guidelines during all project activities.

Prior to establishing any off-project activity in conjunction with a project, notify the Engineer of the proposed activity. Covered activities include but are not necessarily limited to borrow pits, concrete or asphalt plant sites, disposal sites, field offices, and material or equipment storage sites. Include in the notification the Financial Project ID, a description of the activity, the location of the site by township, range, section, county, and city, a site location map including the access route, the name of the property owner, and a person to contact to arrange a site inspection. Submit this notification at least 30 days in advance of planned commencement of the off-site activity, to allow for the Department to conduct an investigation without delaying job progress.

Do not perform any off-project activity without obtaining written clearance from the Engineer. In the event the Department's investigation determines a potential impact to a protected, threatened or endangered species and mitigation measures or permits are necessary, coordinate with the appropriate resource agencies for clearance, obtain permits and perform mitigation measures as necessary. Immediately notify the Engineer in writing of the results of this coordination with the appropriate resource agencies. Additional compensation or time will not be allowed for permitting or mitigation, associated with Contractor initiated off-project activities.

Manatees:

The Department has determined that the project occurs within the known habitat of manatees (*Trichechus manatus*).

The Department will provide instruction at a preconstruction meeting regarding:

1. The presence of the species and manatee speed zones.
2. The appearance, habits and biology of the species.
3. Their protected status.
4. The need to avoid collisions with and injury to the species.
5. The civil and criminal penalties for harming, harassing, or

killing these species.

Advise all work crews of this information.

Operate all vessels at "Idle Speed/No Wake" at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. Follow routes of deep water whenever possible.

Do not dredge river bottom for barge access.

Lower all equipment or material to the mudline in a controlled descent. Do not allow freefall of any equipment or material below the water surface.

Use fenders or buoys to prevent entrapping manatees between vessels and other structures

Maintain taut mooring lines. If slack remains in the line, sleeve the line with PVC.

Advise all on-site project personnel they are responsible for observing water-related activities for the presence of manatees. Follow the requirements posted in the URL address in Spec 7-1.4 when manatees are observed.

Except for projects in Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee and Walton:

1. Sediment or turbidity barriers shall be made of material which manatees cannot become entangled, shall be secured, and shall be monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

2. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the Contractor upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads "Caution: Boaters", must be posted in a location conspicuous to boating traffic. A second sign measuring at least 8-1/2 inches by 11 inches, explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations, must be posted in at least one location prominently visible to all onsite project personnel engaged in water-related activities. These signs can be viewed at:

<https://myfwc.com/wildlifehabitats/wildlife/manatee/education-for-marinas/>

Smalltooth Sawfish:

The Department has determined that the project occurs within the known habitat of smalltooth sawfish (*Pristis pectinata*).

The Department will provide instruction at a preconstruction meeting regarding:

1. The presence of species and limits of critical habitat.
2. The appearance, habits and biology of the species.
3. Their protected status.
4. The need to avoid collisions with these species.
5. The need to avoid any actions that would jeopardize the

existence of these species.

6. The civil and criminal penalties for harming, harassing, or killing these species.

Advise all work crews of this information.

Provide sediment and turbidity barriers constructed of material in which a smalltooth sawfish cannot become entangled. Secure and monitor the sediment and turbidity barriers to avoid protected species entrapment. Sediment and turbidity barriers may not block smalltooth sawfish entry to or exit from designated critical habitat without prior approval of the Engineer and concurrence from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

Operate all vessels at "Idle Speed/No Wake" at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. Follow marked channels or routes of deep water whenever possible.

All on-site project personnel are responsible for observing water-related activities for the presence of smalltooth sawfish. When smalltooth sawfish are observed, follow the smalltooth sawfish guidelines posted in the URL address in 7-1.4.

Sea Turtles:

The Department has determined that the project occurs within the known habitat of sea turtles (*Caretta caretta*, *Chelonia mydas*, *Dermochelys coriacea*, *Lepidochelys kempi*, *Eretmochelys imbricate*).

The Department will provide instruction at a pre-construction meeting regarding:

1. The presence of species and limits of critical habitat.
2. The appearance, habits and biology of the species.
3. Their protected status.
4. The need to avoid collisions with these species.
5. The need to avoid any actions that would jeopardize the

existence of these species.

6. The civil and criminal penalties for harming, harassing, or killing these species.

Advise all work crews of this information.

Provide sediment and turbidity barriers constructed of material in which a sea turtle cannot become entangled. Secure and monitor the sediment and turbidity barriers to avoid protected species entrapment. Sediment and turbidity barriers may not block sea turtle entry to or exit from designated critical habitat without prior approval of the Engineer and concurrence from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

Operate all vessels at “Idle Speed/No Wake” at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. Follow marked channels or routes of deep water whenever possible.

All on-site project personnel are responsible for observing water-related activities for the presence of sea turtles. When sea turtles are observed, follow the sea turtle species guidelines posted in the URL address in 7-1.4.

Sturgeon:

The Department has determined that the project occurs within the habitat of Atlantic, Gulf or Shortnose sturgeon.

The Department will provide instruction at a preconstruction meeting regarding:

1. The presence of the species.
2. The appearance, habits, biology, migratory patterns and preservation of the species.
3. Their protected status.
4. The need to avoid collisions with these species.
5. The civil and criminal penalties for harming, harassing, or killing these species.

Provide a spotter for the following:

Projects with Gulf sturgeon in estuarine/marine habitats from Tampa Bay Northward to Pensacola from November 1st through April 30th.

Projects with Gulf sturgeon in riverine habitats from March 1st through October 31st.

Projects with Atlantic and Shortnose sturgeon in all habitat types, from Cape Canaveral Northward to Jacksonville, year-round. During required timeframe, spotter will maintain constant surveillance for the species during in water work activities, which include pile driving, vessel operations, both motorized and non-motorized, and extending equipment or material in the water, and assure adherence to the requirements posted in the URL address in Spec 7-1.4.

Do not restrict passage for these fish.

Post signs on site warning of the presence of sturgeon and their federal protection.

Use floating turbidity barriers made of material which sturgeon cannot become entangled or entrapped. Properly secure, regularly monitor and maintain all deployed sediment and turbidity barriers. Immediately free sturgeon trapped in sediment or turbidity barriers.

Do not dredge the river bottom for barge access.

Lower all equipment or material to the mudline in a controlled descent. Do not allow freefall of any equipment or material below the water surface.

Seagrass:

The Department has determined that seagrass beds are located within or nearby the project area. The approximate location of the seagrass beds is provided in the Plans.

Do not place material or equipment, including barge anchorage and turbidity barriers, over or within seagrass beds to prevent shading and scour impacts.

Avoid seagrasses whenever possible and operate at no wake speeds when transiting areas containing seagrass beds. Maintain a minimum one-foot vessel clearance over seagrass beds.

7-1.5 Occupational Safety and Health Requirements: Take all precautions necessary for the protection of life, health, and general occupational welfare of all persons, including employees of both the Contractor and the Department, until the Contractor has completed the work required under the Contract as provided in 5-10 and 5-11.

Comply at all times with applicable Federal, State, and local laws, provisions, and policies governing safety and health, including 29 CFR 1926, including all subsequent revisions and updates.

7-1.6 Discovery of an Unmarked Human Burial: When an unmarked human burial is discovered, immediately cease all activity that may disturb the unmarked human burial and notify the Engineer. Do not resume activity until specifically authorized by the Engineer.

7-1.7 Insecticides, Herbicides and Fertilizers:

7-1.7.1 Insecticides and Herbicides: Use products found on the following website, <http://state.ceris.purdue.edu/>. Only use products registered with the Florida Department of Agriculture and Consumer Services. The use of restricted products is prohibited. Do not use any products in the sulfonylurea family of chemicals. Herbicide application by broadcast spraying is not allowed.

Procure any necessary licenses, pay all charges and fees, and give all notices necessary for lawful performance of the work.

Ensure that all insecticides and herbicides are applied in accordance with Chapter 5E-9, Florida Administrative Code. Submit a copy of current certificates to the Engineer upon request.

Ensure that employees who work with herbicides comply with all applicable Federal, State, and local regulations.

Comply with all regulations and permits issued by any regulatory agency within whose jurisdiction work is being performed. Post all permit placards in a protected, conspicuous location at the work site.

Acquire any permits required for work performed on the rights-of-way within the jurisdiction of National Forests in Florida. Contact the Local National Forest Ranger District, or the United States Department of Agriculture (USDA) office for the proper permits and subsequent approval.

Acquire all permits required for aquatic plant control as outlined in Chapter 62C-20, Florida Administrative Code, Rules of the Florida Department of Environmental Protection. Contact the Regional Field Office of Bureau of Invasive Plant Management of the Florida Department of Environmental Protection for proper permits and subsequent approval. If application of synthetic organo-auxin herbicides is necessary, meet the requirements of Chapter 5E-2, Florida Administrative Code.

7-1.7.2 Fertilizer: Ensure that all employees applying fertilizer possess a current Florida Department of Agriculture and Consumer Services Commercial Applicator license in accordance with Section 482.1562, F.S. Upon request, submit the current certificates to the Engineer.

7-1.8 Compliance with Section 4(f) of the USDOT Act: Section 4(f) of the USDOT Act prohibits the U. S. Secretary of Transportation from approving a project which requires the use

of publicly owned land of a public park, recreation area or a wildlife and waterfowl refuge, or of any historic site of national, state, or local significance unless there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize the harm to the site resulting from the use.

Before undertaking any off-project activity associated with any federally assisted undertaking, ensure that the proposed site does not represent a public park, recreation area, wildlife or waterfowl refuge, or a historic site (according to the results of the Cultural Resources Survey discussed in 120-6.2). If such a site is proposed, notify the Engineer and provide a description of the proposed off-site activity, the Financial Project ID, the location of the site by township, range, section, a county or city map showing the site location, including the access route and the name of the property. It is the Contractor's responsibility to submit justification for use of Section 4(f) property that is sufficient for the Florida Department of Transportation and the Federal Highway Administration to make a Section 4(f) determination. Submit this notification sufficiently in advance of planned commencement of the off-site activity to allow a reasonable time for the Engineer to conduct an investigation without delaying job progress. Do not begin any off-project activity without obtaining written clearance from the Engineer.

7-1.9 Florida Minority Business Loan Mobilization Program: The Loan Mobilization Program is established by Section 288.706 of the Florida Statutes, and has as its goal to assist minority business enterprises by facilitating working capital loans to those eligible businesses that are Contractors or subcontractors on Department contracts.

The limits of such advances under this program shall be as specified in Section 288.706 of the Florida Statutes. In the case of a subcontractor, the amount of the advance will be based on the subcontract unit prices, not the contract unit prices.

All prime Contractor vendors shall be required to incorporate the designated loan mobilization payment procedures in subcontract agreements with minority business enterprise vendors participating in this program and to cooperate in the release of designated loan mobilization payments to achieve the objective of providing working capital for minority business enterprise subcontract vendors.

When the Contract has been awarded or, in the case of a subcontractor, a subcontract has been signed with the prime Contractor, application for participation in this program will be submitted in writing to the Engineer. Such application must be made prior to commencement of the work. If the application is made on behalf of a subcontractor, it shall be considered incomplete if the subcontract with the unit prices of the work clearly delineated is not included in the submittal.

When all applicable conditions have been met, approval for participation will be made by the Office of the Comptroller and the applicant will be notified of the approval action taken.

Once approval has been obtained and the Notice to Proceed has been issued, disbursement of the monies will be made at the request of the applicant. The designated loan mobilization payment may be paid prior to the commencement of work on the Contract. However, if the work on the Contract has not commenced and the payment has not been made, then the Contract Time may not commence until the payment is made. All designated loan mobilization payments will be made payable jointly to the prime Contractor and the participating financial institution. When a subcontractor is the participant in the program, such payments shall be paid to the participant within 10 business days after receipt of the funds from the Department.

Repayment of monies advanced through this program will be made after the value of the work accomplished by the participant reaches 50 percent. Contractors are encouraged to make weekly or bi-weekly payments to subcontractors participating in this program.

7-2 Permits and Licenses.

7-2.1 General: Except for permits procured by the Department, procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

Permits procured by the Department are posted on the Department's web site at the following URL address:

<https://ftp.fdot.gov/public/folder/HkSWIK59G0qRNsAJUh3xXg/permitsandorutilityworkschedules>.

Take responsibility to obtain this information and comply with all requirements posted on this web site up through five calendar days before the opening of bids.

Comply with the provisions contained in these permits. If the Department's web site cannot be accessed, contact the Department's Specifications Office Web Coordinator at (850) 414-4101.

Acquire all permits for work performed outside the right-of-way or easements for the project.

In carrying out the work in the Contract, when under the jurisdiction of any environmental regulatory agency, comply with all regulations issued by such agencies and with all general, special, and particular conditions relating to construction activities of all permits issued to the Department as though such conditions were issued to the Contractor. Post all permit placards in a protected location at the worksite.

In case of a discrepancy between any permit condition and other Contract Documents, the more stringent condition shall prevail.

7-2.2 Work or Structures in Navigable Waters of the U.S., Waters of the U.S., and Waters of the State: In general, one or more governmental agencies will exercise regulatory authority over work or structures, including related construction operations, in all tidal areas (channelward of the mean high water lines on the Atlantic and Gulf Coast); in the ocean and gulf waters to the outer limits of the continental shelf; in all rivers, streams, and lakes to the ordinary high water line; in marshes and shallows that are periodically inundated and normally characterized by aquatic vegetation capable of growth and reproduction; in all artificially created channels and canals used for recreational, navigational, or other purposes that are connected to navigable waters; and in all tributaries of navigable waters up to their headwaters.

Whenever the work under or incidental to the Contract requires structures or dredge/fill/construction activities in "Navigable Waters of the U.S.," "Waters of the U.S.," and "Waters of the State," the Federal, State, county, and local regulatory agencies may require a permit.

Acquire any modifications or revisions to an original permit when such modifications or revisions are necessary to complete the construction operations specified in the Contract Documents and within the right-of-way limits.

Acquire all permits for work performed outside the right-of-way or easements for the project.

In carrying out the work in the Contract, when under the jurisdiction of any environmental regulatory agency, comply with all regulations issued by such agencies and with all general, special, and particular conditions relating to construction activities of all permits

issued to the Department as though such conditions were issued to the Contractor. Post all permit placards in a protected location at the worksite.

In case of a discrepancy between any permit condition and other Contract Documents, the more stringent condition shall prevail.

The “State of Florida Department of Environmental Protection (DEP) Generic Permit for Stormwater Discharge from Large and Small Construction Activities” applies to this Contract. Obtain a copy of the permit through the Department’s website and comply with the requirements of the permit. The URL for obtaining a copy of the permit is http://www.dep.state.fl.us/water/stormwater/npdes/permits_forms.htm.

In accordance with the requirements of the DEP generic permit, accept responsibility for the following:

1. Preparation, execution and submission of DEP Generic Permit Notice of Intent (NOI) and payment of associated fee(s)
2. Preparation and submission of Erosion Control Plan as outlined in Section 104.
3. Any Contractor initiated SWPPP modifications
4. Performing inspections using a qualified inspector
5. Completion of SWPPP construction inspection reports
6. Executing associated certification forms provided by the Engineer
7. Preparation, execution and submission of Notice of Termination (NOT) of the DEP Generic Permit coverage.

Use the SWPPP Construction Inspection Form provided by the Engineer to report all inspection findings and to document all corrective actions taken as a result of the inspection. Sign each inspection report and submit it weekly to the Engineer.

7-2.3 As-Built Drawings and Certified Surveys

7-2.3.1 Surface Water Management Systems for Water Management

Districts: As a condition precedent to final acceptance of the project, submit to the Engineer the as-built drawings and a certified survey verifying the as-built conditions for all installed and constructed surface water management systems. The as-built drawings and certified survey be PDF files in the same scale as the Contract Plans, formatted on 11 inch by 17 inch sheets, and must satisfy all the requirements and special conditions listed in the Water Management District’s Environmental Resource Permit (ERP) and any applicable local permit. The as-built drawings and certified survey must be signed and sealed by an appropriately licensed professional registered in the State of Florida.

If the ERP does not contain specific requirements, submit as-built drawings with the following information as a minimum:

1. Discharge structures: structure identification number, type, locations (latitude and longitude), dimensions and elevations of all, including weirs, bleeders, orifices, gates, pumps, pipes, and oil and grease skimmers.
2. Side bank and underdrain filters, or exfiltration trenches: locations, dimensions and elevations of all, including clean-outs, pipes, connections to control structures and points of discharge to receiving waters.
3. Storage areas for treatment and attenuation: storage area identification number, dimensions, elevations, contours or cross-sections of all, sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems.

4. System grading: dimensions, elevations, contours, final grades or cross-sections to determine contributing drainage areas, flow directions and conveyance of runoff to the system discharge points.

5. Conveyance: dimensions, elevations, contours, final grades or cross-sections of systems utilized to divert off-site runoff around or through the new system.

6. Water levels: existing water elevations and the date determined.

7. Benchmarks: location and description (minimum of one per major water control structure).

7-2.3.2 Bridge Clearances for Projects under the Authority of a U.S. Coast Guard Permit: As a condition precedent to final acceptance of the project, submit to the Engineer a certified survey verifying the as-built clearances described in the U.S. Coast Guard Owner's Certification of Bridge Completion. The certified survey must be signed and sealed by a Professional Engineer or Professional Surveyor and Mapper registered in the State of Florida.

7-2.3.3 Projects under the Authority of a U.S. Army Corps of Engineers Permit: As a condition precedent to final acceptance of the project, submit to the Engineer the as-built drawings and a certified survey verifying the as-built conditions. The as-built drawings and certified survey must be submitted in PDF files formatted in the same scale as the Contract Plans, formatted on 11 inch by 17 inch sheets, and satisfy all of the requirements and special conditions listed in the U.S. Army Corps of Engineers permit. The as-built drawings and certified survey must be signed and sealed by a Professional Engineer or Professional Surveyor and Mapper registered in the State of Florida.

7-3 Patented Devices, Materials and Processes.

Include all royalties and costs arising from patents, trademarks, and copyrights, in any way involved in the work in the Contract price. Whenever using any design, device, material, or process covered by letters patent or copyright, obtain the right for such use by suitable legal agreement with the patentee or owner of the copyright. File a copy of such agreement with the Engineer. However, whether or not such agreement is made or filed as noted, the Contractor and the surety in all cases shall indemnify, defend, and save harmless, the Department from all claims for infringement by reason of the use of any such patented design, device, material, or process on work under the Contract, and shall indemnify the Department for all costs, expenses, and damages that it may be obliged to pay by reason of any such infringement, at any time during the prosecution or after the completion of the work.

7-4 Right-of-Way Furnished by the Department.

Except as otherwise stipulated in the Contract documents, the Department will furnish all rights-of-way necessary for the proper completion of the work at no expense to the Contractor.

Use of Department owned right-of-way for the purpose of equipment or material storage, lay-down facilities, pre-cast material fabrication sites, batch plants for the production of asphalt, concrete or other construction related materials, or other similar activities, shall require advance written approval by the Department prior to making use of said Department owned right of way. Use of Department owned right of way for these purposes is expressly limited to storage of equipment and materials for the Project or production of materials or products for the Project.

7-4.1 Right-of-Way Furnished by the Department: Should Department-furnished areas for obtaining borrow material, contain limerock material; do not remove such material from the pit unless the Engineer gives specific approval.

7-4.2 Right-of-Way Furnished by the Contractor: Comply with the Department's Right of Way Manual for all right of way activities, with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, with 23 CFR 710, and with 49 CFR 24.

7-4.2.1 Notice to Commence Right of Way Acquisition: If right of way services are included in the Contract, the Department must issue a Notice to Commence Right of Way Acquisition prior to any offer being made to acquire right of way. Environmental approval (NEPA) and completion of right of way maps, title information and legal descriptions are required prior to the "Notice to Commence" being issued.

7-4.2.2 Notice to Commence Construction Activities: On Contracts that require additional right of way to be furnished by the Contractor, the Department must issue a Notice to Commence Construction Activities prior to the start of any construction activities on the project or any portion thereof. This requirement is applicable whether the right of way services are included in the Design Build Contract or will be handled separately. The notice to commence may not be issued until such time as the right of way necessary to support those construction activities is acquired and a right of way certification for construction is issued.

7-4.2.3 Hold-Off Zones Around Occupied Properties: At the time that a portion of a project is to be certified for construction, a determination of the need for hold-off zones must be made by the Department. When a notice to commence construction activities has been issued on a portion of the project, there must be a provision in the Contract that requires a hold-off zone between the property on which construction activities are to take place and any occupied properties adjacent thereto for which a notice to commence construction has not yet been issued. The notice to commence construction activities must also contain the details of the hold-off zone, including the location and limits established by the Department. The location and the limits of the hold-off zone must consider that for all occupied properties the Contractor must: maintain reasonable access; maintain utility services; not cause any excessive vibration, dust or noise; or have any open burning within 1,000 feet. The Department's Project Manager will make a decision regarding the extent of the hold-off zone on a case-by-case basis with input from the Right of Way Project Manager and the design build firm.

7-4.2.4 Quality Assurance/Quality Control Plan: Provide a Right of Way Quality Assurance/Quality Control Plan. This plan must provide details of the right of way consultant's plan to control, monitor, report on and assure the quality of the delivery of the right of way services.

7-5 Restoration of Surfaces Opened by Permit.

Upon the presentation of a duly authorized and satisfactory permit that provides that all necessary repair work will be paid for by the party holding such permit, the Engineer may authorize the Contractor to allow parties bearing such permits to make openings in the highway. Upon the Engineer's written order, perform, in an acceptable manner, all necessary repairs due to such openings, and such necessary work that the Engineer orders, subject to the same conditions as the original work performed. The Department will pay the Contractor for such work either under applicable Contract items or in accordance with 4-3 when Contract items are not applicable.

7-6 Sanitary Provisions.

The Contractor shall provide and maintain, in a neat and sanitary condition, such accommodations for the use of his employees as are necessary to comply with the requirements and regulations of the State and local boards of health. Commit no public nuisance.

7-7 Control of the Contractor's Equipment.

7-7.1 Traffic Interference: Do not allow equipment, while it is on or traversing a road or street, to unreasonably interfere with traffic. The Contractor's equipment on Department right-of-way shall clearly and legibly identify the Design-Build Firm.

7-7.2 Overloaded Equipment: Do not operate on any road, street or bridge, including a Department owned temporary bridge any hauling unit or equipment loaded in excess of:

1. the maximum weights specified in the Florida Highway Patrol, Commercial Motor Vehicle Manual (Trucking Manual), or
2. lower weight limits legally established and posted for any section of road or bridge by the Department or local authorities.

The governmental unit having jurisdiction over a particular road or bridge may provide exceptions by special permit under the provisions of 7-7.3.

This restriction applies to all roads and bridges inside and outside the Contract limits as long as these roads and bridges are open for public use. The Contractor may overload roads and bridges, which are to be demolished after they are permanently closed to the public. The Contractor is responsible for all loss or damages resulting from equipment operated on a structure permanently closed to the public.

7-7.3 Crossings: Where it is necessary to cross an existing road or street, including specifically the existing traveled lanes of a divided highway within the limits of the project; obtain permits from the Department, for crossing overloaded or oversized equipment. Cross-existing roads or streets only at Engineer-designated points. The Engineer may require the Contractor to protect the pavement or Roadway at the crossing by using lumber, planks, or fill. Movement of equipment around the project site must be in accordance with requirements of the Standard Plans and not create an undue hazard to the traveling public or workers. Provide flagging and watchman service, or approved signal devices, for the protection of traffic at all such crossings, in accordance with an approved written plan for that activity.

7-7.4 Protection from Damage by Tractor-Type Equipment: Take positive measures to ensure that tractor-type equipment does not damage the road. If any such damage should occur, repair it without delay, at no expense to the Department and subject to the Engineer's approval.

7-7.5 Contractor's Equipment on Bridge Structures: The Contractor's Engineer of Record shall analyze the effect of imposed loads on bridge structures, including Department owned temporary bridges, within the limits of a construction Contract, resulting from the following operations:

1. Overloaded Equipment as defined in 7-7.2:
 - a. Operating on or crossing over completed bridge structures.
 - b. Operating on or crossing over partially completed bridge structures.
2. Equipment within legal load limits:
 - a. Operating on or crossing over partially completed bridge structures.
3. Construction cranes:
 - a. Operating on completed bridge structures.
 - b. Operating on partially completed bridge structures.

4. Asphalt Milling Equipment

a. In excess of 90,000lbs crossing bridge structures

b. Less than 90,000lbs crossing bridge structures listed on the overweight routing map CRN-2 located on the Office of Maintenance Over-Weight Dimension Permits website at <https://www.fdot.gov/maintenance/owod-permit-documents#BlanketAttachments>.

Any pipe culvert(s) or box culvert(s) qualifying as a bridge under 1-3 is excluded from the requirements above.

A completed bridge structure is a bridge structure in which all elemental components comprising the load carrying assembly have been completed, assembled, and connected in their final position. The components to be considered shall also include any related members transferring load to any bridge structure.

The Contractor's Engineer of Record shall determine the effect that equipment loads have on the bridge structure and develop the procedures for using the loaded equipment without exceeding the structure's design load capacity.

Submit to the Department for approval the design calculations, layout drawings, and erection drawings showing how the equipment is to be used so that the bridge structure will not be overstressed. The Contractor's Engineer of Record shall sign and seal the drawings and the cover sheet of the calculations for the Department's Record Set.

7-7.6 Posting of the Legal Gross Vehicular Weight: Display the maximum legal gross weight, as specified in the Florida Uniform Traffic Code, in a permanent manner on each side of any dump truck or dump type tractor-trailer unit hauling embankment material, construction aggregates, road base material, or hot bituminous mixture to the project over any public road or street. Display the weight in a location clearly visible to the scale operator, in numbers that contrast in color with the background and that are readily visible and readable from a distance of 50 feet.

7-8 Structures over Navigable Waters.

7-8.1 Compliance with Federal and Other Regulations: When working on structures in, adjacent to, or over, navigable waters, observe all regulations and instructions of Federal and other authorities having control over such waters. Do not obstruct navigation channels without permission from the proper authority, and provide and maintain navigation lights and signals in accordance with the Federal requirements for the protection of the structure, of false work, and of navigation.

In the event of accidental blocking of the navigation channel, immediately notify the U.S. Coast Guard of the blockage and upon removal of the blockage. When working on moveable bridges, request for temporarily changing the operating requirements for the moveable bridge must be submitted in writing to the appropriate Coast Guard District Bridge Branch, 90 days before the start of any action.

For all other bridges m, notify the appropriate Coast Guard District Bridge Branch, at least 60 days prior to the start of any operations including construction and 30 days prior to any channel operations, closures, or opening restrictions.

When work platforms are indicated in the permit for construction, submit work platform construction Plans to the appropriate Coast Guard District for approval. Obtain approval prior to beginning construction on the platform.

7-8.2 Maintenance of Channel: Where the work includes the excavation of a channel or other underwater areas to a required section, maintain the section from shoaling or other encroachment until final acceptance of the project.

Submit work platform construction Plans to the appropriate Coast Guard District for approval. Obtain approval prior to beginning construction on the platform.

In the event of accidental blocking of the navigation channel, immediately notify the U.S. Coast Guard of the blockage and upon removal of the blockage.

7-9 Use of Explosives.

When using explosives for the prosecution of the work, exercise the utmost care not to endanger life or property, including new work. The Contractor is responsible for all damage resulting from the use of explosives.

Store all explosives in a secure manner in compliance with all laws and ordinances, and clearly mark all such storage places with the words: "DANGEROUS - EXPLOSIVES". Place such storage in the care of a competent watchman. Where no local laws or ordinances apply, provide storage satisfactory to the Engineer and, in general, not closer than 1,000 feet from the road or from any building, camping area, or place of human occupancy.

Notify each public utility company having structures in proximity to the site of the work of the intention to use explosives. Give such notice sufficiently in advance to enable the companies to take precautionary steps to protect their property from injury.

7-10 Forest Protection.

7-10.1 Compliance with State and Federal Regulations: In carrying out work within or adjacent to State or National forests or parks, comply with all of the regulations of the State or Federal authority having jurisdiction, governing the protection of and the carrying out of work in forests or parks, and observe all sanitary laws and regulations with respect to the performance of work in these areas. Keep the areas in an orderly condition, dispose of all refuse, and obtain permits for the construction, installation, and maintenance of any construction camps, living quarters, stores, warehouses, sanitary facilities, and other structures; all in accordance with the requirements of the forest or park official.

7-10.2 Prevention and Suppression of Forest Fires: Take all reasonable precautions to prevent and suppress forest fires. Require employees and subcontractors, both independently and at the request of forest officials, to do all reasonably within their power to prevent and suppress forest fires. Assist in preventing and suppressing forest fires, and make every possible effort to notify a forest official at the earliest possible moment of the location and extent of all fires. Extinguish the fire if practicable.

7-11 Preservation of Property.

7-11.1 General: Preserve from damage all existing property within the project limits of or in any way affected by the Work, the removal or destruction of which is not specified in the Plans. This applies to, but is not limited to, public and private property, public and private utilities (except as modified by the provisions of 7-11.5), trees, shrubs, crops, sod, signs, monuments, fences, guardrail, pipe and underground structures, Intelligent Transportation Systems (ITS) facilities, traffic control signals and devices, highway lighting, and public highways (except natural wear and tear of highway resulting from legitimate use thereof by the Contractor).

Department owned underground facility locations shown in the Plans are approximate. Unless otherwise shown on the Plans Department owned underground facilities will not be located by the Department nor through notification to "Sunshine 811".

Whenever the Contractor's activities damage such existing property, immediately restore it to a condition equal to or better than that existing at the time such damage occurred, at no expense to the Department. Temporary repairs may be used to immediately restore ITS facilities and traffic control signals and devices. Permanent repairs to ITS facilities and traffic control signals and devices shall be made within 90 days of any temporary repairs and prior to final acceptance of the project. Submit permanent ITS facility repair plans to the Engineer prior to beginning repair work.

Protect existing bridges during the entire construction period from damage caused by the Work. Immediately repair, at no expense to the Department, all damage to existing bridges caused by the Work, prior to continuing the Work. The Department will not require the Contractor to provide routine repairs or maintenance for such structures.

Direct special attention to the protection of all geodetic monuments, horizontal or vertical, and Public Land Survey Corners located within the project. If any geodetic monument or Public Land Survey Corner, located within the project, is at risk of being damaged or destroyed, immediately notify the Engineer. Locate and replace any damaged or destroyed geodetic monuments or Public Land Survey Corners under the direction of a Professional Surveyor and Mapper registered in the State of Florida.

Whenever the actions of a third party damage such existing property and is not otherwise due to any fault or activities of the Contractor, either restore it to a condition equal to or better than that existing at the time such damage occurred or provide access and coordinate with the Department's maintenance Contractor in accordance with 8-4.4 as directed by the Engineer. The Department will compensate the Contractor for the costs associated with the repairs for restoring the existing property in accordance with 4-4. Theft and vandalism are considered damage caused by a third party.

7-11.2 Failure to Restore Damaged Existing Property: In case of failure on the part of the Contractor to restore such property, bridge, road or street, or to make good such damage or injury, the Engineer may, upon 48 hours' notice, proceed to repair, rebuild, or otherwise restore such property, road, or street as may be deemed necessary, and the Department will deduct the cost thereof from any monies due or which may become due the Contractor under the Contract. Nothing in this clause prevents the Contractor from receiving proper compensation for the removal, damage, or replacement of any public or private property, not shown on the Plans, that is made necessary by alteration of grade or alignment. The Engineer will authorize such work, provided that the Contractor, or his employees or agents, have not, through their own fault, damaged such property.

7-11.3 Contractor's Use of Streets and Roads:

7-11.3.1 On Systems Other than the State Highway System: When hauling materials or equipment to the project over roads and bridges on the State park road system, county road system, or city street system, and such use causes damage, immediately, at no expense to the Department, repair such road or bridge to as good a condition as before the hauling began.

The Department may modify the above requirement in accordance with any agreement the Contractor might make with the governmental unit having jurisdiction over a particular road or bridge, provided that the Contractor submits written evidence of such agreement to the Engineer.

7-11.3.2 On the State Highway System: The Department is responsible for the repair of any damage that hauling materials to the site causes to roads outside the limits of the

project, that are either on the State highway system (roads under the jurisdiction of the Department) or specifically designated in the Contract Documents as haul roads from Department-furnished material pits, except in the event damage is due to failure to comply with 7-7.2. The Contractor is responsible for all damages to any road or bridge caused by the Contractor's failure to comply with 7-7.2.

7-11.3.3 Within the Limits of a Construction Project: The Department will not allow the operation of equipment or hauling units of such weight as to cause damage to previously constructed elements of the project, including but not necessarily limited to bridges, drainage structures, base course, and pavement. Do not operate hauling units or equipment loaded in excess of the maximum weights specified in 7-7.2 on existing pavements that are to remain in place (including pavement being resurfaced), cement-treated subgrades and bases, concrete pavement, any course of asphalt pavement, and bridges. The Engineer may allow exceptions to these weight restrictions for movement of necessary equipment to and from its worksite, for hauling of offsite fabricated components to be incorporated into the project, and for crossings as specified in 7-7.3.

7-11.4 Operations within Railroad Right-of-Way: Submit written advanced notification of the flagging services and railroad right-of-way access required, construction timeframe, and duration to the Engineer and District Rail Office at least 45 calendar days prior to beginning any operation within the limits of the railroad right-of-way or the adjoining 15 feet. Operations include the movement of employees, equipment, and trucks in areas other than public crossings or any traffic signal work within 500 feet of a signalized at-grade railroad crossing. The Railroad Company will notify the District Rail Office when flaggers are available for use in project scheduling.

No operations shall be conducted that affect railroad operations and property without written approval from the railroad.

7-11.4.1 Notification to the Railroad Company: Submit written notification to the Engineer, District Rail Office and the authorized Railroad Representative at least 72 hours before beginning any operation within the limits of the railroad right-of-way; any operation requiring movement of employees, trucks, or other equipment across the tracks of the railroad company at locations other than an established public crossing; and any other work that may affect railroad operations or property.

7-11.4.1.1 Florida East Coast Railway (FEC): Contact the FEC Signal Office at 904-279-3182 and FEC Railway at 1-800-342-1131, ext. 2377 in addition to the requirements in Section 7-11.4.1.

7-11.4.1.2 Florida Gulf and Atlantic Railroad (FGA): Contact FGA at 615-791-0630 in addition to the requirements in Section 7-11.4.1.

7-11.4.2 Contractor's Responsibilities: Unless instructed otherwise in writing by the Railroad Company, do not perform work within or adjacent to the railroad right-of-way without a flagger present (including temporary lane closures, lane shifts or detours). Comply with requirements deemed necessary by the railroad company's authorized representative to safeguard the railroad's property and operations.

The Contractor is responsible for all damages, delays, or injuries and all suits, actions, or claims brought on account of damages or injuries resulting from the Contractor's operations within or adjacent to railroad company right-of-way. The work includes all items necessary to relieve the flagger from providing protective services.

Costs incurred by the Railroad Company for Contractor-caused delays that adversely impact railway operations will be forwarded to the Contractor for payment. If the Contractor fails to pay said cost, the Department will deduct the amount from payments owed to the Contractor.

7-11.4.2.1 CSXT: Comply with the Construction Submission Criteria of the CSXT Public Project Information document and Construction Requirements sections of the CSXT Pipeline and Wireline Design and Construction Specifications prior to beginning work. These documents are available at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/CSXT.shtm>.

Perform no work within the limits of the railroad right-of-way on CSXT holidays (except with permission of CSXT for emergencies such as natural disasters). CSXT holidays are New Year's Day, President's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the following Friday, Christmas Eve, Christmas Day, and New Year's Eve. Holidays falling on Saturday are observed on Friday and those falling on Sunday are observed on Monday.

7-11.4.2.2 Norfolk Southern (NS): Comply with the NS Special Provisions for Protection of Railway Interests (Appendix E) and the Construction Requirements (Appendix 4.3) of the NS Public Projects Manual document prior to beginning and during all work. These documents are available at the following URL:

http://www.nscorp.com/content/dam/nscorp/ship/shipping-tools/Public_Projects_Manual.pdf.

7-11.4.2.3 FEC: Complete the On-Track Contractor Roadway Worker Training Course for FEC Railway. Contact FEC Railway at 1-800-342-1131 for training information.

7-11.4.2.4 FGA: Complete the On-Track Contractor Roadway Worker Training Course for FGA Railroad. Contact FGA Railroad at 1-615-791-0630 for training information.

7-11.4.2.5 South Florida Rail Corridor (SFRC): Complete the On-Track Contractor Roadway Worker Training Course for South Florida Regional Transportation Authority (SFRTA) Railway. Contact SFRTA at 954-788-7920 for training information.

7-11.4.3 Watchman or Flagging Services: The railroad company will furnish protective services (i.e., watchman or flagging services) to ensure the safety of railroad operations during certain periods of the project. The Department will reimburse the railroad company for the cost thereof. Schedule work that affects railroad operations so as to minimize the need for protective services by the railroad company.

Submit construction schedules and schedule changes to the Engineer and District Rail Office which include an estimated start date, weekly construction schedule, daily hours of operation, and the calendar day duration for which flagging services will be necessary to perform work activities within railroad right-of-way in accordance with 8-3.2.

7-11.4.3.1 Central Florida Rail Corridor (CFRC) and SFRC: The Department will furnish protective services (i.e., watchman or flagging services) to ensure the safety of railroad operations.

7-11.5 Utilities:

7-11.5.1 Arrangements for Protection or Adjustment: Do not commence work at points where the construction operations are adjacent to utility facilities until all necessary arrangements have been made with the utility facilities owner for the protection, removal,

temporary removal, relocation, de-energizing, deactivation or adjustment to protect against damage that might result in expense, loss, disruption of service, or other undue inconvenience to the public or to the owners.

Do not commence work until the agreement in 7-11.5.5 is executed and copy provided to the Department and if the protection, removal, temporary removal, relocation, de-energizing, deactivation or adjustment is going to be accomplished it must be in accordance with a Department approved utility Permit. Coordinate such work as to cause the least impediment to the overall construction operations and utility service. The Department is not responsible for utility removal, temporary removal, relocation, de-energizing, deactivation, or adjustment work where such work is determined not necessary by the Engineer or done solely for the benefit or convenience of the utility owner or its contractor, or the Contractor.

7-11.5.2 Cooperation with Utility Owners: In the event of interruption of water or other utility services as a result of accidental breakage, exposure, or lack of support, promptly notify the proper authority and cooperate with the authority in the prompt restoration of service. If water service is interrupted and the Contractor is performing the repair work, the Contractor shall work continuously until the service is restored. Do not begin work around fire hydrants until the local fire authority has approved provisions for continued service.

7-11.5.3 Utility Adjustments: Certain utility adjustments and reconstruction work may be underway during the progress of the Contract. Cooperate with the various utility construction crews who are maintaining utility service. Exercise due caution when working adjacent to relocated utilities. Repair at no expense to the Department all damage to the relocated utilities resulting from Contractor operations. The requirements of 7-11.1 and 7-11.5.2 outline the Contractor's responsibility for protecting utility facilities.

7-11.5.4 Intentionally left blank.

7-11.5.5 General Requirements: The Design-Build Firm shall be responsible for coordinating with all existing utility companies that have facilities within the job limits or which will be affected in any way by the Project and for coordinating all utility work with the Project schedule. Coordinate with the Utility Agency/Owner (UA/O) in order that these operations may progress in a reasonable manner, that duplication or rearrangement work may be reduced to a minimum, and that services rendered by the utility owners will not be unnecessarily interrupted. The Design-Build Firm shall make every attempt to design around existing utilities, minimizing impacts. Plans shall be provided to the Department showing existing and proposed utility locations and their relationship to the proposed construction. All utility work shall be done in accordance with the Department approved utility Permit.

Pursuant to Section 337.11(7)(a), Florida Statutes, construction activities may not begin on any portion of the Project for which utility agreements have not yet been executed. Design-Build Agreements referenced in 7-11.5.6 below are sufficient to meet this requirement. For utilities where no agreement has been executed by the Department, a separate agreement between the utility and the Design-Build Firm must be executed in order to comply with this statutory requirement.

The agreement executed by the UAO and the Design-Build Firm shall include a description of the work activities and the utilities affected and shall include the following clause; "Coordination has been sufficient to proceed with construction in the area of the affected utility." The agreement shall also include the following clause attested to by the Design-Build Firm's EOR; "The proposed work and the utility protection, adjustment or relocation are compatible with the Contract Documents."

7-11.5.6 Utility Agreements for Design-Build: The Department has entered into agreements with certain utility companies that may have utility facilities located within the limits of the Project. Copies of those agreements are provided to the Design-Build Firm as part of the Contract Documents. Those agreements govern the coordination and performance of the utility work for the Project as to the utility entities that have entered into them. The Design-Build Firm shall fully comply with all obligations of the Firm under those agreements.

The Design-Build Firm acknowledges and agrees that the Utility Agency Owners under those agreements are hereby made intended third party beneficiaries of this provision and the provisions of 7-11.5.10 with full rights of enforcement under that status as if they were a party to this Contract as to these provisions. This provision is made a part of the Contract notwithstanding Section 337.11(1), Florida Statutes, it being agreed by the Design-Build Firm and the Department that said statutory provision prohibits a non-party hereto from claiming incidental third party beneficiary rights, but does not prohibit the express creation of an intended third party beneficiary.

7-11.5.7 Utilities Without Executed Utility Agreements: The Department makes no representation that agreements have been executed with all utilities that have facilities located within the limits of the Project. For any utility that has not entered into an executed agreement with the Department, the Design-Build Firm shall be responsible for performing or arranging for the performance of all utility work. The Design-Build Firm's responsibilities shall include, but shall not be limited to the following:

1. Locate, by physical exposure and establishment of both vertical and horizontal limits, all existing facilities within right-of-way limits affected by the proposed design or impacted by the Project not within right-of-way.

2. Notify and keep informed all Utility Agency/Owner of all relevant information related to their facilities.

3. Determine what work is necessary for utilities that are impacted, including, but not limited to:

- a. Design around if possible,
- b. Protect,
- c. Adjust,
- d. Relocate,
- e. Remove.

4. Make arrangements for any work necessary, including entering into the required utility agreement.

5. Obtain necessary Department permits from all other applicable agencies, and otherwise comply with other applicable laws, including, but not limited to, one call obligations under Chapter 556, Florida Statutes.

6. Coordinate the issuance of utility permits within the project limits for new utility work not necessarily related to the Project in order to assure consistency with the Project.

7-11.5.8 Cost of Utility Work and Conflict Resolution: Costs of utility reimbursements shall be paid in accordance with the resolution methodology established in Section VI, C, of the Request for Proposal, based on the final design of the Design-Build Firm.

The Design-Build Firm shall not impact any utility except those identified in the RFP where coordination has been completed and either the UAO or the DB Firm is shown as responsible for the relocation as contemplated by the Department's conceptual Plans.

However, if the Design-Build Firm desires to impact a utility not contemplated, the Design-Build Firm may do so if the utility agrees and there is no additional cost to the Department or time added to the Project as a result thereof. If the project cannot be constructed without impacting additional utilities and the cost of the utility work is not legally the responsibility of the utility, or if the Department's determination as set forth in the RFP that utility work is to be done at the expense of the utility is in error, the Department will bear the expense of any such utility work.

If a utility is not being impacted by the Project, but the utility owner desires to have utility work performed in connection with the Project, the cost of the utility work will be the responsibility of the utility company. It will be the Design-Build Firm's responsibility to coordinate and resolve all utility impacts with each of the utility companies. In the event of a dispute with or lack of cooperation from a utility that does not arise out of or relate to an agreement between the Design Build Firm and the utility, the matter shall be referred to the Department for resolution.

7-11.5.9 Utility Schedules: The utility work to be accomplished concurrently with the highway construction Contract will involve facilities owned by other UAOs. Utility Schedules (Utility Relocation and/or Work Schedules) for these agencies may have already been developed. Any existing Utility Schedules are posted on the Department's web site at the following URL address:

<https://ftp.fdot.gov/public/folder/HkSWIK59G0qRNsAJUh3xXg/permitsandorutilityworkschedules>.

Take responsibility to obtain this information and comply with all requirements posted on this web site up through five calendar days before the opening of bids.

Where utility work must be coordinated with highway construction operations, the Department makes no guarantee that any portion of the anticipated utility work will begin on the day highway construction commences nor does the Department guarantee that such work will be performed on consecutive days.

The anticipated scheduling of new work, adjustments and/or relocation work is included on the Utility Schedules. More precise scheduling to accomplish utility work in the most expeditious manner that is feasible will be established at the preconstruction conference as provided in 8-3.5. The Utility Schedules must be used in conjunction with the utility sheets included in the roadway plans. If the Department's web site cannot be accessed, contact the Department's Specifications Office Web Coordinator at (850) 414-4101.

7-11.5.10 Claims Due to Utility Work not Contemplated in the RFP or the Conceptual Plans: No payment, compensation or adjustment of any kind (other than a non-compensable extension of time) shall be made to the Design-Build Firm for damages because of hindrances or delays arising out of or connected with the performance of utility work for the project regardless of the cause of such hindrance or delays and whether such hindrances or delays be avoidable or unavoidable, and the Design-Build Firm agrees that it will make no claim for compensation, damages or mitigation of liquidated damages for any such hindrances or delays and will accept any non-compensable extension of time otherwise granted pursuant to other provisions of the Contract Documents as full satisfaction for such hindrances or delays.; provided that nothing herein shall obligate the Department to grant an extension of time not otherwise due and the failure of the Design-Build Firm to be granted an extension of time shall not create any entitlement to compensation, damages or mitigation of liquidated damages.

7-12 Responsibility for Damages, Claims, etc.

7-12.1 Contractor to Provide Indemnification: The Contractor shall indemnify and hold harmless the Department, its officers and employees from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the construction Contract.

For work involving the relocation of utilities within the Department's Right of Way in which a UAO is performing the relocation, the Contractor may not require the UAO to indemnify and hold harmless the Contractor; except that the Contractor can require the UAO to indemnify and hold harmless the Contractor, its officers and employees from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or wrongful misconduct of the UAO and persons employed or utilized by the UAO in the performance of the utility relocation.

It is specifically agreed between the parties executing this Contract that it is not intended by any of the provisions of any part of the Contract to create in the public or any member thereof, a third party beneficiary hereunder, or to authorize anyone not a party to this Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract.

7-12.2 Guaranty of Payment for Claims: The Contractor guaranties the payment of all just claims for materials, supplies, tools, or labor and other just claims against him or any subcontractor, in connection with the Contract. The Department's final acceptance and payment does not release the Contractor's bond until all such claims are paid or released.

7-13 Insurance.

7-13.1 Workers' Compensation Insurance: Provide Workers' Compensation Insurance in accordance with Florida's Workers' Compensation law for all employees. If subletting any of the work, ensure that the subcontractor(s) have Workers' Compensation Insurance for their employees in accordance with Florida's Workers' Compensation law. If using "leased employees" or employees obtained through professional employer organizations ("PEO's"), ensure that such employees are covered by Workers' Compensation insurance through the PEO's or other leasing entities. Ensure that any equipment rental agreements that include operators or other personnel who are employees of independent Contractors, sole proprietorships or partners are covered by insurance required under Florida's Workers' Compensation law.

7-13.2 Commercial General Liability Insurance: Carry Commercial General Liability insurance providing continuous coverage for all work or operations performed under the Contract. Such insurance shall be no more restrictive than that provided by the latest occurrence form edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01) as filed for use in the State of Florida. Cause the Department to be made an Additional Insured as to such insurance. Such coverage shall be on an "occurrence" basis and shall include Products/Completed Operations coverage. The coverage afforded to the Department as an Additional Insured shall be primary as to any other available insurance and shall not be more restrictive than the coverage afforded to the Named Insured. The limits of coverage shall not be less than \$1,000,000 for each occurrence and not less than a \$5,000,000 annual general aggregate, inclusive of amounts provided by an umbrella or excess policy. The limits of coverage described herein shall apply fully to the work or operations performed under the Contract, and may not be shared with or diminished by claims unrelated to the contract. The policy/ies and coverage described herein may be subject to a deductible. Pay all deductibles as

required by the policy. No policy/ies or coverage described herein may contain or be subject to a Retention or a Self-Insured Retention. Prior to the execution of the Contract, and at all renewal periods which occur prior to final acceptance of the work, the Department shall be provided with an ACORD Certificate of Liability Insurance reflecting the coverage described herein. The Department shall be notified in writing within ten days of any cancellation, notice of cancellation, lapse, renewal, or proposed change to any policy or coverage described herein. The Department's approval or failure to disapprove any policy/ies, coverage, or ACORD Certificates shall not relieve or excuse any obligation to procure and maintain the insurance required herein, nor serve as a waiver of any rights or defenses the Department may have.

7-13.3 Insurance Required for Construction at Railroads: When the Contract includes the construction of a railroad grade crossing, railroad overpass or underpass structure, or any other work or operations within the limits of the railroad right-of-way, including any encroachments thereon from work or operations in the vicinity of the railroad right-of-way, you shall, in addition to the insurance coverage required pursuant to 7-13.2 above, procure and maintain Railroad Protective Liability Coverage (ISO Form CG 00 35) where the railroad is the Named Insured and where the limits are not less than \$2,000,000 combined single limit for bodily injury and/or property damage per occurrence, and with an annual aggregate limit of not less than \$6,000,000. The railroad shall also be added along with the Department as an Additional Insured on the policy/ies procured pursuant to subsection 7-13.2 above. Prior to the execution of the Contract, and at all renewal periods which occur prior to final acceptance of the work, both the Department and the railroad shall be provided with an ACORD Certificate of Liability Insurance reflecting the coverage described herein. The insurance described herein shall be maintained through final acceptance of the work. Both the Department and the railroad shall be notified in writing within ten days of any cancellation, notice of cancellation, renewal, or proposed change to any policy or coverage described herein. The Department's approval or failure to disapprove any policy/ies, coverage, or ACORD Certificates shall not relieve or excuse any obligation to procure and maintain the insurance required herein, nor serve as a waiver of any rights the Department may have.

7-13.4 Insurance for Protection of Utility Owners: When the Contract involves work on or in the vicinity of utility-owned property or facilities, the utility shall be added along with the Department as an Additional Insured on the policy/ies procured pursuant to subsection 7-13.2 above.

7-13.5 Professional Liability: The Design-Build Firm shall have and maintain during the period of this Contract, a professional liability insurance policy or policies with a company or companies authorized to do business in the State of Florida, affording professional liability coverage for the professional services to be rendered in accordance with this Agreement in the following amounts:

Total D-B Contract Price	Minimum Coverage Limits
Up to \$30 Million	\$1 Million coverage
\$30 to \$75 Million	\$2 Million coverage
More than \$75 Million	\$5 Million coverage

This requirement may be satisfied by the Design-Build Firm's professional team member qualified under Rule 14-75, FAC.

7-14 Contractor's Responsibility for Work.

The Contractor will take charge and custody of the Work, and take every necessary precaution against damage to the Work, by the action of the elements or from any other cause whatsoever, until the Department's final acceptance of the Work. The Contractor will rebuild, repair, restore, and make good, all damage to any portion of the Work occasioned by any of the above causes before final acceptance of the Contract.

The Department will have no obligation to pay any reimbursement for damage caused by the execution or nonexecution of the Work by the Contractor or its sub-contractors, or damage the Contractor was negligent in preventing.

For damage to installed material caused by third parties, the Contractor may pursue recovery from the third party or seek reimbursement from the Department, but not both. The Department will not reimburse the Contractor for repair costs due to damage to installed material caused by third parties unless the Contractor has contacted law enforcement within 14 calendar days of the damage, filed a report, and provided the report to the Department within 14 calendar days of receiving the report from law enforcement. Upon submission of the report to the Department, the Department solely retains the right to pursue recovery from the known third party. If damage to installed material is caused by a known third party, the Department will reimburse the Contractor for costs associated with the repair after reducing the amount of the repair cost by a \$2000.00 deductible for each occurrence, borne solely by the Contractor. If the Department is successful in recovery, the Contractor may be reimbursed proportionally, up to the amount of the deductible.

If damage to installed material other than temporary crash cushion is caused by an unknown third party, the Department will reimburse the contractor for 50% of the cost of the repair after reducing the amount of the repair cost by a \$2000.00 deductible for each occurrence, borne solely by the Contractor. Repair costs for damage to temporary crash cushions caused by unknown third parties will be reimbursed as the manufacturer's/distributor's invoice price for the new materials/parts plus 20% markup. The 20% markup is compensation for all necessary work, including but not limited to labor, equipment, supplies and profit, as authorized by the Engineer. Payment for any additional MOT required for the repair of temporary crash cushions will be paid for under the appropriate MOT pay item.

Repair cost will be determined in accordance with 4-4. Theft and vandalism are considered damage caused by an unknown third party.

The Department may, at its discretion, reimburse the Contractor for the repair of damage to the Work not caused by a third party and due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to Acts of God, of the public enemy, or of governmental authorities.

7-15 Opening Sections of the Project to Traffic.

Whenever any section of the project is in acceptable condition for use, the Engineer may direct the Contractor to open it to vehicular or pedestrian traffic. The Department's direction to open a section of the project does not constitute an acceptance of the project, or any part thereof, or waive any Contract provisions. Perform all necessary repairs or renewals, on any section of the project thus opened to traffic under direction from the Engineer, due to defective material or work or to any cause other than ordinary wear and tear, pending completion and the Engineer's acceptance of the project, at no expense to the Department.

7-16 Wage Rates for Federal-Aid Projects.

For Contracts that include Federal Aid Participation, payment of predetermined minimum wages applies.

The U.S. Department of Labor (USDOL) Wage Rates applicable to this Contract are listed in table below, as modified up through ten days prior to the opening of bids.

Wage Rate Decision Number	Associated Work
N/A	

Obtain the applicable General Decision(s) (Wage Tables) through the Department’s Office of Construction website and ensure that employees receive the minimum compensation applicable. Review the General Decisions for all classifications necessary to complete the project. Request additional classifications through the Engineer’s office when needed.

For guidance on the requirements for the payment of wages and benefits and the submittal of certified payrolls, and for general guidance and examples of multiple wage rates when assigned to a Contract, refer to the Department’s Office of Construction website. Questions regarding wage rates and the applicability of wage tables should be submitted in accordance with 2-4.

7-17 Supplemental Agreements.

Section 337.11 of the Florida Statutes as amended, which prescribe certain limitations on the use of supplemental agreements, are a part of the Contract.

7-18 Scales for Weighing Materials.

7-18.1 Applicable Regulations: When determining the weight of material for payment, use scales meeting the requirements of Chapter 531 of Florida Statutes, pertaining to specifications, tolerances, and regulations, as administered by the Bureau of Weights and Measures of the Florida Department of Agriculture.

7-18.2 Base for Scales: Place such scales on a substantial horizontal base to provide adequate support and rigidity and to maintain the level of the scales.

7-18.3 Protection and Maintenance: Maintain all scale parts in proper condition as to level and vertical alignment, and fully protect them against contamination by dust, dirt, and other matter that might affect their operation.

7-19 Source of Forest Products.

As required by Section 255.2575 of the Florida Statutes, where price, fitness and quality are equal, and when available, use only timber, timber piling, or other forest products that are produced and manufactured in the State of Florida. This provision does not apply to Federal-aid projects.

7-20 Regulations of Air Pollution from Asphalt Plants.

7-20.1 General: Perform all work in accordance with all Federal, State, and local laws and regulations regarding air pollution and burning. In particular, pay attention to Chapters 62-210 and 62-256, Rules of the Department of Environmental Protection, Florida Administrative

Code, and to any part of the State Implementation Plan applicable to the project. See also 110-9.2 regarding burning of debris.

7-20.2 Dust Control: Control dust during the storage and handling of dusty materials by wetting, covering, or other means as approved by the Engineer.

7-20.3 Asphalt Material: Use only emulsified asphalt, unless otherwise stated in the Plans and allowed by Chapter 62-210, Rules of the Department of Environmental Protection, Florida Administrative Code. Store and handle asphalt materials and components so as to minimize unnecessary release of hydrocarbon vapors.

7-20.4 Asphalt Plants: Operate and maintain asphalt plants in accordance with Chapter 62-210, Rules of the Department of Environmental Protection, Florida Administrative Code. Provide the plant site with a valid permit as required under Chapter 62-210 prior to start of work.

7-21 Dredging and Filling.

Section 370.033 of the Florida Statutes, requires that all persons, who engage in certain dredge or fill activities in the State of Florida, obtain a certificate of registration from the Florida Department of Environmental Protection, Tallahassee, Florida 32301, and that they keep accurate logs and records of all such activities for the protection and conservation of the natural resources. Obtain details as to the application of this law from the Department of Environmental Protection.

7-22 Available Funds.

For Contracts in excess of \$25,000 or a term for more than one year, comply with the following provisions of Chapter 339 of the Florida Statutes:

The Department will not, during any fiscal year, expend money, incur any liability, or enter into any Contract that, by its terms, involves the expenditures of money in excess of the amounts budgeted as available for expenditure during such fiscal year. If the Department enters into such a Contract, verbal or written, in violation of this subsection, such Contract is null and void, and the Department will not make any payments thereon. The Department will require a statement from the Department's comptroller that funds are available prior to entering into any such Contract or other binding commitment of funds. Nothing herein contained prevents the Department from executing Contracts for a period exceeding one-year, but the Department will make such Contracts executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years. The Department will incorporate this paragraph verbatim in all Contracts in excess of \$25,000 or having a term for more than one year.

7-23 Contractor's Motor Vehicle Registration.

The Contractor shall provide the Department with proof that all motor vehicles operated or caused to be operated by such Contractor is registered in compliance with Chapter 320 of the Florida Statutes. Submit such proof of registration on Department Form 700-010-52.

The Department will not make payment to the Contractor until the required proof of registration is on file with the Department.

If the Contractor fails to register any motor vehicle that he operates in Florida, pursuant to Chapter 320 of the Florida Statutes, the Department may disqualify the Contractor from bidding, or the Department may suspend and revoke the Contractor's certificates of qualification.

7-24 Disadvantaged Business Enterprise Program.

7-24.1 Disadvantaged Business Enterprise Affirmative Action Plan: Prior to award of the Contract, have an approved Disadvantaged Business Enterprise (DBE) Affirmative Action Program Plan filed with the Equal Opportunity Office. Update and resubmit the plan every three years. No Contract will be awarded until the Department approves the Plan. The DBE Affirmative Action Program Plan is incorporated into and made a part of the Contract.

7-24.2 Required Contract and Subcontract DBE Assurance Language: In accordance with 49 CFR 26.13 (b), the Contract FDOT signs with the Contractor (and each subcontract the prime contractor signs with a subcontractor) must include the following assurance: “The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to,

1. Withholding monthly progress payments;
2. Assessing sanctions;
3. Liquidated damages; and/or
4. Disqualifying the Contractor from future bidding as non-responsible.”

7-24.3 Plan Requirements: Include the following in the DBE Affirmative Action Program Plan:

1. A policy statement, signed by an authorized representative (president, chief executive officer, or chairman of the contractor), expressing a commitment to use DBEs in all aspects of contracting to the maximum extent feasible, outlining the various levels of responsibility, and stating the objectives of the program. Circulate the policy statement throughout the Contractor’s organization.

2. The designation of a Liaison Officer within the Contractor’s organization, as well as support staff, necessary and proper to administer the program, and a description of the authority, responsibility, and duties of the Liaison Officer and support staff. The Liaison Officer and staff are responsible for developing, managing, and implementing the program on a day-to-day basis for carrying out technical assistance activities for DBEs and for disseminating information on available business opportunities so that DBEs are provided an equitable opportunity to participate in Contracts let by the Department.

3. Utilization of techniques to facilitate DBE participation in contracting activities which include, but are not limited to:

a. Soliciting price quotations and arranging a time for the review of Plans, quantities, specifications, and delivery schedules, and for the preparation and presentation of quotations.

b. Providing assistance to DBEs in overcoming barriers such as the inability to obtain bonding, financing, or technical assistance.

c. Carrying out information and communication programs or workshops on contracting procedures and specific contracting opportunities in a timely manner, with such programs being bilingual where appropriate.

d. Encouraging eligible DBEs to apply for certification with the Department.

e. Contacting Minority Contractor Associations and city and county agencies with programs for disadvantaged individuals for assistance in recruiting and encouraging eligible DBE contractors to apply for certification with the Department.

7-24.4 DBE Records and Reports: Submit the following through the Equal Opportunity Compliance System:

1. DBE Commitments at or before the Pre-Construction Conference.
2. Report monthly, through the Equal Opportunity Reporting System on the Department's Website, actual payments (including retainage) made to DBEs for work performed with their own workforce and equipment in the area in which they are certified. Report payments made to all DBE and Minority Business Enterprise (MBE) subcontractors and DBE and MBE construction material and major suppliers.

The Equal Opportunity Office will provide instructions on accessing this system. Develop a record keeping system to monitor DBE affirmative action efforts which include the following:

1. The procedures adopted to comply with these Specifications;
 2. The number of subordinated Contracts on Department projects awarded to DBEs;
 3. The dollar value of the Contracts awarded to DBEs;
 4. The percentage of the dollar value of all subordinated Contracts awarded to DBEs as a percentage of the total Contract amount;
 5. A description of the general categories of Contracts awarded to DBEs;
- and
6. The specific efforts employed to identify and award Contracts to DBEs.

Upon request, provide the records to the Department for review.

Maintain all such records for a period of five years following acceptance of final payment and have them available for inspection by the Department and the Federal Highway Administration.

7-24.5 Counting DBE Participation and Commercially Useful Functions: 49 CFR Part 26.55 specifies when DBE credit shall be awarded for work performed by a DBE. DBE credit can only be awarded for work actually performed by DBEs themselves for the types of work for which they are certified. When reporting DBE Commitments, only include the dollars that a DBE is expected to earn for work they perform with their own workforce and equipment. Update DBE Commitments to reflect changes to the initial amount that was previously reported or to add DBEs not initially reported.

When a DBE participates in a contract, the value of the work is determined in accordance with 49 CFR Part 26.55, for example:

1. The Department will count only the value of the work performed by the DBE toward DBE goals. The entire amount of the contract that is performed by the DBE's own forces (including the cost of supplies, equipment and materials obtained by the DBE for the contract work) will be counted as DBE credit.

2. The Department will count the entire amount of fees or commissions charged by the DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services or for providing bonds or insurance specifically required for the performance of a Department-assisted contract, toward DBE goals, provided that the Department determines the fees to be reasonable and not excessive as compared with fees customarily followed for similar services.

3. When the DBE subcontracts part of the work of its contract to another firm, the Department will count the value of the subcontracted work only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

4. When a DBE performs as a participant in a joint venture, the Department will count the portion of the dollar value of the contract equal to the distinct, clearly defined portion of the work the DBE performs with its own forces toward DBE goals.

5. The Contractors shall ensure that only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a contract may be counted toward the voluntary DBE goal.

6. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

7. Contractors wishing to use joint checks involving DBE credit must provide written notice to the District Contract Compliance Office prior to issuance of the joint check. The Contractor must also provide a copy of the notice to the DBE subcontractor and maintain a copy with the project records.

8. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.

9. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

10. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own workforce, or if the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, the DBE has not performed a commercially useful function.

7-24.6 Prompt Payments: Meet the requirements of 9-5 for payments to all DBE subcontractors.

7-25 On-The-Job Training Requirements.

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide On-The-Job Training aimed at developing full journeymen in the type of trade or job classification involved in the work. In the event the Contractor subcontracts a portion of the Contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this Section. Ensure that, when feasible, 25% of trainees in each occupation are in their first year of training. The Contractor shall incorporate the requirements of this Training Section into such subcontract.

The number of trainees will be estimated on the number of calendar days of the Contract, the dollar value, and the scope of work to be performed. The trainee goal will be finalized at a Post-Preconstruction Trainee Evaluation Meeting, and the goal will be distributed among the work classifications based on the following criteria:

1. Determine the number of trainees on Federal Aid Contract:

a. No trainees will be required for Contracts with a Contract Time allowance of less than 275 calendar days.

b. If the Contract Time allowance is 275 calendar days or more, the number of trainees shall be established in accordance with the following chart:

Estimated Contract Amount	Trainees Required
\$2,000,000 or less	0
Over \$2,000,000 to \$4,000,000	2
Over \$4,000,000 to \$6,000,000	3
Over \$6,000,000 to \$12,000,000	5
Over \$12,000,000 to \$18,000,000	7
Over \$18,000,000 to \$24,000,000	9
Over \$24,000,000 to \$31,000,000	12
Over \$31,000,000 to \$37,000,000	13
Over \$37,000,000 to \$43,000,000	14
Over \$43,000,000 to \$49,000,000	15
Over \$49,000,000 to \$55,000,000	16
Over \$55,000,000 to \$62,000,000	17
Over \$62,000,000 to \$68,000,000	18
Over \$68,000,000 to \$74,000,000	19
Over \$74,000,000 to \$81,000,000	20
Over \$81,000,000 to \$87,000,000	21
Over \$87,000,000 to \$93,000,000	22
Over \$93,000,000 to \$99,000,000	23
Over \$99,000,000 to \$105,000,000	24
Over \$105,000,000 to \$112,000,000	25
Over \$112,000,000 to \$118,000,000	26
Over \$118,000,000 to \$124,000,000	27
Over \$124,000,000 to \$130,000,000	28
Over \$130,000,000 to *	
*One additional trainee per \$6,000,000 of estimated Construction Contract amount over \$130,000,000	

Further, if the Contractor or subcontractor requests to utilize banked trainees as discussed later in this Special Provision, a Banking Certificate will be validated at this meeting allowing credit to the Contractor for previously banked trainees. Banked credits of prime Contractors working as Subcontractors may be accepted for credit. The Contractor's Project Manager, the Construction Project Engineer and the Department's District Contract Compliance Manager will attend this meeting. Within ten days after the Post-Preconstruction Training Evaluation Meeting, the Contractor shall submit to the Department for approval an On-The-Job Training Schedule indicating the number of trainees to be trained in each selected classification and the portion of

the Contract Time during which training of each trainee is to take place. This schedule may be subject to change if any of the following occur:

1. When a start date on the approved On-The-Job Training Schedule has been missed by 14 or more days,
2. When there is a change in previously approved classifications, or
3. When replacement trainees are added due to voluntary or involuntary termination.

The revised schedule will be resubmitted to and approved by the Department's District Contract Compliance Manager.

The following criteria will be used in determining whether or not the Contractor has complied with this Training Special Provision as it relates to the number of trainees to be trained:

1. Credit will be allowed for each trainee that is both enrolled and satisfactorily completes training on this Contract. Credit for trainees, over the established number for this Contract, will be carried in a "bank" for the Contractor and credit will be allowed for those surplus trainees in subsequent, applicable projects. A "banked" trainee is described as an employee who has been trained on a project, over and above the established goal, and for which the Contractor desires to preserve credit for utilization on a subsequent project.

2. Credit will be allowed for each trainee that has been previously enrolled in the Department's approved training program on another Contract and continues training in the same job classification and completes their training on a different contract.

3. Credit will be allowed for each trainee who, due to the amount of work available in their classification, is given the greatest practical amount of training on the Contract regardless of whether or not the trainee completes training.

4. Credit will be allowed for any training position indicated in the approved On-The-Job Training Schedule, if the Contractor can demonstrate that a good faith effort to provide training in that classification was made.

5. No credit will be allowed for a trainee whose employment by the Contractor is involuntarily terminated unless the Contractor can clearly demonstrate good cause for this action.

Training and upgrading of minorities, women and economically disadvantaged persons toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. If a non-minority male is enrolled into the On-The-Job Training Program, the On-The-Job Training Notification of Personnel Action Form notifying the District Contract Compliance Manager of such action shall be accompanied by a disadvantaged certification or a justification for such action acceptable to the Department's District Contract Compliance Manager. The Contractor will be given an opportunity and will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training is not intended, and shall not be used, to discriminate against any applicant for training, whether a minority, woman or disadvantaged person.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman status or have been employed as a journeyman. The Contractor may satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the

Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established at the Post-Preconstruction Trainee Evaluation Meeting and approved by the Department. Graduation to journeyman status will be based upon satisfactory completion of a Proficiency Demonstration set up at the completion of training and established for the specific training classification, completion of the minimum hours in a training classification range, and the employer's satisfaction that the trainee does meet journeyman status in the classification of training. Upon reaching journeyman status, the following documentation must be forwarded to the District Contract Compliance Office:

1. Trainee Enrollment and Personnel Action Form

2. Proficiency Demonstration Verification Form indicating completion of each standard established for the classification signed by representatives of both the Contractor and the Department.

The Department and the Contractor shall establish a program that is tied to the scope of the work in the project and the length of operations providing it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classifications concerned, by at least, the minimum hours prescribed for a training classification. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal Aid Highway Construction Contract. Approval or acceptance of a training schedule shall be obtained from the Department prior to commencing work on the classifications covered by the program.

A voluntary On-The-Job Training Program is available to a Contractor, which has been awarded a State funded project. Through this program, the Contractor will have the option to train employees on State funded projects for "banked credit" as discussed previously in this provision, to be utilized on subsequent Federal Aid Projects where training is required. Those Contractors availing themselves of this opportunity to train personnel on state funded projects and bank trainee hours for credit shall comply with all training criteria set forth in this Section for Federal Aid Projects; voluntary banking may be denied by the Department if staff is not available to monitor compliance with the training criteria.

It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial type positions. Training is permissible in lower level management positions such as office engineers, estimators, etc., where the training is oriented toward construction applications. Training in the laborer classifications, except Common/General Laborer, may be permitted provided that significant and meaningful training is provided and approved by the District Contract Compliance Office.

When approved in advance by the District Contract Compliance Manager, credit will be given for training of persons in excess of the number specified herein under the current Contract or a Contractor will be allowed to bank trainees who have successfully completed a training program and may apply those trainees to a training requirement in subsequent projects upon approval of the Department's District Contract Compliance Manager. This credit will be given even though the Contractor may receive training program funds from other sources, provided such other source do not specifically prohibit the Contractor from receiving other form of

compensation. Offsite training is permissible as long as the training is an integral part of an approved training program and does not compromise a significant part of the overall training. Credit for offsite training indicated above may only be made to the Contractor where it does one or more of the following and the trainees are concurrently employed on a Federal Aid Project:

1. Contributes to the cost of the training,
2. Provides the instruction to the trainee, or
3. Pays the trainee's wages during the offsite training period.

The Contractor shall compensate the trainee at no less than the laborer rate established in the Contract at the onset of training. The compensation rate will be increased to the journeyman's wage upon graduation from the training program for the remainder of the time the trainee works in the classification in which they were trained.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed. The Contractor shall enroll a trainee in one training classification at a time to completion before the trainee can be enrolled in another classification on the same project.

The Contractor shall maintain records to document the actual hours each trainee is engaged in training on work being performed as a part of this Contract.

The Contractor shall submit to the District Contract Compliance Manager a copy of an On-The-Job Training Notification of Personnel Action form no later than seven days after the effective date of the action when the following actions occur: a trainee is transferred on the project, transferred from the project to continue training on another Contract, completes training, is upgraded to journeyman status or voluntary terminates or is involuntary terminated from the project.

The Contractor shall furnish to the District Contract Compliance Manager a copy of a Monthly Time Report for each trainee. The Monthly Time Report for each month shall be submitted no later than the tenth day of the subsequent month. The Monthly Time Report shall indicate the phases and sub-phases of the number of hours devoted to each proficiency.

Highway or Bridge Carpenter Helper, Mechanic Helper, Rodman/Chainman, and Timekeeper classifications will not be approved for the On-The-Job Training Program.

The number of trainees may be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

The Contractor will have fulfilled the responsibilities of this Specification when acceptable training has been provided to the trainee as specified above.

7-26 Cargo Preference Act – Use of United States-Flag Vessels.

Pursuant to Title 46 CFR 381, the Contractor agrees

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this Contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this

Article to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

3. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this Contract.

7-27 Equal Employment Opportunity Requirements.

7-27.1 Equal Employment Opportunity Policy: Accept as the operating policy, the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their age, race, color, religion, national origin, sex, or disability and to promote the full realization of equal employment opportunity through a positive continuing program:

“It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their age, race, religion, color, national origin, sex, or disability. Such action must include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training.”

7-27.2 Equal Employment Opportunity Officer: Designate and make known to the Department’s contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who must be capable of effectively administering and promoting an active Contractor program employment opportunity and who must be assigned adequate authority and responsibility to do so.

7-27.3 Dissemination of Policy: All members of the Contractor’s staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor’s equal employment opportunity policy and contractual responsibilities.

7-27.4 Recruitment: When advertising for employees, include in all advertisements for employees the notation “An Equal Opportunity Employer”.

7-27.5 Personnel Actions: Establish and administer wages, working conditions, employee benefits, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination without regard to age, race, color, religion, national origin, sex, or disability.

Follow the following procedures:

1. Conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

2. Periodically evaluate the spread of wages paid with each classification to determine any evidence of discriminatory wage practices.

3. Periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action must include all affected persons.

4. Investigate all complaints of alleged discrimination made in connection with obligations under this Contract, attempt to resolve such complaints, and take appropriate

corrective action. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action must include such other persons. Upon completion of each investigation inform every complainant of all of the avenues of appeal.

7-27.6 Subcontracting: Use the best efforts to ensure subcontractor compliance with their equal employment opportunity policy.

7-27.7 Records and Reports: Keep such records as are necessary to determine compliance with the equal employment opportunity obligations. The records kept will be designed to indicate the following:

1. The number of minority and nonminority group members employed in each work classification on the project.
2. The progress and efforts being made in cooperation with unions to increase minority group employment opportunities (applicable only to Contractors who rely in whole or in part on unions as a source of their work force).
3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority group employees as deemed appropriate to comply with their Equal Employment Opportunity Policy.
4. The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority group representation among their employees as deemed appropriate to comply with their Equal Employment Opportunity Policy.

All such records must be retained for a period of three years following completion of the contract work and be available at reasonable times and places for inspection by authorized representatives to the Department and the Federal Highway Administration.

Upon request, submit to the Department a report of the number of minority and nonminority group employees currently engaged in each work classification required by the Contract work.

7-28 Preference to State Residents.

Florida Statutes 255.099 (Chapter 2010-147, Section 50, Laws of Florida), providing for preference to residents of the State of Florida, is hereby made a part of this Contract:

Each contract that is funded by state funds must contain a provision requiring the Contractor to give preference to the employment of state residents in the performance of the work on the project if state residents have substantially equal qualifications to those of nonresidents.

As used in this Section, the term “substantially equal qualifications” means the qualification of two or more persons among whom the employer cannot make a reasonable determination that the qualifications held by one person are better suited for the position than the qualifications held by the other person or persons.

7-29 E-Verify.

The Contractor shall utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the Contract and shall expressly require any subcontractors performing work or providing services pursuant to the Contract to likewise utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term.

7-30 Scrutinized Companies.

For Contracts of any amount, if the Department determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the Department shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the Department's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

For Contracts \$1,000,000 and greater, if the Department determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the Department shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the Department's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

SECTION 8 PROSECUTION AND PROGRESS

8-1 Subletting or Assigning of Contracts.

Do not, sell, transfer, assign or otherwise dispose of the Contract or Contracts or any portion thereof, or of the right, title, or interest therein, without written consent of the Department. If the Contractor chooses to sublet any portion of the Contract, the Contractor must submit a written request to sublet work on the Certification of Sublet Work form developed by the Department for this purpose. With the Engineer's acceptance of the request, the Contractor may sublet a portion of the work, but shall perform with its own organization work amounting to not less than 40% of the total Contract amount. The Certification of Sublet Work request will be deemed acceptable by the Department, for purposes of the Department's consent, unless the Engineer notifies the Contractor within 5 business days of receipt of the Certification of Sublet Work that the Department is not consenting to the requested subletting.

Include in the total Contract amount the cost of materials and manufactured component products, and their transportation to the project site. For the purpose of meeting this requirement the Department will not consider off-site commercial production of materials and manufactured component products that the Contractor purchases, or their transportation to the project, as subcontracted work.

If the Contractor sublets a part of a Contract item, the Department will use only the sublet proportional cost in determining the percentage of subcontracted normal work.

Execute all agreements to sublet work in writing and include all pertinent provisions and requirements of the Contract. All other agreements must be in writing and reference all applicable Contract provisions. Upon request, submit to the Department a copy of the

subcontract and agreement. The subletting of work does not relieve the Contractor or the surety of their respective liabilities under the Contract.

The Department recognizes a subcontractor only in the capacity of an employee or agent of the Contractor, and the Engineer may require the Contractor to remove the subcontractor as in the case of an employee.

8-2 Work Performed by Equipment-Rental Agreement.

The limitations set forth in 8-1, concerning the amount of work that may be sublet, do not apply to work performed by equipment-rental agreement. However, for any work proposed to be performed by equipment-rental agreement, notify the Engineer in writing of such intention before using the rented equipment, and indicate whether the equipment will be rented on an operated or non-operated basis. Include with the written notice a listing and description of the equipment and a description of the particular work to be performed with such equipment. As an exception to the above requirements, the Department will not require written notice for equipment to be rented (without operators) from an equipment dealer or from a firm whose principal business is the renting or leasing of equipment.

The operators of all rented equipment, whether rented on an operated or a non-operated basis, are subject to all wage rate requirements applicable to the project. When renting equipment without operators, the Contractor shall carry the operators on his own payroll. For equipment that is rented on an operated basis, and when required by the Contract or requested by the Engineer, submit payrolls from the lessor with the names of the operators shown thereon.

When a lessor provides rentals of equipment on an operated basis that exceed \$10,000, such lessor is subject to any Equal Employment Opportunity requirements that are applicable to the project.

8-3 Prosecution of Work.

8-3.1 Compliance with Time Requirements: Commence work in accordance with the accepted working schedule and provide sufficient labor, materials and equipment to complete the work within the time limit(s) set forth in the proposal. Should the Contractor fail to furnish sufficient and suitable equipment, forces, and materials, as necessary to prosecute the work in accordance with the required schedule, the Engineer may withhold all estimates that are, or may become due, or suspend the work until the Contractor corrects such deficiencies.

8-3.2 General: For this Contract submit the following schedules and reports.

8-3.2.1 Contract Schedule: Submit to the Engineer for acceptance a Critical Path Method (CPM) Contract Schedule for the first 20% of Contract Time (design and construction) of the project within 30 calendar days after execution of the Contract or at the preconstruction conference, whichever is earlier. Prior to completion of the first 20% of the original Contract Time, submit to the Engineer for acceptance a CPM Contract Schedule for the remaining Contract Time.

The Contract Schedule shall include detailed schedule diagrams and schedule data as described below that shows how the Contractor intends to complete the work within the Contract Time. Any Contract defined holidays, suspension days, or weather days that affect the Critical Path will be added as they occur. When the project includes a Maintenance of Traffic plan, the work breakdown structure (WBS) for the Contract Schedule shall be consistent with the Contract Maintenance of Traffic plan, showing activities for each discrete Contract activity to be accomplished within each Maintenance of Traffic phase. When the project does not include a Maintenance of Traffic plan, the WBS shall be consistent with the phasing shown in

the Contract Documents. Include activities for deliverables and reviews in the schedule. Sufficient liaison shall be conducted and information provided to indicate coordination with utility owners having facilities within the project limits. The schedule must incorporate the utility work schedules included in the Contract Documents, unless changed by mutual agreement of the utility company, the Contractor and the Department. Show the interdependence (logic) of the utility work schedule activities with other schedule activities in the Contract Schedule for acceptance by the Department, unless otherwise approved by the Engineer.

Failure to include any element of work or any activity relating to utility work will not relieve the Contractor from completing all work within the Contract Time at no additional time or cost to the Department, notwithstanding the acceptance of the schedule by the Department.

The Contract Schedule may indicate a completion date in advance of the expiration of Contract Time. However, the Department will not be liable in any way for the Contractor's failure to complete the project prior to expiration of Contract Time. Any additional costs, including extended overhead incurred between the Contractor's scheduled completion date and the expiration of Contract Time, shall be the responsibility of the Contractor. The Contractor shall not be entitled to claim or recover any such costs from the Department.

Acceptance by the Engineer of the Contract Schedule or any updates shall not be construed as approval of any particular construction methods or sequence of construction or to relieve the Contractor of its responsibility to provide sufficient materials, equipment and labor to guarantee the completion of the Contract in accordance with the Contract Documents.

8-3.2.2 Schedule Submissions: Develop the schedule in Precedence Diagram Method (PDM) format.

Each schedule submission and monthly update shall include a minimum of the following seven items:

1. Submit the files electronically in the current Department version of Oracle Primavera P6 format by exporting the full schedule to an .xer file format.
2. A Gantt chart grouped by WBS, then phase, sorted by early start then total float. The chart shall include the following columns:
 - a. Activity ID
 - b. Activity Name
 - c. Calendar
 - d. Activity Type
 - e. Original Duration
 - f. Remaining Duration
 - g. Duration % Complete
 - h. Early Start
 - i. Early Finish
 - j. Late Start
 - k. Late Finish
 - l. Total Float
 - m. Budgeted Total Cost

The chart shall also include activity bars using the Oracle Primavera P6 default color coding for the bars. The chart shall be submitted as a Portable Document Format (.pdf) file and formatted on 11 inch by 17 inch landscape oriented sheets, with the activity table and bars.

3. A Gantt chart with the same columns and bars listed in 8-3.2.2(2), but filtered for the longest path, not grouped but sorted by early start, then early finish. The chart shall be submitted as a .pdf file and formatted on 11 inch by 17 inch landscape oriented sheets, with the activity table and bars.

4. The Schedule log for the calculated schedule, submitted as a.pdf file and formatted on 8-1/2 inch by 11 inch portrait oriented sheets.

5. A schedule narrative report with the following information:

a. Current project schedule status and identify potential delays

b. A description of the progress made since the previous schedule submission

c. Objectives for the upcoming 30 calendar days

d. Indicate if the project is on schedule, ahead of schedule or behind schedule.

1. If ahead or behind schedule, indicate the specific number of calendar days.

2. If behind schedule, include a detailed recovery plan that will put the schedule back on track or identify the alleged delay event for which a preliminary request for an extension of Contract Time has been submitted, which if granted by the Department, will account for the amount of time the project is behind schedule, or provide a fully supported request for a Contract Time extension, which if granted by the Department, will account for the amount of time the project is behind schedule.

e. Description of the current critical path and indicate if the critical path has changed in the last 30 calendar days.

f. Discussion of current successes or problems that have affected either the critical path's length or have caused a shift in the critical path within the last 30 calendar days.

g. Identify specific activities, progress, or events that may reasonably be anticipated to impact the critical path within the next 30 calendar days, either to affect its length or to shift it to an alternate path.

h. List all changes to schedule logic, calendars, calendar assignments, activity types, activity names, changes to constraints, added activities or duration changes (original and remaining) that have been made to the schedule since the previous submission.

For each change, describe the basis for the change and specifically identify the affected activities by activity ID.

i. Identify any and all activities, either in progress or scheduled to occur within the following 30 days that require Department participation, review, approval, etc.

6. A detailed logic report that provides a list of activities in the schedule sorted by activity ID, no grouping and submitted as a .pdf file and formatted on 8-1/2 inch by 11 inch portrait oriented sheets. For each activity listed, the report shall include the activity's predecessors and successors, including the relationship type and lag.

7. A chart showing the budgeted total cost versus time shall be submitted as a pdf file and formatted on 8-1/2 inch by 11 inch landscape oriented sheets. The chart shall include the following two curves:

- a. budgeted total cost versus time based on the early dates.
- b. budgeted total cost versus time based on the late dates.

For each submission of the Contract Schedule and monthly update, the Engineer will have 21 days to accept the Contract Schedule or monthly update or to schedule a meeting, if needed, within that time, with the Contractor to resolve any problems that prevent acceptance of the schedule. Attend the meeting scheduled by the Engineer, and submit a corrected schedule to the Engineer within seven days after the meeting. The process will be continued until a Contract Schedule or monthly update is accepted or accepted as noted by the Engineer.

Upon the Engineer's acceptance of the Contract Schedule, submit monthly updates of the Contract Schedule, including all months prior to the start of construction, reflecting progress through the monthly estimate cut-off date within 8 calendar days after the monthly estimate cut-off date.

The Engineer may withhold monthly payments due for failure of the Contractor to submit an acceptable schedule or monthly updates within the time frame described herein.

8-3.2.3 Schedule Content: All schedule submissions shall comply with the following content guidelines as appropriate to the specific submission:

The schedules shall include the sequence, order, and interdependence of major construction milestones and activities. Include procurement of project specific materials and equipment that require submittals and are not readily available, long-lead time items, and key milestones identified by the Contract.

Show the sequence, order, and interdependence of activities in which the work is to be accomplished. Include allowance for Department review, acceptance and return of submittals, samples and shop drawings where Department acceptance is specifically required (in accordance with 5-1.4.6 of the standard specifications). In addition to construction activities, schedule activities shall include the submittals, procurement, and Department or Utility activities:

1. Submittal activities shall include submittal preparation, Department review, and acceptance of submittals. If the Department's action on any submittal is "Not Accepted" or "Revise and Resubmit", a new series of submittal preparation activities shall be inserted into the schedule. Predecessor for the new submittal preparation activity will be the original acceptance activity and the successor of the new acceptance activity will be the fabrication/delivery activity for the equipment or material.

2. Procurement activities shall include all project specific materials and equipment that require submittals and are not readily available, receipt of materials with estimated procurement costs of major items for which payment of stockpiled materials will be requested in advance of installation, fabrication of special material and equipment, and their installation and testing.

3. Show activities of the Department or Utilities that affect progress and contract-required dates for completion of all or parts of the work.

Detailed schedule data: shall conform to the following:

1. All activities shall be assigned to a specific project calendar within the software. Specific project calendars will be defined within the software to include planned work days and planned non-work days. These project calendars will include both Contractor and Contract defined holidays and suspension days as non-workdays. The use of

global calendars is not permitted. Project calendars shall not inherit holidays from global calendars. Work shifts identified for each project calendar shall be consistent with the Contractor's planned workdays. Actual start and finish date times shall be consistent with the work shift hours on the calendar assigned to the activities.

2. Each schedule activity shall be cost loaded. Activity cost loading shall be consistent with the bid breakdown. The sum total of the activity cost loading shall be equal to the current contract value.

3. At a minimum, each schedule activity shall contain codes by:
a. Responsibility: including, but not be limited to, Department, Utility, Contractor/subcontractor, supplier/vendor, consultant, etc
b. Phasing: identify the appropriate Maintenance of

Traffic phase or subphase.

The required coding can be accomplished by WBS codes or project activity codes.

4. Key milestones as identified by Contract. At a minimum, the start and finish of each Maintenance of Traffic phase or subphase shall be represented by a milestone activity. Milestone activities shall be start or finish milestone type activities, as appropriate.

5. All non-procurement activities must be less than or equal to 20 workdays unless approved by the Engineer. Sufficient explanation for activities over 20 days shall be provided for the Engineer's review and approval.

6. All activities must include adequate detailed activity descriptions to describe the work that is included. In each activity, through the activity name, user defined field, or cost account, give quantity and unit of measure so that the amount of work the activity involves is clearly communicated.

7. Only two open-ended activities (the first and the last) are allowed.

8. Constraints shall only be used for "project start," and "project completion." Constraints shall not override logic. The project start constraint shall be the Contract execution date. The project completion date shall be the Contract completion date plus any Contract defined holidays and suspension days included on the longest path. The use of any other imposed constraints is not allowed without specific approval by the Engineer. Any other desired constraints must be submitted to the Engineer with the rationale for the use of each desired additional constraint. If allowed by the Engineer, the rationale should be recorded in the activity's notebook field. Mandatory constraints (start and finish) violate network logic and shall not be used.

9. Out of sequence progress shall be corrected on each monthly update by modifying the schedule logic so that the logic accurately depicts the actual sequence of the work. The Retained Logic setting shall be used when calculating the schedule.

10. All changes to activities shall be recorded with a note in the activity notebook field. The notebook entry shall include, as a minimum, the date and reason for the change, as well as reference to a document wherein the Engineer acknowledges and accepts the change.

11. The use of resource leveling, either manual or automatic, is prohibited.

12. Activities shall not be deleted from the schedule. If an activity is not required, then upon approval from the Engineer, the Contractor shall provide actual start and finish dates equal to the date of the Engineer's approval, shall add the word "Removed" to the activity name and shall make a notebook entry explaining the reason for removing the activity from the planned work.

13. Activities with appropriate cost loading shall be added to the schedule upon approval of the Engineer when it is determined that a Contract work element was omitted from the previous accepted Contract schedule or update or if work is added to the Contract.

14. Activity names shall only be changed to reflect changes to the scope of the work element represented by the activity, not as a way to remove and replace activities. Changes to activity names shall be approved by the Engineer.

15. Unless otherwise approved by the Engineer, activity types shall be defined as milestones, level-of-effort, WBS summary or task dependent. Resource dependent type shall not be used. All activities shall have percent complete type set to duration and duration type set to either fixed duration and unit/time or fixed duration and units.

8-3.2.4 Weekly Meetings: Attend weekly meetings scheduled by the Engineer to discuss Contract progress, near term scheduled activities, including utility relocations, problems and their proposed solutions. Submit a Three-Week Planning Schedule at each weekly meeting, showing the Contract schedule activities completed in the previous week and planned for the next two weeks. Develop the Three-Week Planning Schedule in Gantt chart format from the updated Contract schedule, identifying completed, current and planned activities. Designate all activities that are controlling work items as determined by the currently accepted Contract schedule

8-3.2.5 Float: Float is defined as the amount of time the finish of an activity can be delayed. Two kinds of float are possible: Total float is how much an activity can be delayed without affecting the finish date of the project or an intermediate deadline (constraint); it is the difference between the late finish date and the early finish date. Free float is how much an activity can be delayed without affecting its earliest successor.

Float is not for the exclusive use or benefit of either the Department or the Contractor.

Use of float suppression techniques, such as preferential sequencing (arranging critical path through activities more susceptible to Department caused delay), special lead/lag logic restraints, zero total or free float constraints, extended activity times, positive relationship lags, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates. The use of finish-to-start lags greater than zero days, start-to-start lags that exceed the duration of the predecessors, or finish-to-finish lags that exceed the duration of the successor, shall not be used without the expressed approval of the Engineer. The use of Resource Leveling, or similar software features, for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

Negative float shall not be a basis for requesting time extensions. Any extension of time shall be addressed in accordance with 8-3.2. 7. Scheduled completion dates that extend beyond the Contract completion date, evidenced by negative float, may be used in computations for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

8-3.2.6 Critical Path: The critical path shall be defined as the longest path and is represented by the longest logical path through the remaining activities, resulting in the earliest calculated completion date. There may be more than one longest path in the schedule. However, the use of float suppression techniques as described in 8-3.2.5 shall not be used to force the schedule to have more than one longest path.

8-3.2.7 Time Extensions: The Contractor is responsible for submitting a request for Contract Time extension in accordance with 8-7.3.2. An extension of time shall be considered only to the extent that an event impacts the completion date of the schedule such that the impacted completion date is later than the Contract completion date as adjusted previously. The Pre-event Schedule is defined as the latest accepted update of the Contract schedule, statused (actual start dates added, actual finish dates added, remaining durations adjusted) to the end of the day before the start of the event. The Post-event Schedule is defined as the accepted update of the Contract Schedule just after the end of the event and destatused (actual start dates removed, actual finish dates removed, remaining durations adjusted) to the end of the last day of the event

As a minimum, time extension requests shall contain:

1. A descriptive summary of the event
2. A written analysis supported by a:
 - a. Pre-event Schedule
 - b. Post-event Schedule
3. Schedule submittal items 1, 2, 3 and 4 required in 8-3.2.2 shall be provided, for the Pre-event and Post-event Schedules

Time extensions shall not be considered for proposals that do not include full documentation described above. Once a time extension has been approved by the Engineer, the Contract completion date shall be changed accordingly.

8-3.2.7 Performance of Work: By submitting a schedule, the Contractor is making a positive assertion that the project has been and will be constructed in the order indicated in the schedule. Prosecute the work in accordance with the latest accepted Contract Schedule or update. Any costs associated with meeting milestones and completing the project within the authorized Contract Time will be borne solely by the Contractor.

8-3.2.8 As-Built Schedule: As a condition for the release of any retainage, submit the as-built schedule within 10 days of Final Acceptance. The as-built schedule shall describe the actual order and start and stop times for all activities by the Contractor.

8-3.3 Beginning Work: The Department will issue the Notice to Proceed within 20 calendar days, excluding Saturdays, Sundays and Holidays, after execution of the Contract. The Notice to Proceed may designate the physical point or points on the project to start the work. Do not commence work under the Contract until the Department has issued the Notice to Proceed.

8-3.4 Provisions for Convenience of Public: Schedule construction operations so as to minimize any inconvenience to adjacent businesses or residences. Where necessary, the Engineer may require the Contractor to first construct the work in any areas along the project where inconveniences caused by construction operations would present a more serious handicap. In such critical locations, where there is no assurance of continuous effective prosecution of the work once the construction operations are begun, the Engineer may require the Contractor to delay removal of the existing (usable) facilities.

8-3.5 Preconstruction Conference: Before the Contractor begins actual construction; the Engineer will call a preconstruction conference at a place the Engineer designates to go over

the construction aspects of the project. Attend this meeting, along with the Department and the various utility companies that will be involved with the road construction.

8-3.6 Partnering: For this Contract, a non-bid pay item in the Lump Sum amount of \$ 40,000 has been established for Partnering. The objective of Partnering is to establish a partnership charter and action plan for the Contractor, the Engineer and other parties impacted by the activities covered under this Contract to identify and achieve reciprocal goals. These objectives may be met through participation in a major workshop held as early as possible after the Contract is awarded and follow-up workshops held periodically throughout the duration of the Contract.

As early as possible and prior to the preconstruction conference, meet with the Department's District Construction Engineer and plan an initial partnering/team building workshop. At this planning session, select a workshop facilitator, suitable to the District Construction Engineer, from the Department approved list of facilitators maintained by the State Construction Office. Additionally, the agenda, duration, location, time, and attendees for the initial workshop should be determined. Attendees should include the Department's District Construction Engineer and key project personnel, the Contractor's Superintendent and key personnel as well as other project or field level personnel.

Partnering workshops may be held periodically throughout the duration of the Contract if authorized by the District Construction Engineer.

The Department will reimburse the Contractor based on actual invoice amounts for the following costs associated with Partnering:

- a. Meeting room.
- b. Facilitator fees.
- c. Travel expenses of the facilitator, in accordance with Section 112.061,

Florida Statutes.

The Department will not reimburse the Contractor for any other expenses.

Payment will be the actual cost prorated as a percent of the Lump Sum amount.

Payment shall be made under:

Item No. 999- 16- Partnering - lump sum.

8-3.7 Disputes Review Board: For this Contract, a Disputes Review Board will be established to assist in the resolution of disputes and claims arising out of the work on the Contract.

8-3.7.1. Purpose: The Board will provide special expertise to assist in and facilitate the timely and equitable resolution of disputes and claims between the Department and the Contractor in an effort to avoid construction delay and future claims.

It is not intended for the Department or the Contractor to default on their normal responsibility to cooperatively and fairly settle their differences by indiscriminately assigning them to the Board. It is intended that the Board encourage the Department and Contractor to resolve potential disputes or claims without resorting to this alternative resolution procedure.

The Board will be used when normal Department-Contractor dispute or claim resolution is unsuccessful. Either the Department or the Contractor may refer a dispute or claim to the Board. Referral to the Board should be initiated as soon as it appears that the normal dispute resolution effort is not succeeding. Referral to the Board is accomplished by providing a position paper outlining the nature and scope of the dispute or claim and describing the basis for

entitlement to the dispute or claim. Only disputes or claims that have been duly preserved under the terms of the Contract as determined by the Board will be eligible to be heard by the Board. Requests for equitable adjustment must be certified as required by 4-3.2. Claims that are referred to the Board must be in compliance with 5-12. It is a condition of this Contract that the parties shall use the Dispute Review Board. The completed DRB hearing of any unresolved disputes or claims is a condition precedent to the Department or the Contractor having the right to initiate arbitration, other alternative resolution procedures, or to file a lawsuit, as provided by law, on such unresolved disputes or claims.

The recommendations of the Board will not be binding on either the Department or the Contractor unless otherwise stated in the Contract.

The Board will fairly and impartially consider disputes or claims referred to it and will provide written recommendations to the Department and Contractor to assist in the resolution of these disputes or claims.

8-3.7.2. Continuance of Work: During the course of the Disputes Review Board process, the Contractor will continue with the work as directed by the Engineer in a diligent manner and without delay or otherwise conform to the Engineer's decision or order, and will be governed by all applicable provisions of the Contract. Throughout any protested work, the Contractor will keep complete records of extra costs and time incurred. The Contractor will permit the Engineer and Board access to these and any other records needed for evaluating the disputes and claims.

8-3.7.3. Membership: The Disputes Review Board will consist of one member selected by the Department and approved by the Contractor, and one member selected by the Contractor and approved by the Department. The first two members will mutually select and agree on the third member. Normally, the third member will act as Chairman for all Board activities.

8-3.7.4 Qualification: It is desirable that all Board members have at least ten years of experience with the type of construction involved in this project, in the interpretation of Contract Documents, and in Contract dispute resolution. Board members must have attended the Dispute Resolution Board Foundation's Administration and Practices Workshop and must be on the Department's Lists of Candidate Members as provided on the Department's web site. The goal in selecting the third member is to complement the construction experience of the first two members, to provide leadership for the Board's activities, and to provide expertise in the area of administering alternative Contract resolution proceedings. It is imperative that Board members not show or be perceived as showing partiality to either the Contractor or the Department. A Board member shall not have any conflict of interest, which could affect their ability to act in a disinterested and unbiased manner.

8-3.7.5 Conflict of Interest: A person selected to the Board shall submit to the party appointing him/her a resume covering his/her applicable education and experience, a list of all DRBs, with meeting frequencies, on which he/she currently serves, and a disclosure statement covering, but not limited to, any of the following categories of relationships or prior involvement in this project:

1. Any direct or indirect ownership or financial interest in the Contractor awarded the project, the CEI consulting firm on the project, any subcontractor or supplier on the project or any business of another Board member.

2. Current employment by the Department, the Contractor awarded the Contract, or the CEI consulting firm on the project. Service as a Dispute Review Board Member shall not be construed to be employment.

3. Current employment by any subcontractor or supplier on the project.

4. Current employment by a consulting engineering firm that will be seeking future Contracts for CEI services from the Department.

5. Within the two year period immediately prior to award of the Contract, employment by: the Central Office of the Department; the Department's District or Turnpike in which the project is located; the Department, as a consultant in the District or Turnpike in which the project is located; the Contractor awarded the Contract, the CEI consulting firm on the project, any subcontractor or supplier on the project or any business of another Board member. Service as a Dispute Review Board Member shall not be construed to be employment.

6. A close personal relationship with any key individual in any firm involved in the Contract.

7. A prior involvement in the project of a nature, which might be construed as compromising his/her ability to act impartially in carrying out the duties of the Board.

8. A Contract as a consultant to the Contractor awarded the Contract.

9. A Contract as a consultant with any subcontractor or supplier on the project.

10. Current full-time employment by a Department prequalified contractor or consultant.

8-3.7.6 Disqualification: Category 1, 2, 3, 5, and 10 relationships listed in 8-3.7.5 shall disqualify a person from serving on the Board for this project. The other categories of relationships or prior involvement in this project listed above will be considered by the Contractor and the Department in arriving at their decision as to whether or not to accept a person as a member of the Board.

If during the life of the Contract, a Board member is made aware that a firm of which he/she is an employee is involved in the Contract as a subcontractor or supplier, he/she shall immediately give notice to the Department and the Contractor. Upon receiving such notification, the Department or the Contractor may, within ten (10) days, give notice that this Board member is no longer acceptable, and a new Board member shall be selected and approved as provided above. In no event, shall a Board member participate in a hearing by the Board of dispute involving a firm by which he is employed.

The Department may disqualify a person from serving on future Disputes Review Boards for Department projects who submits a disclosure statement which fails to provide accurate and complete disclosure of a relationship that prohibits him/her from serving on the Board for this project or one of the possible conflicts of interest listed above.

8-3.7.7 Selection of Members: Every attempt shall be made by the Department and the Contractor to complete the selection of Disputes Review Board members and execute the Three-Party Agreement prior to date of the preconstruction conference and, if applicable, the initial partnering workshop. The Department and the Contractor shall select their Board members and give the other party notice of the person they have selected to serve as a member of the

Board. This notice shall be accompanied by the resume and disclosure statement submitted by that person.

Within ten days of receiving the notice of selection of a Board member, the Department and the Contractor shall review the accompanying resume and disclosure statement, make such inquiries as each deems necessary and notify the other party in writing as to whether or not the person selected is acceptable. Failure to give this notice within the ten (10) days allowed shall be construed to be acceptance.

If a person selected is not acceptable to the other party, the party who selected that person shall within five (5) days select another person and provide to the other party to the Contract a notification accompanied by a resume and disclosure statement.

Once the Contractor and the Department have agreed upon the first two members of the Board they shall immediately notify those members of their approval. Within one week of this notification, the first two members of the Board shall select the third member and give written notice to the Contractor and the Department accompanied by that person's resume and disclosure statement.

Within ten days of receiving the notice of selection of a third member of the Board, the Department and the Contractor shall review the accompanying resume and disclosure statement, make such inquiries as each deems necessary and notify the first two members in writing as to whether or not the person selected is acceptable. If a person selected is not acceptable to the Contractor or the Department the first two members of the Board shall immediately select another person and provide notification accompanied by a resume and disclosure statement. Failure to give this notice within the ten (10) days allowed shall be construed to be acceptance.

If, (1) the Department or the Contractor fail to provide the other party notice of selection of a Board Member within the time specified, herein; (2) the first two members of the Board fail to provide notice to the parties of their selection of the third member of the Board within the times specified, herein; or (3) the parties are unable to agree on appointment of a Board member within 60 days after award of the Contract, that member shall be appointed by mutual consent of the Department's Director, Office of Construction, and the President of the Florida Transportation Builders Association.

Immediately after agreement is reached on all members of the Board the Contractor, the Department and the members of the Board shall proceed with execution of a Three Party Agreement as provided on the Department's web site. The execution of this agreement will not modify the requirements, terms or conditions of this Specification.

If during the life of the Contract, a Board member has a discussion regarding employment or entered into any agreement for employment after completion of the Contract with the Department, the Contractor or any subcontractor or supplier on the project, he/she shall immediately disclose this to the Contractor and the Department and shall be disqualified from serving on the Board.

Should the Department and the Contractor mutually agree to terminate a Disputes Review Board Three Party Agreement, the existing Disputes Review Board Three Party Agreement will remain in force until replaced by another fully executed Disputes Review Board Three Party Agreement. If, after the Department has made final acceptance of the project, there are unresolved disputes and claims remaining, the Disputes Review Board Three Party Agreement shall remain active and in full force and effect until the project is otherwise

administratively closed by the Department following final payment so that the Board may continue in operation until all unresolved disputes and claims are resolved.

8-3.7.8 Limitation for Referral of Disputes or Claims to the Board: Any disputes or claims that were not resolved prior to Final Acceptance of the project pursuant to 5-11 must be referred to the Board within 90 calendar days after Final Acceptance on projects with an original Contract amount of \$3,000,000 or less, and within 180 calendar days after Final Acceptance on projects with an original Contract amount greater than \$3,000,000. Only duly preserved disputes or claims will be eligible to be heard by the Board. Failure to submit all disputes or claims to the Board within aforementioned timeframe after Final Acceptance constitutes an irrevocable waiver of the Contractor's dispute or claim.

8-3.7.9. Basis of Payment: A per day cost of \$3,900.00 has been established by the Department to reimburse the Contractor for providing compensation to the three members of the Disputes Review Board. This amount will be paid to the Contractor for each day the Disputes Review Board is convened for regular DRB project meetings. For each day of the meeting, the Contractor shall compensate each Disputes Review Board member a sum of \$1,300.00. Such payment will be full compensation to the Board member for salary and all travel expenses (air fare, rental or personal automobile, motel room, meals, etc.) related to membership on the Board. Do not pay prior to the execution of the Three Party Agreement.

A per hearing cost of \$9,000 has been established by the Department for providing compensation for all members of the Dispute Review Board for participation in an actual hearing. The Board chairman will receive \$3,500 for participation in the hearing while the remaining two members will receive \$2,750 each. The Department and the Contractor will equally provide compensation to the Board for participation in an actual hearing. The Department will compensate the Contractor \$4,500 as its contribution to the hearing cost. Such payment will be full and complete compensation to the Board members for all expenses related to the hearing. This includes travel, accommodations, meals, pre- and post- hearing work, review of position papers and any rebuttals, conducting the hearing, drafting and issuance of recommendations, readdressing any requests for clarification. It is not intended for hearings to last longer than a single day, however, in some cases they may. Any additional time and/or compensation for a hearing would only be allowed upon prior written approval of the Department and the Contractor. If an additional day(s) is granted for the hearing, it will be at \$3,900 per day, regular meeting rate, payment of which is equally split between the Department and the Contractor.

The Department will prepare and mail minutes and progress reports, will provide administrative services, such as conference facilities and secretarial services, and will bear the cost of these services.

If the Board desires special services, such as legal consultation, accounting, data research, and the like, both parties must agree, and the costs will be shared by them as mutually agreed.

Payment shall be made under:

Item No. 999- 20- 1 Disputes Review Board meeting - per day.

Item No. 999- 20- 2 Disputes Review Board hearing - per each

8-3.8 Statewide Disputes Review Board: For this Contract, a Statewide Disputes Review Board will be available to assist in the resolution of disputes and claims arising out of the administration and enforcement of a specification when such specification specifically refers disputes to this Board.

8-3.8.1 Purpose: The Board will provide special expertise to assist in and facilitate the timely and equitable resolution of the disputes and claims between the Contractor and the Department.

It is not intended that the Department or the Contractor default on their normal responsibility to cooperatively and fairly settle their differences by indiscriminately assigning them to the Board. It is intended that the Board encourage the Department and Contractor to resolve potential disputes or claims without resorting to this alternative resolution procedure.

The Board will be used when normal Department-Contractor dispute or claim resolution is unsuccessful. Either the Department or the Contractor may refer a dispute or claim to the Board. Referral to the Board should be initiated as soon as it appears that the normal dispute resolution effort is not succeeding. Referral to the Board is accomplished by providing a position paper outlining the nature and scope of the dispute or claim and describing the basis for entitlement to the dispute or claim. Only disputes or claims that have been duly preserved under the terms of the Contract as determined by the Board will be eligible to be heard by the Board. Requests for equitable adjustment must be certified as required by 4-3.2. Claims that are referred to the Board must be in compliance with 5-12. It is a condition of this Contract that the parties shall use the Statewide Disputes Review Board.

The recommendations of the Board will be binding on both the Department and the Contractor.

The Board will fairly and impartially and without regard to how or by whom they may have been appointed, consider disputes or claims referred to it and will provide written recommendations to the Department and Contractor to assist in the resolution of these disputes or claims.

8-3.8.2 Membership: The Statewide Disputes Review Board will consist of members pre-selected by the Engineer and the President of the Florida Transportation Builders' Association (FTBA), and posted on the Department's Website.

Members on the Board will be pre-qualified as experts of the type of work being referred to this Board.

If during the life of the contract, a Board member has a discussion regarding employment or entered into any agreement for employment after completion of the contract with the Department, the Contractor or any subcontractor or supplier on the project, he/she shall immediately disclose this to the Contractor and the Department and shall be disqualified from serving on the Board.

After the Department has made final acceptance of the project, if disputes arise, the Statewide Disputes Review Board shall be activated to hear and rule on the disputed issue.

8-3.8.3 Procedure and Schedules for Disputes Resolution: Disputes or claims will be considered as quickly as possible, taking into consideration the particular circumstances and the time required to prepare detailed documentation. Steps may be omitted as agreed by the Department and the Contractor and the time periods stated below may be shortened in order to hasten resolution.

1. If the Contractor objects to any decision, action or order of the Engineer resulting from the Engineer's evaluation of the guaranteed product or performance period, the Contractor may file a written protest with the Engineer, stating clearly and in detail the basis for the objection, within 15 days after the event.

2. The Engineer will consider the written protest and make his decision on the basis of the pertinent contract provisions, together with the facts and circumstances involved in the dispute. The Engineer's decision will be furnished in writing to the Contractor within 15 days after receipt of the Contractor's written protest.

3. The Engineer's decision will be final and conclusive on the subject, unless the Contractor files a written appeal to the Engineer within 15 days of receiving the decision. Upon the Engineer's receipt of the Contractor's written appeal containing specific protest of all or part of the Engineer's decision, either the Department or the Contractor can refer the matter to the Board.

4. Upon receipt by the Board of a written duly preserved protest of a dispute or claim, either from the Department or the Contractor, it will first be decided when to conduct the hearing.

5. Either party furnishing any written evidence or documentation to the Board will furnish copies of such information to the other party a minimum of 15 days prior to the date the Board sets to convene the hearing for the dispute or claim. If the Board requests any additional documentation or evidence prior to, during, or after the hearing, the Department and/or Contractor will provide the requested information to the Board and to the other party.

6. The Contractor and the Department will each be afforded an opportunity to be heard by the Board and to offer evidence. Neither the Department nor the Contractor may present information at the hearing that was not previously distributed to both the Board and the other party.

7. The Board's recommendations for resolution of the dispute or claim will be given in writing to both the Department and the Contractor, within 15 days of completion of the hearings. The Board will focus its attention in the written report to matters of responsibility for repairs of guaranteed work or performance period as provided for by the Contract Documents.

8-3.8.4 Contractor Responsibility: The Contractor shall furnish to each Board member a set of all pertinent documents that are or may become necessary for the Board, except documents furnished by Department, to perform their function. Pertinent documents are any drawings or sketches, calculations, procedures, schedules, estimates, or other documents which are used in the performance of the work or in justifying or substantiating the Contractor's position. A copy of such pertinent documents must also be furnished to the Department.

Except for its participation in the Board's activities as provided in the construction Contract and in this Agreement, the Contractor will not solicit advice or consultation from the Board or any of its members on matters dealing in any way with the project, the conduct of the work or resolution of problems.

8-3.8.5 Department Responsibilities: Except for its participation in the Board's activities as provided in the construction Contract and in this Agreement, the Department will not solicit advice or consultation from the Board or any of its members on matters dealing in any way with the project, the conduct of the work or resolution of problems.

The Department shall furnish the following services and items:

1. Contract Related Documents: The Department shall furnish each Board member a copy of all Contract Documents, supplemental agreements, written instructions issued by the Department to the Contractor, or other documents pertinent to the performance of the Contract and necessary for the Board to perform their function. A copy of such pertinent documents must also be furnished to the Contractor.

2. Coordination and Services: The Department, in cooperation with the Contractor, will coordinate the operations of the Board. The Department, through the Project Engineer, will arrange or provide conference facilities at or near the Contract site and provide secretarial and copying services.

8-3.8.6 Basis of Payment: A per hearing cost of \$9,000 has been established by the Department for providing compensation for all members of the Dispute Review Board for participation in an actual hearing. The Board chairman will receive \$3,500 for participation in the hearing while the remaining two members will receive \$2,750 each. The Department and the Contractor will equally provide compensation to the Board for participation in an actual hearing. The Department will compensate the Contractor \$4,500 as its contribution to the hearing cost. Such payment will be full and complete compensation to the Board members for all expenses related to the hearing. This includes travel, accommodations, meals, pre- and post- hearing work, review of position papers and any rebuttals, conducting the hearing, drafting and issuance of recommendations, readdressing any requests for clarification. It is not intended for hearings to last longer than a single day, however, in some cases they may. Any additional time and/or compensation for a hearing would only be allowed upon prior written approval of the Department and the Contractor. If an additional day(s) is granted for the hearing, it will be at \$3,900 per day, payment of which is equally split between the Department and the Contractor. Payment shall be made by issuing a work order against contingency funds set aside for this Contract.

The Department will prepare and mail minutes and progress reports, will provide administrative services, such as conference facilities and secretarial services, and will bear the cost of these services. If the Board desires special services, such as legal consultation, accounting, data research, and the like, both parties must agree, and the costs will be shared by them as mutually agreed.

8-4 Limitations of Operations.

8-4.1 Night Work: During active nighttime operations, furnish, place and maintain lighting sufficient to permit proper workmanship and inspection. Use lighting with 5 ft-cd minimum intensity. Arrange the lighting to prevent interference with traffic or produce undue glare to property owners. Operate such lighting only during active nighttime construction activities. Provide a light meter to demonstrate that the minimum light intensity is being maintained.

Lighting may be accomplished by the use of portable floodlights, standard equipment lights, existing street lights, temporary street lights, or other lighting methods approved by the Engineer.

During active nighttime operations, furnish, place and maintain variable message signs to alert approaching motorists of lighted construction zones ahead. Operate the variable message signs only during active construction activities.

Include compensation for lighting for night work in the Contract prices for the various items of the Contract. Take ownership of all lighting equipment for night work.

8-4.1.1 Additional Requirements for Night Work Along Coastal Roads: The project is located adjacent to sea turtle nesting habitat. Direct all work zone lighting away from the beach to avoid illumination of or direct visibility from the beach. Shield luminaires to avoid lighting areas outside of the immediate construction area.

8-4.2 Sequence of Operations: Do not open up work to the prejudice of work already started. The Engineer may require the Contractor to finish a section on which work is in progress before starting work on any additional section.

8-4.3 Interference with Traffic: At all times conduct the work in such manner and in such sequence as to ensure the least practicable interference with traffic. Operate all vehicles and other equipment safely and without hindrance to the traveling public. Park all private vehicles outside the clear zone. Place materials stored along the roadway so as to cause no obstruction to the traveling public as possible.

Where existing pavement is to be widened and stabilizing is not required, prevent any open trench from remaining after working hours by scheduling operations to place the full thickness of widened base by the end of each day. Do not construct widening strips simultaneously on both sides of the road, except where separated by a distance of at least 1/4 mile along the road and where either the work of excavation has not been started or the base has been completed.

8-4.4 Coordination with other Contractors: Sequence the Work and dispose of materials so as not to interfere with the operations of other Contractors engaged upon adjacent work; coordinate the Work, including the placement of work zone signs and temporary traffic control devices, to that of others in a proper manner, in accordance with the spirit of the Contract Documents; and perform the work in the proper sequence in relation to that of other Contractors; all as may be directed by the Engineer.

Each Contractor is responsible for any damage done by it or its agents to the adjoining work being performed by another Contractor.

8-4.5 Drainage: Conduct the operations and maintain the work in such condition to provide adequate drainage at all times. Do not obstruct existing functioning storm sewers, gutters, ditches, and other run-off facilities.

8-4.6 Fire Hydrants: Keep fire hydrants on or adjacent to the highway accessible to fire apparatus at all times, and do not place any material or obstruction within 15 feet of any fire hydrant.

8-4.7 Protection of Structures: Do not operate heavy equipment close enough to pipe headwalls or other structures to cause their displacement.

8-4.8 Fencing: Erect permanent fence as a first order of business on all projects that include fencing where the Engineer determines that the fencing is necessary to maintain the security of livestock and other animals on adjacent property, or for protection of pedestrians who are likely to gain access to the project from adjacent property. Secure the right-of-way on Limited Access Facilities at all times by a fence, either temporary or permanent, that meets the height of the existing fence or the height required in the Contract.

8-4.9 Contaminated Materials: When the construction operations encounter or expose any abnormal condition that may indicate the presence of a contaminated material, discontinue such operations in the vicinity of the abnormal condition and notify the Engineer immediately. Be alert for the presence of tanks or barrels; discolored or stained earth, metal, wood, ground water; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal as possible indicators of the presence of contaminated materials. Treat these conditions with extraordinary caution.

Make every effort to minimize the spread of any contaminated materials into uncontaminated areas.

Do not resume the construction operations in the vicinity of the abnormal conditions until so directed by the Engineer.

Dispose of the contaminated material in accordance with the requirements and regulations of any Local, State, or Federal agency having jurisdiction. Where the Contractor performs unforeseen work necessary to dispose of contaminated material, the Department will pay for this work as provided in 4-4.

The Department agrees to hold harmless and indemnify the Contractor for damages when the Contractor discovers or encounters contaminated materials or pollutants during the performance of services for the Department when the presence of such materials or pollutants were unknown or not reasonably discoverable. Such indemnification agreement is only effective if the Contractor immediately stops work and notifies the Department of the contaminated material or pollutant problem.

Such indemnification agreement is not valid for damages resulting from the Contractor's willful, wanton, or intentional conduct or the operations of Contaminated and Hazardous Material Contractors.

This Contract may require the removal and special disposal of mercury-containing devices.

Contact the District 3 Contamination Coordinator, at (850)330-1511 for information relating to the identification and proper disposal of these hazardous waste materials.

Include payment for the removal and disposal of mercury-containing devices in the payment for the related Contract items.

8-5 Qualifications of Contractor's Personnel.

Provide competent, careful, and reliable superintendents, foremen, and workmen. Provide workmen with sufficient skill and experience to properly perform the work assigned to them. Provide workmen engaged on special work, or skilled work, such as bituminous courses or mixtures, concrete bases, pavements, or structures, or in any trade, with sufficient experience in such work to perform it properly and satisfactorily and to operate the equipment involved. Provide workmen that shall make due and proper effort to execute the work in the manner prescribed in the Contract Documents, or the Engineer may take action as prescribed below.

The Design Build Firm is prohibited on the basis of conflict of interest from utilizing any Consultant to perform Quality Control services during the construction phase of this Project when the Consultant is under contract with the Department, or under a subcontract thereto, to perform services or work in any way pertaining to this Project. Prior to the Firm approving a Consultant for Quality Control services during the construction phase, the Firm shall submit to the Department a Certificate from the proposed Consultant certifying that no conflict of interest exists as prohibited hereunder.

Whenever the Engineer determines that any person employed by the Contractor is incompetent, unfaithful, intemperate, disorderly, or insubordinate, the Engineer will provide written notice and the Contractor shall discharge the person from the work. Do not employ any discharged person on the project without the written consent of the Engineer. If the Contractor fails to remove such person or persons, the Engineer may withhold all estimates that are or may become due, or suspend the work until the Contractor complies with such orders. Protect, defend, indemnify, and hold the Department, its agents, officials, and employees harmless from all claims, actions, or suite arising from such removal, discharge, or suspension of employees.

8-6 Temporary Suspension of Contractor's Operations.

8-6.1 Authority to Suspend Contractor's Operations: The Engineer has the authority to suspend the Contractor's operations, wholly or in part. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The Department may grant an extension of Contract time in accordance with 8-7.3.2 when determined appropriate in the Department's sole judgment.

No additional compensation or time extension will be paid or granted to the Contractor when the operations are suspended for the following reasons:

1. The Contractor fails to comply with the Contract Documents.
2. The Contractor fails to carry out orders given by the Engineer.
3. The Contractor causes conditions considered unfavorable for continuing

the Work.

Immediately comply with any suspension order. Do not resume operations until authorized to do so by the Engineer in writing. Any operations performed by the Contractor, and otherwise constructed in conformance with the provisions of the Contract, after the issuance of the suspension order and prior to the Engineer's authorization to resume operations will be at no cost to the Department. Further, failure to immediately comply with any suspension order will also constitute an act of default by the Contractor and is deemed sufficient basis in and of itself for the Department to declare the Contractor in default, in accordance with 8-9, with the exception that the Contractor will not have ten calendar days to correct the conditions for which the suspension was ordered.

8-6.1.1 State of Emergency: The Engineer has the authority to suspend the Contractor's operations, wholly or in part, pursuant to a Governor's Declaration of a State of Emergency. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The Department, at its sole discretion, may grant an extension of Contract Time and reimburse the Contractor for specific costs associated with such suspension. Further, in such instances, the Department's determination as to entitlement to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the Department's determination was without any reasonable factual basis.

8-6.2 Prolonged Suspensions: If the Engineer suspends the Contractor's operations for an indefinite period, store all materials in such manner that they will not obstruct or impede the traveling public unnecessarily or become damaged in any way. Take every reasonable precaution to prevent damage to or deterioration of the work performed. Provide suitable drainage of the roadway by opening ditches, shoulder drains, etc., and provide any temporary structures necessary for public travel through the project.

8-6.3 Permission to Suspend Contractor's Operations: Do not suspend operations or remove equipment or materials necessary for completing the work without obtaining the Engineer's written permission. Submit all requests for suspension of operations in writing to the Engineer, and identify specific dates to begin and end the suspension. The Contractor is not entitled to any additional compensation for suspension of operations during such periods.

8-6.4 Suspension of Contractor's Operations-Holidays and Special Events: Unless the Contractor submits a written request to work during one or more days of a Holiday or Special Event at least ten days in advance of the beginning date of the Holiday or Special event and receives written approval from the Engineer, the Contractor shall not work on the following

days: Martin Luther King, Jr. Day; Memorial Day; the Saturday and Sunday immediately preceding Memorial Day; Independence Day; Independence Day (Observed); Labor Day; the Friday, Saturday, and Sunday immediately preceding Labor Day; Veterans Day; Veterans Day (Observed); the Wednesday immediately preceding Thanksgiving; Thanksgiving Day; the Friday, Saturday and Sunday immediately following Thanksgiving Day; December 24 through January 2, inclusive; and Special Events noted in the RFP. Contract Time will be charged during these Holiday and Special Event periods regardless of whether or not the Contractor's operations have been suspended. Contract time will be adjusted in accordance with 8-7.3.2. The Contractor is not entitled to any additional compensation beyond any Contract Time adjustment for suspension of operations during such Holiday and Special Event periods.

During such suspensions, remove all equipment and materials from the clear zone, except those required for the safety of the traveling public and retain sufficient personnel at the job site to properly meet the requirements of Sections 102 and 104. The Contractor is not entitled to any additional compensation for removal of equipment from clear zones or for compliance with Section 102 and Section 104 during such holiday periods.

8-7 Computation of Contract Time.

8-7.1 General: Perform the contracted work fully, entirely, and in accordance with the Contract Documents within the Contract Time specified in the proposal, or as may be extended in accordance with the provisions herein below.

8-7.2 Date of Beginning of Contract Time: The date on which Contract Time begins is the date the Notice to Proceed is issued by the Department.

8-7.3 Adjusting Contract Time:

8-7.3.1 Increased Work: The Department may grant an extension of Contract Time when it increases the Contract amount due to adding new work or providing for unforeseen work. The Department will base the consideration for granting an extension of Contract Time on the extent that the time normally required to complete the additional designated work delays the Contract completion schedule.

8-7.3.2 Contract Time Extensions: The Department may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The Department may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the Department to fulfill an obligation under the Contract results in delays to the controlling items of work, the Department will consider such delays as a basis for granting a time extension to the Contract.

Whenever the Engineer suspends the Contractor's operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to a controlling item of work due to such suspension. The Department will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor.

The Department does not include an allowance for delays caused by the effects of inclement weather or suspension of Contractor's operations as defined in 8-6.4, in establishing Contract Time. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a bimonthly or monthly basis. The Engineer will not require the Contractor to submit a request for additional time due to the effects of weather.

The Department will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil

conditions or suspension of operations as defined in 8-6.4 that prevent the Contractor from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or
2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

No additional compensation will be made for delays caused by the effects of inclement weather.

The Department may consider the delays in delivery of materials or component equipment that affect progress on a controlling item of work as a basis for granting a time extension if such delays are beyond the control of the Contractor or supplier. Such delays may include an area-wide shortage, an industry-wide strike, or a natural disaster that affects all feasible sources of supply. In such cases, the Contractor shall submit substantiating letters from a representative number of manufacturers of such materials or equipment clearly confirming that the delays in delivery were the result of an area-wide shortage, an industry-wide strike, etc. No additional compensation will be made for delays caused by delivery of materials or component equipment.

The Department will not consider requests for time extension due to delay in the delivery of custom manufactured equipment such as traffic signal equipment, highway lighting equipment, etc., unless the Contractor submits documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. No additional compensation will be paid for delays caused by delivery of custom manufactured equipment.

The Department will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

1. Delays are the result of either utility work that was not detailed in the Plans, or utility work that was detailed in the Plans but was not accomplished in reasonably close accordance with the schedule included in the Contract Documents.
2. Utility work actually affected progress toward completion of controlling work items.
3. The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

As a condition precedent to an extension of Contract Time the Contractor must submit to the Engineer:

A preliminary request for an extension of Contract Time must be submitted in writing to the Engineer within ten calendar days after the commencement of a delay to a controlling item of work. If the Contractor fails to submit this required preliminary request for an extension of Contract Time, the Contractor fully, completely, absolutely and irrevocably waives any entitlement to an extension of Contract Time for that delay. In the case of a

continuing delay only a single preliminary request for an extension of Contract Time will be required. Each such preliminary request for an extension of Contract Time shall include as a minimum the commencement date of the delay, the cause of the delay, and the controlling item of work affected by the delay.

Furthermore, the Contractor must submit to the Engineer a request for a Contract Time extension in writing within 30 days after the elimination of the delay to the controlling item of work identified in the preliminary request for an extension of Contract Time. Each request for a Contract Time extension shall include as a minimum all documentation that the Contractor wishes the Department to consider related to the delay, and the exact number of days requested to be added to Contract Time. If the Contractor contends that the delay is compensable, then the Contractor shall also be required to submit with the request for a Contract Time extension a detailed cost analysis of the requested additional compensation in accordance with 4-3 and 5-12. If the Contractor fails to submit this required request for a Contract Time extension, with or without a detailed cost analysis, depriving the Engineer of the timely opportunity to verify the delay and the costs of the delay, the Contractor waives any entitlement to an extension of Contract Time or additional compensation for the delay.

Upon timely receipt of the preliminary request of Contract Time from the Contractor, the Engineer will investigate the conditions, and if it is determined that a controlling item of work is being delayed for reasons beyond the control of the Contractor the Engineer will take appropriate action to mitigate the delay and the costs of the delay. Upon timely receipt of the request for a Contract Time extension the Engineer will further investigate the conditions, and if it is determined that there was an increase in the time or the cost of performance of the controlling item of work beyond the control of the Contractor, then an adjustment of Contract Time will be made, and a monetary adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly.

The existence of an accepted schedule, including any required update(s), as stated in 8-3.2, is a condition precedent to the Contractor having any right to the granting of an extension of contract time or any monetary compensation arising out of any delay. Contractor failure to have an accepted schedule, including any required update(s), for the period of potential impact, or in the event the currently accepted schedule and applicable updates do not accurately reflect the actual status of the project or fail to accurately show the true controlling or non-controlling work activities for the period of potential impact, will result in any entitlement determination as to time or money for such period of potential impact being limited solely to the Department's analysis and identification of the actual controlling or non-controlling work activities. Further, in such instances, the Department's determination as to entitlement as to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the Department's determination was without any reasonable factual basis.

8-8 Failure of Contractor to Maintain Satisfactory Progress.

8-8.1 General: Pursue the work to completion. Section 337.16 of the Florida Statutes establishes certain requirements pertaining to the suspension or revocation of a Contractor's Certificate of Qualification because of delinquency on a previously awarded Contract.

8-8.2 Regulations Governing Suspension for Delinquency:

1. A Contractor is delinquent when the Contract Time for performing the work has expired, and the Contractor has not completed the Contract work.

2. Once the Department determines that the Contractor is delinquent, the Department will give the Contractor written notice of intent to suspend the Contractor's Certificate of Qualification. If the Contractor disagrees with the delinquency, the Contractor shall file a request for an administrative hearing with the Clerk of Agency Proceedings within ten days of receipt of the notice of intent to suspend. If the Contractor does not file a request, the Department will make the suspension conclusive and final. The request for hearing is filed when the Contractor delivers it to, and it is received by, the Clerk of Agency Proceedings, Mail Station 58, 562 Haydon Burns Building, 605 Suwannee Street, Tallahassee, Florida 32399-0450.

3. If the Contractor files a request for a hearing, the Department will schedule the hearing within 30 days of the hearing officer's receipt of the request.

4. The Department will continue the period of suspension of the Contractor's Certificate of Qualification until the Contractor is no longer delinquent. If the Contractor requests an administrative hearing, the Department's final order, depending on the outcome of the hearing, will set forth the time period of suspension for the number of days the Department determines that the Contractor was delinquent, even if the Contractor cures the delinquency during the pendency of the administrative proceedings.

5. During the period of suspension of the Contractor's Certificate of Qualification, the Department will not allow the Contractor and its affiliates to bid on any Department Contract, regardless of dollar amount, and will not approve the Contractor as a subcontractor on any Department contract.

6. The Department may grant extensions of time during the prosecution of the work as allowed under these Specifications regardless of the Contractor's delinquency status.

8-9 Default and Termination of Contract.

8-9.1 Determination of Default: The following acts or omissions constitute acts of default and, except as to subparagraphs (9 and 11), the Department will give notice, in writing, to the Contractor and his surety for any delay, neglect or default, if the Contractor:

1. fails to begin the work under the Contract within the time specified in the Notice to Proceed;
2. fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure prompt completion of the Contract;
3. performs the work unsuitably, or neglects or refuses to remove materials or to perform anew such work that the Engineer rejects as unacceptable and unsuitable;
4. discontinues the prosecution of the work, or fails to resume discontinued work within a reasonable time after the Engineer notifies the Contractor to do so;
5. becomes insolvent or is declared bankrupt, or files for reorganization under the bankruptcy code, or commits any act of bankruptcy or insolvency, either voluntarily or involuntarily;
6. allows any final judgment to stand against him unsatisfied for a period of ten calendar days;
7. makes an assignment for the benefit of creditors;
8. fails to comply with Contract requirements regarding minimum wage payments or EEO requirements;
9. fails to comply with the Engineer's written suspension of work order within the time allowed for compliance and which time is stated in that suspension of work order; or

10. for any other cause whatsoever, fails to carry on the work in an acceptable manner, or if the surety executing the bond, for any reasonable cause, becomes unsatisfactory in the opinion of the Department.

11. fails to comply with 3-9.

For a notice based upon reasons stated in subparagraphs (1) through (8) and (10): if the Contractor, within a period of ten calendar days after receiving the notice described above, fails to correct the conditions of which complaint is made, the Department will, upon written certificate from the Engineer of the fact of such delay, neglect, or default and the Contractor's failure to correct such conditions, have full power and authority, without violating the Contract, to take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

If the Contractor, after having received a prior notice described above for any reason stated in subparagraph (2), (3), (4), (5), (6) or (8), commits a second or subsequent act of default for any reason covered by the same subparagraph (2), (3), (4), (5), (6) or (8) as stated in the prior notice, and regardless whether the specific reason is the same, then, regardless of whether the Contractor has cured the deficiency stated in that prior notice, the Department will, upon written certificate from the Engineer of the fact of such delay, neglect or default and the Contractor's failure to correct such conditions, have full power and authority, without any prior written notice to the Contractor and without violating the Contract, to take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

Regarding subparagraph (9), if the Contractor fails to comply with the Engineer's written suspension of work order within the time allowed for compliance and which time is stated in that suspension of work order, the Department will, upon written certificate from the Engineer of the fact of such delay and the Contractor's failure to correct that condition, have full power and authority, without violating the Contract, to immediately take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

Regarding subparagraph (11), if the Contractor fails to comply with 3-9, the Department will have full power and authority, without violating the Contract, to immediately take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

The Department has no liability for anticipated profits for unfinished work on a Contract that the Department has determined to be in default.

Notwithstanding the above, the Department shall have the right to declare the Contractor (or its "affiliate") in default and immediately terminate this Contract, without any prior notice to the Contractor, in the event the Contractor (or its "affiliate") is at any time "convicted" of a "contract crime," as these terms are defined in Section 337.165(1), Florida Statutes. The Department's right to default the Contractor (or its "affiliate") for "conviction" of a "contract crime" shall extend to and is expressly applicable to any and all Department Contracts that were either advertised for bid; for which requests for proposals or letters of interest were requested; for which an intent to award was posted or otherwise issued; or for which a Contract was entered into, after the date that the underlying or related criminal indictment, criminal information or other criminal charge was filed against the Contractor (or its "affiliate") that resulted in the "conviction." In the event the Department terminates this Contract for this reason, the Contractor shall hereby forfeit any claims for additional compensation, extra time, or anticipated profits. The Contractor shall only be paid for any completed work up to the date of

termination. Further, the Contractor shall be liable for any and all additional costs and expenses the Department incurs in completing the Contract work after such termination.

8-9.2 Termination of Contract for Convenience: The Department may terminate the entire Contract or any portion thereof, if the Secretary determines that a termination is in the Department's interest. The Secretary will deliver to the Contractor a Written Notice of Termination specifying the extent of termination and the effective date.

When the Department terminates the entire Contract, or any portion thereof, before the Contractor completes all items of work in the Contract, the Department will make payment for the actual number of units or items of work that the Contractor has completed, at the Contract unit price, and according to the formulas and provisions set forth in 4-3.2 for items of work partially completed, and such payments will constitute full and complete compensation for such work or items. No payment of any kind or amount will be made for items of work not started. The Department will not consider any claim for loss of anticipated profits, or overhead of any kind (including home office and jobsite overhead or other indirect impacts) except as provided in 4-3.2 for partially completed work.

The Department will consider reimbursing the Contractor for actual cost of mobilization (when not otherwise included in the Contract) including moving equipment to the job where the volume of the work that the Contractor has completed is too small to compensate the Contractor for these expenses under the Contract unit prices.

The Department may purchase at actual cost acceptable materials and supplies procured for the work, that the Department has inspected, tested, and approved and that the Contractor has not incorporated in the work. Submit the proof of actual cost, as shown by receipted bills and actual cost records, at such points of delivery as the Engineer may designate.

Termination of a Contract or a portion thereof, under the provisions of this Subarticle, does not relieve the Contractor or the surety of its responsibilities for the completed portion of the Contract or its obligations for and concerning any just claims arising out of the work performed.

All Contractor claims for additional payment, due to the Department's termination of the entire Contract or any portion thereof, must meet the requirements of 5-12.

8-9.3 Completion of Work by Department: Upon declaration of default, the Department will have full power to appropriate or use any or all suitable and acceptable materials and equipment on the site and may enter into an agreement with others to complete the work under the Contract, or may use other methods to complete the work in an acceptable manner. The Department will charge all costs that the Department incurs because of the Contractor's default, including the costs of completing the work under the Contract, against the Contractor. If the Department incurs such costs in an amount that exceeds the sum that would have been payable under the Contract, then the Contractor and the surety shall be liable and shall pay the Department the amount of the excess.

If, after the ten day notice period and prior to any action by the Department to otherwise complete the work under the Contract, the Contractor establishes his intent to prosecute the work in accordance with the Department's requirements, then the Department may allow the Contractor to resume the work, in which case the Department will deduct from any monies due or that may become due under the Contract, any costs to the Department incurred by the delay, or from any reason attributable to the delay.

8-10 Liquidated Damages for Failure to Complete the Work.

8-10.1 Highway Code Requirements Pertaining to Liquidated Damages:

Section 337.18, paragraph (2) of the Florida Statutes, requires that the Department adopt regulations for the determination of default and provides that the Contractor pay liquidated damages to the Department for any failure of the Contractor to complete the Contract work within the Contract Time. These Code requirements govern, and are herewith made a part of the Contract.

8-10.2 Amount of Liquidated Damages: Applicable liquidated damages are the amounts established in the following schedule:

Original Contract Amount	Daily Charge Per Calendar Day
\$50,000 and under.....	\$1,015
Over \$50,000 but less than \$250,000.....	\$1,045
\$250,000 but less than \$500,000	\$1,170
\$500,000 but less than \$2,500,000.....	\$1,690
\$2,500,000 but less than \$5,000,000.....	\$2,579
\$5,000,000 but less than \$10,000,000.....	\$3,756
\$10,000,000 but less than \$15,000,000.....	\$4,344
\$15,000,000 but less than \$20,000,000.....	\$5,574
\$20,000,000 and over.....	\$10,203 plus 0.00005 of any amount over \$20 million (Round to nearest whole dollar)

8-10.3 Determination of Number of Days of Default: For all Contracts, regardless of whether the Contract Time is stipulated in calendar days or working days, the Engineer will count default days in calendar days.

8-10.4 Conditions under which Liquidated Damages are Imposed: If the Contractor or, in case of his default, the surety fails to complete the work within the time stipulated in the Contract, or within such extra time that the Department may have granted then the Contractor or, in case of his default, the surety shall pay to the Department, not as a penalty, but as liquidated damages, the amount so due as determined by the Code requirements, as provided in 8-10.2.

8-10.5 Right of Collection: The Department has the right to apply, as payment on such liquidated damages, any money the Department owes the Contractor.

8-10.6 Allowing Contractor to Finish Work: The Department does not waive its right to liquidated damages due under the Contract by allowing the Contractor to continue and to finish the work, or any part of it, after the expiration of the Contract Time.

8-10.7 Completion of Work by Department: In the case of a default of the Contract and the completion of the work by the Department, the Contractor and his surety are liable for the liquidated damages under the Contract, but the Department will not charge liquidated damages for any delay in the final completion of the Department’s performance of the work due to any unreasonable action or delay on the part of the Department.

8-11 Release of Contractor’s Responsibility.

The Department considers the Contract complete when the Contractor has completed all work and the Department has accepted the work. The Department will then release the Contractor from further obligation except as set forth in his bond, and except as provided in 5-13.

8-12 Damage Recovery.

8-12.1 Damages Suffered by Third Parties: In addition to the damages provided for in 8-10.2 and pursuant to Section 337.18 of the Florida Statutes, when the Contractor fails to complete the work within the Contract Time the Department may recover from the Contractor amounts that the Department pays for damages suffered by third parties unless the failure to timely complete the work was caused by the Department’s act or omission.

8-12.2 Damage Recovery/User Costs: A damage recovery/user cost will be assessed against the Contractor if all lanes are not open to traffic during the times as shown in the Traffic Control Plans. Costs will be assessed beginning at the appropriate time as shown in the Traffic Control Plans and continue until all lanes are open as recorded by the Engineer. This assessment will be in the following amounts:

First 30 minutes and under: \$8,200.00

Each additional 30 minute period or portion thereof: \$4,100.00

Such costs will not exceed \$30,000.00 over a 24 hour period.

At the discretion of the Engineer, damage recovery/user cost will not be assessed for failure to open traffic lanes if such cause is beyond the control of the Contractor, i.e., catastrophic events, accidents not related or caused by the Contractor’s operations.

The Department will have the right to apply as payment on such damages any money which is due to the Contractor by the Department.

8-13 Incentive - Disincentive.

The Department desires to expedite construction on this Contract to minimize the inconvenience to the traveling public and to reduce the time of construction. In order to achieve this, an incentive - disincentive provision is established for the Contract. The total “incentive payment” or disincentive deduction shall not exceed \$5,000,000.00.

The Department will pay the Contractor an “incentive payment” in the amount of \$ 20,000, for each calendar day the actual completion date precedes the Original Contract Time and subject to the conditions precedent set forth below. The term “Original Contract Time” as used in this Article will mean the number of calendar days established for completion of the work in the Contract on the date the Contract was executed. The term “calendar day” as used in this Article will mean every day shown on the calendar. Calendar days will be consecutively counted from commencement of Contract Time regardless of weather, weekends, holidays, suspensions of Contractor’s operations, delays or other events as described herein. For purposes of the calculation and the determination of entitlement to the “incentive payment” stated above, the Original Contract Time will not be adjusted for any reason, cause or circumstance whatsoever, regardless of fault, save and except in the instance of a catastrophic event (i.e., hurricane or a declared state of emergency).

The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of suppliers, subcontractors or other contractors, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of Contractor’s operations, or other such events, forces or factors sometimes experienced in highway construction work. Such delays or events and their potential impacts on performance by the Contractor are specifically

contemplated and acknowledged by the parties in entering into this Contract, and shall not extend the Original Contract Time for purposes of calculation of the “incentive payment” set forth above. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Contractor’s work to overcome or absorb such delays or events in an effort to complete the Contract prior to expiration of the Original Contract Time, regardless of whether the Contractor successfully does so or not, shall be the sole responsibility of the Contractor in every instance.

In the event of a catastrophic event (i.e., hurricane or a declared state of emergency) directly and substantially affecting the Contractor’s operations on the Contract, the Contractor and the Department shall agree as to the number of calendar days to extend the Original Contract Time so that such extended Original Contract Time will be used in calculation of the “incentive payment”. In the event the Contractor and Department are unable to agree to the number of Calendar Days to extend the Original Contract Time, the Department will unilaterally determine the number of calendar days to extend the Original Contract Time reasonably necessary and due solely to such catastrophic event and the Contractor shall have no right whatsoever to contest such determination, save and except that the Contractor establishes that the number of calendar days determined by the Department were arbitrary or without any reasonable basis.

However, notwithstanding anything above to the contrary, upon the Contractor’s written request being made directly to the Chief Engineer, with copies provided to both the Resident Construction Engineer and the District Construction Engineer, the Department reserves unto the Chief Engineer, in his sole and absolute discretion, according to the parameters set forth below, the authority to make a determination to either fully enforce the above provisions with no modification, modify the “Original Contract Time” by moving it, or both modify the “Original Contract Time” by moving it and also modify the “incentive amount” by reducing it.

No modification of this “Incentive-Disincentive” provision will be considered by the Chief Engineer for any impacts, whatsoever, beyond the reasonable control of the Contractor, for which the effect results in a time extension of less than 15% of the time remaining in the period from the first day of occurrence of such impact to the expiration of the “Original Contract Time”. Furthermore, as to any such impact, for which the effect results in a time extension of 15% or more of the time remaining in the period from the first day of occurrence of such impact to the expiration of the “Original Contract Time,” no modification of this “Incentive-Disincentive” provision will be considered by the Chief Engineer unless the Contractor clearly establishes that it has continuously from the beginning of the project aggressively, efficiently and effectively pursued the achievement of the “incentive payment”. This would include the utilization of any and all reasonably available means and methods to overcome all impacts and accelerate the work so as to still achieve the “incentive payment”, and that, but for this impact, the Contractor would have otherwise earned the “incentive payment” provided in the original Contract. Also, to the extent the request is not submitted in writing to the Chief Engineer within not less than twenty (20) calendar days prior to the expiration of the “Original Contract Time,” the Contractor must also continue to aggressively, efficiently, and effectively pursue the completion of the “Incentive-Disincentive” work. This would include the utilization of any and all reasonably available means and methods to overcome all impacts and accelerate the work, until a determination is made by the Chief Engineer or twenty (20) calendar days has expired since such written request was received by the Chief Engineer. There shall be no right of any

kind on behalf of the Contractor to challenge or otherwise seek review or appeal in any forum, of any determination made by the Chief Engineer under this provision.

The Contractor shall have no rights under the Contract to make any claim arising out of this incentive payment provision except as is expressly set forth in this Article.

As conditions precedent to the Contractor's entitlement to any "incentive payment" the Contractor must:

(1) Deliver in-hand to the Department any and all claims, in full accordance with 5-12.3 and subject to the limitations therein, no later than 60 calendar days after completion of the work on which such claim is based and tentatively schedule a Disputes Review Board hearing while awaiting Department review and response to any such claim. Furthermore, as to any such 5-12.3 claims for which the Disputes Review Board has determined entitlement, but both parties have not reached an agreement on monetary compensation prior to final acceptance, and also as to those 5-12.3 claims pending at final acceptance, tentatively schedule a Disputes Review Board hearing within 60 calendar days after the final acceptance date while awaiting Department review and response to any such claim. The sole forum for final determination as to both entitlement and amount of monetary compensation, if not otherwise mutually resolved or otherwise agreed, shall be the Disputes Review Board.

(2) Actually complete the Contract and obtain final acceptance by the Department prior to expiration of the Original Contract Time.

(3) No later than 60 days after final acceptance by the Department, the Contractor must either (a) elect to be paid the "incentive payment" pursuant to (4) below, or (b) notify the Department in writing that the Contractor is electing to be paid the "incentive payment" and is reserving one or more outstanding 5-12.3 claims for final and fully binding determination by the Disputes Review Board. The determinations of the Disputes Review Board as to any such 5-12.3 claims will be fully binding on both the Department and the Contractor, with no right of any kind of challenge, review or appeal, in any forum, by either party. Further, under (b) herein, any previous Disputes Review Board determinations on any such 5-12.3 claims issues shall then be fully binding and not subject to reconsideration by the Disputes Review Board, regardless of whether either party has previously rejected or otherwise not accepted one or more such recommendations at the time such were rendered.

(4) The Contractor shall notify the Department in writing, within 60 days after final acceptance of the Contract by the Department, that the Contractor elects to be paid the "incentive payment" which the Contractor is eligible to be paid based on the actual final acceptance date, and such written notice shall constitute a full and complete waiver, release and acknowledgment of satisfaction by the Contractor of any and all claims, causes of action, issues, demands, disputes, matters or controversies, of any nature or kind whatsoever, known or unknown, against the Department, its employees, officers, agents, representatives, consultants, and their respective employees, officers and representatives, the Contractor has or may have, including, but not limited to, work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of suppliers or subcontractors or other contractors, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of the Contractor's operations, extended or unabsorbed home office or job site overhead, lump sum maintenance of traffic adjustments, lost profits, prime mark-up on subcontractor work, acceleration costs, any and all direct and indirect costs, any other adverse

impacts, events, conditions, circumstances or potential damages, on or pertaining to, or as to or arising out of the Contract. This waiver, release and acknowledgment of satisfaction shall be all-inclusive and absolute, save and except any routine Department final estimating quantity adjustments.

Should the Contractor fail to actually complete the Contract and obtain final acceptance by the Department prior to expiration of the Original Contract Time, or should the Contractor, having timely completed the Contract and obtained final acceptance by the Department prior to expiration of the Original Contract Time but having failed to timely request the “incentive payment” for any reason, and including but not limited to the Contractor choosing not to either reserve one or more outstanding 5-12.3 claims for final and fully binding determination by the Disputes Review Board as set forth in (3)(b) above, or to fully waive, release and acknowledge satisfaction as set forth in (4) above, the Contractor shall have no right to any payment whatsoever under this Article. Notwithstanding the Contractor’s election or non-election of the “incentive payment” under this provision, the disincentive provision applies to all circumstances where the work in the Contract is not finally accepted by the Allowable Contract Time.

Completion and acceptance of the Contract for purposes of this Article shall be in accordance with 5-11.

Should the Contractor fail to complete the Contract on or before expiration of the Allowable Contract Time, as adjusted in accordance with the provisions of 8-7.3, the Department shall deduct \$ 20,000 for each calendar day completion exceeds the Allowable Contract Time, from the monies otherwise due the Contractor. The term “Allowable Contract Time” as used in this Article shall mean the Original Contract Time plus adjustments pursuant to 8-7.3. This deduction shall be the disincentive for the Contractor’s failing to timely complete the Contract. Article 8-10 relating to liquidated damages remains in effect and is applicable.

In the event the Contractor elects to exercise this “incentive payment” provision, should this provision conflict with any other provision of the Contract, the Contract shall be interpreted in accordance with this provision

SECTION 9 MEASUREMENT AND PAYMENT

9-1 Measurement of Quantities.

9-1.1 Measurement Standards: Measure all work completed under the Contract in accordance with the United States Standard Measures.

9-1.2 Method of Measurements: Take all measurements horizontally or vertically.

9-1.3 Determination of Pay Areas: Not applicable.

9-1.4 Construction Outside Authorized Limits: Not applicable.

9-1.5 Truck Requirements: Not applicable.

9-1.6 Ladders and Instrument Stands for Bridge Projects: Not applicable.

9-1.7 Determination of Pay Reduction: In measurement of areas of work, where pay reductions are to be assessed, the Engineer will use the lengths and/or widths in the calculations based upon station to station dimensions in the Contracts Documents; the station to station dimensions actually constructed within the limits designated by the Engineer; or the final dimensions measured along the final surface of the completed work within the neat lines shown

in the Contract Documents or designated by the Engineer. The Engineer will use the method or combination of methods of measurement, which will reflect with reasonable accuracy, the actual surface area of the finished work as the Engineer determines.

Failure on the part of the Contractor to construct any item of work to plan or authorized dimensions within the specification tolerances will result in: reconstruction to acceptable tolerances at no additional cost to the Department; acceptance at no pay; or, acceptance at reduced pay, all at the discretion of the Engineer.

9-2 Scope of Payments.

9-2.1 Items Included in Payment: Accept the compensation as provided in the Contract Documents as full payment for furnishing all materials and for performing all work contemplated and embraced under the Contract; also for all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its final acceptance; also for all other costs incurred under the provisions of Division I.

The Contract Lump Sum Price will include overhead, profits, and direct and indirect costs required to complete the project except as described below.

9-2.1.1 Fuel: On Contracts with an original Contract Time in excess of 120 calendar days, the Department will make price adjustments on each applicable progress estimate to reflect increases or decreases in the price of diesel from those in effect during the month in which bids were received. The Contractor will not be given the option of accepting or rejecting these adjustments. Price adjustments for fuel will be made only when the current fuel price (CFP) varies by more than 5% from the price prevailing in the month when bids were received (BFP), and then only on the portion that exceeds 5%.

The Contractor will certify the number of gallons of fuel (diesel) used on this Contract during the period represented by each Contractor's Certified Monthly Estimate.

Price adjustments will be based on the monthly bulk average price for diesel as derived by the Department. These average indexes shall be determined by averaging bulk fuel prices on the first day of each month as quoted by major oil companies that are reasonably expected to furnish fuel for projects in the State of Florida. Average price indices for diesel will be available on the State Construction Office website before the 15th of each month at the following URL: <https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm>.

Payment on progress estimates will be adjusted to reflect adjustments in the prices for fuel in accordance with the following:

When fuel prices have decreased between month of bid and month of this progress estimate:

$A_i = F_i (P_i - 0.95 P_b)$ during a period of decreasing prices.

A_i = Total dollar amount - positive or negative - of the cost adjustment for fuel used by the Contractor during the month "i."

F_i = Total gallons calculated as being used during the month.

P_i = Average price for fuel prevailing during month "i."

P_b = Average price for fuel prevailing during the month "b" when bids were received on this Contract.

When fuel prices have increased between month of bid and month of this progress estimate:

$A_i = F_i (P_i - 1.05 P_b)$ during a period of increasing prices.

A_i = Total dollar amount - positive or negative - of the cost adjustment for fuel used by the Contractor during the month "i."

F_i = Total gallons calculated as being used during the month.

P_i = Average price for fuel prevailing during month "i."

P_b = Average price for fuel prevailing during the month "b" when bids were received on this Contract.

Gallons will be derived only from the established Standard Fuel Factor list posted on the State Construction Office website at the following URL:

<https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm>.

The Department will provide a computer application that will calculate and print the gallons of diesel for the items that these factors represent. The Contractor will attach this worksheet and record these gallons on the Contractor's Certified Monthly Estimate as required in 9-11.

Payment will be based on the quantities shown on the Contractor's Certified Monthly Estimate on all items for which established standard fuel factors are posted on the State Construction Office website at the following URL:

<https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm>.

Payment will be made on the current progress estimate to reflect the index difference at the time Work was performed. The total price adjustment for the Contract is limited to the pay quantity as specified in 9-2.3.2.

Adjustments will be paid or charged to the Prime Contractor only. Any Contractor receiving an adjustment under this provision shall distribute the proper proportional part of such adjustment to subcontractors who perform applicable Work.

9-2.1.2 Bituminous Material: Prepare a Contractor's Certification of Quantities, using the Department's current approved form for Superpave Asphalt Base, Turnout Construction (Asphalt), Asphalt Treated Permeable Base, Superpave Asphaltic Concrete, Miscellaneous Asphalt Pavement, Asphalt Concrete Friction Course, and Asphalt Membrane Interlayer items. On Contracts having an original Contract Time of more than 365 calendar days, or more than 5,000 tons of asphalt concrete, the Department will adjust the bid unit price for bituminous material, excluding cutback and emulsified asphalt to reflect increases or decreases in the Asphalt Price Index (API) of bituminous material from that in effect during the month in which bids were received. The Contractor will not be given the option of accepting or rejecting this adjustment. Bituminous adjustments will be made only when the current API (CAPI) varies by more than 5% of the API prevailing in the month when bids were received (BAPI), and then only on the portion that exceeds 5%.

The Department will determine the API for each month by averaging quotations in effect on the first day of the month at all terminals that could reasonably be expected to furnish bituminous material to projects in the State of Florida.

The API will be available on the State Construction Office website before the 15th of each month at the following URL: <https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm>.

The Department will provide a computer application that will calculate and print the number of gallons of bituminous material for the items that these factors represent. The Contractor will attach this worksheet and record these gallons on the Contractor's Certified Monthly Estimate as required in 9-11.

Payment on progress estimates will be adjusted to reflect adjustments in the prices for bituminous materials in accordance with the following:

$$\text{\$ Adjustment} = (\text{ID})(\text{gallons})$$

Where ID = Index Difference = $[\text{CAPI} - 0.95(\text{BAPI})]$ when the API has decreased between the month of bid and month of this progress estimate.

Where ID = Index Difference = $[\text{CAPI} - 1.05(\text{BAPI})]$ when the API has increased between the month of bid and month of this progress estimate.

For all asphalt concrete, the number of gallons will be determined assuming a mix design with 6.25% liquid asphalt weighing 8.58 pounds per gallon.

For asphalt treated permeable base, the number of gallons will be determined assuming a mix design with 3% liquid asphalt weighing 8.58 pounds per gallon.

Payment will be made on the current progress estimate to reflect the index difference at the time work was performed. The total price adjustment for the Contract is limited to the pay quantity as specified in 9-2.3.2.

Adjustments will be paid or charged to the Prime Contractor only. Any Contractor receiving an adjustment under this provision shall distribute the proper proportional part of such adjustment to subcontractors who perform applicable work.

9-2.2 Non-Duplication of Payment: Not applicable.

9-2.3 General Basis of Adjusted Pay:

9-2.3.1 Deficiencies: When a deficiency occurs that results in the acceptance of a material at a reduced payment level as defined in these Specifications, the Engineer will apply a reduction in payment for the material in question based on the unit prices as determined using the six-month State wide pay item averages. The dates will be the six months prior to the letting date for this Contract.

9-2.3.2 Asphalt Pay Adjustments: Asphalt pay quantity adjustments apply to asphalt items listed in Sections 234, 334, 337, and 339.

For each item, the pay quantity will be based on the quantity placed on the project, limited to 105% of the adjusted quantity for the item. The adjusted quantity will be determined by dividing the sum of the quantities from the plan summary boxes (including any Engineer approved quantity revisions) by the design G_{mm} stated in 334-1.4 (design G_{sb} stated in 337-8.2 for FC-5), and multiplying by the tonnage-weighted average G_{mm} (tonnage-weighted average G_{sb} for FC-5) of the mixes used.

For each item, additions in pay will be made if the actual quantity placed exceeds the adjusted quantity. Additions in pay will be calculated by subtracting the adjusted quantity placed from the actual quantity placed, multiplied by the unit prices as determined by 9-2.3.1. The additional pay quantity shall not exceed 5% of the adjusted quantity.

For each item, reductions in pay will be made if the actual quantity placed is less than the adjusted quantity. Reductions in pay will be calculated by subtracting the adjusted quantity from the actual quantity placed, then multiplied by the unit prices as determined by 9-2.3.1.

9-2.3.3 Asphalt Overbuild: Where overbuild is called for in the Plans for the correction of cross-slope, the Engineer will make an adjustment in payment should the quantity of material placed be less than the adjusted quantity as calculated in 9-2.3.2. In addition, should the material placed exceed the adjusted quantity with no negative effect to the correction of cross-slope, an upward adjustment will be made representing the additional material placed.

Adjustments in pay will be determined by subtracting the adjusted quantity from the quantity placed, then multiplying by the unit prices as determined in 9-2.3.1.

9-2.3.4 Quality: Where an adjustment of payment for quality is called for in the Contract Documents, the Engineer will make such adjustments for the corresponding quantity of material based on the unit prices as determined using the six month State wide pay item averages (using the dates six months prior to the letting date for this Contract), or the adjustment defined in Section 346, Developmental Specification Section 330, and Developmental Specification Section 350.

9-2.3.5 Adjustment to the Lump Sum Payment for Deleted Items of Work:

When items of work are shown in the Contract Documents to be constructed or installed and due to actual field conditions, it is determined by the Engineer that the items are not needed, a negative adjustment to the Contract will be made. The negative adjustment will be based on the actual cost of the items being deleted less all costs incurred prior to the date the Engineer determined the items are not needed and the Contractor will retain ownership of the items. The negative adjustment will be processed in accordance with 4-3.2.

9-3 Compensation for Altered Quantities.

Not applicable.

9-4 Deleted Work.

The Department will have the right to cancel the portions of the Contract relating to the construction of any acceptable item. The Department shall make an adjustment in payment to the Contractor of a fair and equitable amount covering the value of all cancelled work less all items of cost incurred prior to the date that the Engineer cancels or suspends the work.

In addition to having the right of canceling the portions of the Contract relating to the construction of any acceptable item therein, the Department shall have the right to cancel any portion of the engineering services. Said cancellation shall be in the same manner as contained herein.

9-5 Partial Payments.

9-5.1 General: The Engineer will make partial payments on monthly estimates based on the estimated amount of work that the Contractor completes during the month (including delivery of certain materials, as specified herein below) based on a Contractor approved payout schedule (schedule of values). The Engineer will make approximate monthly payments, and the Department will correct all partial estimates and payments in the subsequent estimates and in the final estimate and payment.

The Department will base the amount of such payments on the total value of the work that the Contractor has performed to the date of the estimate, based on the quantities completed and the Contract prices, less payments previously made and less any retainage withheld.

Retainage will not be withheld until the percent of Contract Time used exceeds 75%. From that time forward, the Department will withhold retainage of 10% of the amount due on the current estimate as retainage when the percent of Contract Time used exceeds the percent of Contract amount earned by more than 15%.

Contract amount is defined as the original Contract amount adjusted by approved supplemental agreements.

Retainage will be determined for each job on multiple job Contracts. The Department will not accept Securities, Certificates of Deposit or letters of credit as a replacement for retainage. Amounts withheld will not be released until payment of the final estimate.

9-5.2 Unsatisfactory Payment Record: In accordance with Sections 255.05 and 337.16 of the Florida Statutes, and the rules of the Department, the Department may disqualify the Contractor from bidding on future Department contracts if the Contractor's payment record in connection with contract work becomes unsatisfactory.

9-5.3 Withholding Payment:

9-5.3.1 Withholding Payment for Defective Work: If the Department discovers any defective work or material prior to the final acceptance, or if the Department has a reasonable doubt as to the integrity of any part of the completed work prior to final acceptance, then the Department will not allow payment for such defective or questioned work until the Contractor has remedied the defect and removed any causes of doubt.

9-5.3.2 Withholding Payment for Failure to Comply: The Department will withhold progress payments from the Contractor if he fails to comply with any or all of the following within 60 days after beginning work:

1. Comply with and submit required documentation relating to prevailing wage rate provisions, Equal Employment Opportunity, On-The-Job-Training, and Affirmative Action;
2. Comply with the requirement to report all necessary information, including actual payments to DBEs, all other subcontractors and major suppliers, through the Internet based Equal Opportunity Reporting System;
3. Comply with or make a good faith effort to ensure equal employment opportunity for minorities and females hiring goals; and
4. Comply with or make a good faith effort to meet On-The-Job-Training goals.

The Department will withhold progress payments until the Contractor has satisfied the above conditions.

9-5.4 Release of Retainage After Acceptance: When the Contractor has furnished the Department with all submittals required by the Contract, such as invoices, EEO reports, materials certifications, certification of materials procured, etc., (excluding Contractor's letter of acceptance of final amount due and Form 21-A release) and the Engineer has determined that the measurement and computation of pay quantities is correct, the Department may reduce the retainage to \$1,000 plus any amount that the Department elects to deduct for defective work as provided in 9-5.3.

The Department may deduct from payment estimates any sums that the Contractor owes to the Department on any account. Where more than one project or job (separate job number) is included in the Contract, the Department will distribute the reduced retainage as provided in the first paragraph of this subarticle to each separate project or job in the ratio that the Contract value of the work for the particular job bears to the total Contract amount.

9-5.5 Partial Payments for Delivery of Certain Materials:

9-5.5.1 General: The Department will allow partial payments for new materials that will be permanently incorporated into the project and are stockpiled in approved locations in the project vicinity. Stockpile materials so that they will not be damaged by the elements and in a manner that identifies the project on which they are to be used.

The following conditions apply to all payments for stockpiled materials:

1. There must be reasonable assurance that the stockpiled material will be incorporated into the specific project on which partial payment is made.

2. The stockpiled material must be approved as meeting applicable specifications.

3. The total quantity for which partial payment is made shall not exceed the estimated total quantity required to complete the project.

4. The Contractor shall submit to the Engineer certified invoices to document the value of the materials received. The amount of the partial payment will be determined from invoices for the material.

5. Delivery charges for materials delivered to the jobsite will be included in partial payments if properly documented.

6. Partial payments will not be made for materials, which were stockpiled prior to award of the Contract for a project.

9-5.5.2 Partial Payment Amounts: The following partial payment restrictions apply:

1. Partial payments less than \$5,000 for any one month will not be processed.

2. Partial payment will not be made for aggregate and base course material received after paving or base construction operations begin except when a construction sequence designated by the Department requires suspension of paving and base construction after the initial paving operations, partial payments will be reinstated until the paving and base construction resumes.

9-5.5.3 Off Site Storage: If the conditions of 9-5.5.1 are satisfied, partial payments will be allowed for materials stockpiled in approved in-state locations. Additionally, partial payments for materials stockpiled in approved out-of-state locations will be allowed if the conditions of 9-5.5.1 and the following conditions are met:

1. Furnish the Department a Materials Bond stating the supplier guarantees to furnish the material described in the Contract to the Contractor and Department. Under this bond, the Obligor shall be the material supplier and the Obligees shall be the Contractor and the Florida Department of Transportation. The bond shall be in the full dollar amount of the bid price for the materials described in the Contract.

2. The following clauses must be added to the construction Contract between the Contractor and the supplier of the stockpiled materials:

“Notwithstanding anything to the contrary, <supplier> will be liable to the Contractor and the Florida Department of Transportation should <supplier> default in the performance of this agreement.”

“Notwithstanding anything to the contrary, this agreement, and the performance bond issued pursuant to this agreement, does not alter, modify, or otherwise change the Contractor’s obligation to furnish the materials described in this agreement to the Florida Department of Transportation.”

3. The agreement between the Contractor and the supplier of the stockpiled materials must include provisions that the supplier will store the materials and that such materials are the property of the Contractor.

9-5.6 Certification of Payment to Subcontractors: The term “subcontractor,” as used herein, includes persons or firms furnishing materials or equipment incorporated into the work or stockpiled for which the Department has made partial payment and firms working under

equipment-rental agreements. The Contractor is required to pay all subcontractors for satisfactory performance of their Contracts before the Department will make a further progress (partial) payment. The Contractor shall also return all retainage withheld to the subcontractors within 30 days after the subcontractor's work is satisfactorily complete, as determined by the Department. Prior to receipt of any progress (partial) payment, the prime Contractor shall certify that all subcontractors having an interest in the Contract were paid for satisfactory performance of their Contracts and that the retainage is returned to subcontractors within 30 days after satisfactory completion of the subcontractor's work. Submit this certification in the form designated by the Department.

Within 30 days of the Contractor's receipt of the final progress payment or any other payments thereafter, except the final payment, the Contractor shall pay all subcontractors and suppliers having an interest in the Contract for all work completed and materials furnished. The Department will honor an exception to the above when the Contractor demonstrates good cause for not making any required payment and submits written notification of any such good cause to both the Department and the affected subcontractors or suppliers within said 30-day period.

The Contractor shall indemnify and provide defense for the Department when called upon to do so for all claims or suits against the Department by third parties, pertaining to Contractor payment or performance issues arising out of the Contract. It is expressly understood that the monetary limitation on the extent of the indemnification shall be the approved Contract amount, which shall be the original Contract amount as may be increased by subsequent Supplemental Agreements.

9-6 Record of Construction Materials.

9-6.1 General: For all construction materials used in the construction of the project, (except materials exempted by 9-6.2), preserve for the Department's inspection the invoices and records of the materials for a period of three years from the date of completion of the project. Apply this requirement when subcontractors purchase materials, and obtain the invoices and other materials records from the subcontractors. By providing the materials, the Contractor certifies that all invoices will be maintained for the required period.

9-6.2 Non-Commercial Materials: The provisions of 9-6.1 do not apply to materials generally classed as non-commercial, such as fill materials, local sand, sand-clay, or local materials used as stabilizer.

9-7 Disputed Amounts Due the Contractor.

The Department reserves the right to withhold from the final estimate any disputed amounts between the Contractor and the Department. The Department will release all other amounts due, as provided in 9-8.

9-8 Acceptance and Final Payment.

Whenever the Contractor has completely performed the work provided for under the Contract and the Engineer has performed a final inspection and made final acceptance (as provided in 5-10 and 5-11), and subject to the terms of 8-11, the Engineer will prepare a final estimate showing the value of the work as soon as the Engineer makes the necessary measurements and computations. The Engineer will correct all prior estimates and payments in the final estimate and payment. The Department will pay the estimate, less any sums that the Department may have deducted or retained under the provisions of the Contract, as soon as

practicable after final acceptance of the work, along with all fully executed supplemental agreements received after final acceptance.

If the Contractor fails to furnish all required Contract Documents as listed in (1) through (9) below within 90 days of the Department's offer of final payment or request for refund of overpayment, the Department may suspend the Contractor's Certificate of Qualification under the provisions of Florida Administrative Code 14-22.

1. The Contractor has agreed in writing to accept the balance due or refund the overpayment, as determined by the Department, as full settlement of his account under the Contract and of all claims in connection therewith, or the Contractor, has through the use of the Qualified Acceptance Letter, accepted the balance due or refunded the overpayment, as determined by the Department, with the stipulation that his acceptance of such payment or the making of such refund does not constitute any bar, admission, or estoppels, or have any effect as to those payments in dispute or the subject of a pending claim between the Contractor and the Department. To receive payment based on a Qualified Acceptance Letter, define in writing the dispute or pending claim with full particular of all items of all issues in dispute, including itemized amounts claimed for all particulars of all items, and submit it as part of the Qualified Acceptance Letter. The Contractor further agrees, by submitting a Qualified Acceptance Letter that any pending or future arbitration claim or suit is limited to those particulars, including the itemized amounts, defined in the original Qualified Acceptance Letter, and that he will commence with any such arbitration claim or suit within 820 calendar days from and after the time of final acceptance of the work and that his failure to file a formal claim within this period constitutes his full acceptance of the Engineer's final estimate and payment. The overpayment refund check from the Contractor, if required, will be considered a part of any Acceptance Letter executed.

2. The Contractor has properly maintained the project, as specified hereinbefore.

3. The Contractor has furnished a sworn affidavit to the effect that the Contractor has paid all bills and no suits are pending (other than those exceptions listed, if any) in connection with work performed under the Contract and that the Contractor has not offered or made any gift or gratuity to, or made any financial transaction of any nature with, any employee of the Department in the performance of the Contract. Include with the listed tort liability exceptions, if any, evidence of adequate insurance coverage as required in 7-13.

4. The surety on the Contract bond consents, by completion of their portion of the affidavit and surety release subsequent to the Contractor's completion of his portion, to final payment to the Contractor and agrees that the making of such payment does not relieve the surety of any of its obligations under the bond.

5. The Contractor has complied with and settled all requirements pertaining to any wage-rate provisions.

6. The Contractor has submitted all required mill tests and analysis reports to the Engineer.

7. The Contractor has furnished the Construction Compliance with Specifications and Plans Certification. Provide the Engineer with a notarized final certification of compliance with the requirements of Section 105 to accompany the final estimate. Certification must be on a form provided by the Engineer.

8. The Contractor has submitted and the Department has accepted all as-built drawings and certified surveys.

9. The Contractor has furnished all required manufacturers' warranties to the Engineer.

9-8.2 Review of Engineer's Final Estimate: The Department may review the Engineer's final estimate and make changes as necessary. If changes are made, the Contractor will be so notified in writing in the "Notification of Findings Due to Additional Review". This notification letter will detail the changes made as a result of the review, and will stipulate the actions to be taken by the Department and those required by the Contractor. The issuance of a "Notification of Findings Due to Additional Review" will not impact the requirements of 9-8.1, above.

Complete the required actions and submit the signed "Notification of Findings Due to Additional Review" to the Department within the timeframe specified in 9-8.1. If the "Notification of Findings Due to Additional Review" is received after the time has expired in 9-8.1, submit to the Department within 30 days signifying agreement or disagreement with the findings. For disagreement items, submit a full explanation including the item(s) and amount. For any claim or part of a claim that pertains solely to the "Notification of Findings Due to Additional Review" disputes, submit full and complete claim documentation as described in 5-12.3 as to such claim dispute issues within 90 days of receipt of the notification. Failure to submit the signed notification or to submit such claim documentation within the time frames specified may result in suspension of the Contractor's Certificate of Qualification under the provisions of Florida Administrative Code 14-22.

9-9 Interest Due on Delayed Payments.

The Department will determine and pay any interest due the Contractor for delays in final payment in accordance with Section 337.141 of the Florida Statutes.

9-10 Offsetting Payments.

Section 337.145 of the Florida Statutes, providing for offsetting payments to the Contractor, is hereby made a part of this Contract:

1. After settlement, arbitration, or final adjudication of any claim of the Department for work done pursuant to a construction Contract with any party, the Department may offset such amount from payments due for work done on any construction Contract, excluding amounts owed to subcontractors, suppliers, and laborers, which it has with the party owing such amount if, upon demand, payment of the amount is not made within 60 days to the Department.

2. Offsetting any amount pursuant to (1) above shall not be considered a breach of Contract by the Department.

9-11 Submittals.

9-11.1 Submittal Instructions: The Contractor will prepare a monthly estimate for each project in the Contract. Submit the monthly estimate to the Engineer. The Engineer will not pay for any item of work until the Contractor's monthly estimate is approved.

9-11.2 Contractor's Certified Monthly Estimate: The Contractor must make a request for payment by submitting a monthly estimate, no later than Twelve O'clock noon, Monday, after the estimate cut-off date or as directed by the Engineer, based on the amount of Work completed. The Contractor's certified monthly estimate must consist of the following:

1. Contract Number, Financial Project Identification Number, Estimate Number, Monthly Estimate Date and the period that the monthly estimate represents.

2. The basis for arriving at the amount of the monthly estimate including approximate quantities of Work completed, less payment previously made and less the amount previously retained or withheld.

3. Contract Summary showing the percentage of dollar value of completed Work based on the present Contract amount and the percentage of days used based on the present Contract days.

4. Certify the number of gallons of diesel and bituminous material during the monthly estimate period.

9-11.3 Payment to the Contractor: Upon receipt of the Contractor's monthly estimate and approval by the Engineer, payment will be made, less the amount retained or withheld per provisions included in the Contract. The monthly payments will be approximate only and will be subject to reduction for overpayments or increase for underpayments on preceding payments to the Contractor and to correction in the subsequent estimates and the final estimate and payment process.

DIVISION II AND III SPECIFICATIONS

MOBILIZATION.

(REV 2-17-14) (FA 7-2-14) (1-22)

SECTION 101 is deleted and the following substituted:

SECTION 101 MOBILIZATION

101-1 Description.

Perform preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities.

Include the costs of bonds and any required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

101-2 Basis of Payment.

101-2.1 General: The work and incidental costs specified as being covered under this Section will be paid for at the lump sum prices for the items of Mobilization included in the Schedule of Values.

101-2.2 Partial Payments: When the Notice to Proceed has been issued, partial payments will be made in accordance with the following:

Partial payment will be made at 25% of the Mobilization amount shown in the Schedule of Values per month for the first four months until 100% of the Mobilization amount shown in the Schedule of Values is paid. In no event shall more than 50% of the Mobilization amount shown in the Schedule of Values be paid prior to commencing construction on the project site.

Total partial payments for Mobilization on any project, including when more than one project or job is included in the Contract, will be limited to 10% of the original Contract amount for that project. Any remaining amount will be paid upon completion of all work on the Contract.

Retainage, as specified in 9-5, will be applied to all partial payments.

Partial payments made on this item will in no way act to preclude or limit any of the provisions for partial payments otherwise provided for by the Contract.

CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS.
(REV 5-15-17) (FA 8-1-17) (1-22)

ARTICLE 105-8 is expanded by the following.

105-8.13 Geotechnical Foundation Services Personnel For Design Build Projects:

105-8.13.1 General: Provide qualified personnel to design foundations and provide geotechnical analyses and recommendations for the design of roadways and structures for the project. Provide qualified and trained personnel to perform foundation testing, inspection of the construction activities and oversight of the foundation construction operations. Ensure the personnel provided meet the registration and qualification requirements specified herein and these requirements are maintained throughout the duration of the design and construction of the project elements where these personnel are required to work.

Submit qualification statements for the geotechnical, dynamic testing, load testing and non-destructive testing personnel to be used on the project for acceptance by the Engineer. The Department will review these qualification statements, provide comments or request additional information within 15 working days, excluding weekends and Department observed holidays. Do not begin Design or Construction until the qualifications of supervisory personnel have been accepted by the Engineer. Acceptance of the Design-Build Firm's personnel does not relieve the Design-Build Firm of the responsibility for obtaining the required results in the completed work.

105-8.13.2 Geotechnical Foundation Design Engineer of Record (GFDEOR): Provide a Geotechnical Foundation Design Engineer of Record in responsible charge of the geotechnical exploration, analysis, design and recommendations for the roadways and structures on the project. The GFDEOR shall also supervise and certify the constructed foundations. The GFDEOR must be a Professional Engineer registered in the state of Florida and must have a minimum of five years of design experience with the type of foundation proposed for the project. For bridges founded on piles and drilled shafts, the GFDEOR must possess verifiable responsible charge experience in the interpretation and utilization of data from the types of load tests (dynamic, static, Osterberg Cell and/or Statnamic load tests) used on the project on at least three Department bridge projects.

105-8.13.3 Dynamic Testing Engineer (DTE): Provide a Dynamic Testing Engineer in responsible charge of the performance of the dynamic load testing of driven piles, evaluation, signal matching and analysis of the dynamic load test data, the establishment of the production pile lengths (when these are to be determined based on test pile information) and driving criteria. Production pile lengths and driving criteria shall be developed by the same engineering firm, and under the same DTE analyzing the dynamic pile testing data in conjunction with the GFDEOR. The DTE must be a Professional Engineer registered in the state of Florida with responsible charge experience of geotechnical foundation construction engineering and dynamic testing of driven piles for a period of not less than three years including at least three Department bridge projects. This "responsible charge" experience shall include verifiable experience using the test methods that will be utilized on the project. The DTE must have a rank of Intermediate or higher in the PDCA/PDI Dynamic Measurement and Analysis Proficiency Test.

105-8.13.4 Dynamic Testing Operator: Provide a Dynamic Testing Operator (DTO) to perform the dynamic load testing of instrumented piles and test piles in the field. The

DTO must have a rank of Intermediate or higher in the PDCA/PDI Dynamic Measurement and Analysis Proficiency Test. When EDCs will be used to monitor piles and/or test piles, EDC monitoring shall be performed by an operator who has passed EDC Monitoring Certification as evidenced by a Smart Structures valid Certification Card and ID. The operator must have experience in geotechnical foundation construction and dynamic testing of driven piles for a period of not less than two years including at least three Department bridge projects. The experience may have been obtained while working under the supervision of another qualified operator. The Dynamic Testing Operator shall work under the supervision of the DTE.

105-8.13.5 Foundation Inspectors: Provide qualified foundation inspectors, working under the supervision of the GFDEOR, to monitor and record the construction of foundations. Pile Driving inspectors must possess CTQP Pile Driving Inspector qualification. Drilled Shaft inspectors must possess CTQP Drilled Shaft Inspector qualification. Auger Cast Pile inspectors must have completed and passed the CTQP based training class for auger cast piles.

105-8.13.6 Pile Driving Superintendents: Use pile driving superintendents or foremen in responsible charge of pile driving operations, with experience in installing driven piles of the type, size and depth proposed for the project and for a period of not less than two years.

105-8.13.7 Drilled Shaft Superintendents: Use drilled shaft superintendents or foremen in responsible charge of drilling operations with experience in installing drilled shafts of the size and depth proposed and for the project for a period of not less than three years.

105-8.13.8 Auger Cast Pile Superintendents: Use auger cast pile superintendents or foremen in responsible charge of auger cast pile installation operations with experience in installing auger cast piles of the size and depth proposed for the project and for a period of not less than one year.

STRUCTURES FOUNDATIONS (DESIGN BUILD).

(REV 7-14-21) (FA 7-19-21) (1-22)

SECTION 455 is deleted and the following substituted:

**SECTION 455
STRUCTURES FOUNDATIONS**

Index

A. General..... 455-1 through 455-2
B. Piling..... 455-3 through 455-12
C. Drilled Shafts..... 455-13 through 455-24
D. Spread Footings..... 455-25 through 455-37
E. Structures (Other Than Bridge) Foundations-
Auger Cast Piles..... 455-38 through 455-50

A. GENERAL

455-1 General Requirement.

The Contractor may examine available soil samples and/or rock cores obtained during the preliminary soil boring operations at the appropriate District Materials Office or designated storage location.

455-1.1 Monitor Existing Structures: Monitor existing structures in accordance with Section 108.

455-1.2 Excavation: Complete all excavation of the foundations prior to installing piles or shafts unless otherwise authorized by the Engineer. After completing pile/shaft installation, remove all loose and displaced materials from around the piles/shafts, leaving a clean, solid surface. Compact the soil surface on which concrete is to be placed or which will support the forming system for the concrete to support the load of the plastic concrete without settling or causing the concrete to crack, or as shown in the Contract Documents.

455-1.2.1 Abutment (End Bent) Fill: Place and compact the fill before installing end-bent piling/shafts, except when driving specified test piling in end bents or when the Plans show uncased piles through proprietary retaining wall fills.

When installing piles/shafts or casing prior to placing fill, take necessary precautions to prevent displacement of piles/shafts during placing and compacting fill materials within 15 feet of the piles/shafts or casing. Reference and check the position of the piles/shafts or casing at three approximately equal intervals during construction of the embankment.

Place embankment material in 6 inch compacted lifts in the 15 foot area around the piles/shafts or casing. Compact embankment material within the 15 foot area adjacent to the piles/shafts or casing to the required density with compaction equipment weighing less than 1,000 pounds. When installing piles/shafts prior to the completion of the surrounding fills, do not cap them until placing the fills as near to final grade as possible, leaving only the necessary working room for construction of the caps.

When shown in the Plans, provide permanent casings installed prior to placement of the fill, for all drilled shafts through mechanically stabilized fills (for example, behind proprietary retaining walls) for shafts installed after fill placement. Install temporary casings through the completed conventional fill when permanent casings are not required.

Provide permanent casings, if required, before the fill is placed extending a sufficient distance into the existing ground to provide stability to the casings during construction of the abutment fill.

455-1.3 Cofferdams: Construct cofferdams as detailed in the Plans. When cofferdams are not detailed in the Plans, employ a qualified Specialty Engineer to design cofferdams, and to sign and seal the plans and specification requirements. Send the designs to the Engineer for his records before beginning construction.

Provide a qualified diver and a safety diver to inspect the conditions of the foundation enclosure or cofferdam when the Contract Documents require a seal for construction. Equip these divers with suitable voice communications, and have them inspect the foundation enclosure and cofferdam periphery including each sheeting indentation and around each piling or drilled shaft to ensure that no layers of mud or other undesirable materials were left above the bottom of seal elevation during the excavation process. Also have the divers check to make sure the surfaces of the piles or drilled shafts are sufficiently clean to allow bond of the concrete down to the minimum bottom of seal elevation. Ensure that there are no mounds of stone, shell, or unapproved backfill material left after placement and grading. Ensure that the seal is placed as specified and evaluate the adequacy of the foundation soils or rock. Correct any deficiencies found by the divers. Upon completion of inspection by the divers, the Department may also elect to inspect the work before authorizing the Contractor to proceed with subsequent construction operations. Submit a written report by the divers to the Engineer indicating the results of their underwater inspection before requesting authorization to place the seal concrete.

455-1.4 Vibrations on Freshly Placed Concrete (Drilled Shafts and Piers): Ensure that freshly placed concrete is not subjected to peak particle velocities greater than 1.5 inches per second from vibration sources located within 30 feet (from the nearest outside edge of freshly placed concrete to the vibration source) until that concrete has attained its final set as defined by ASTM C403 except as required to remove temporary casings before the drilled shaft elapsed time has expired.

455-2 Static Compression Load Tests.

455-2.1 General: Employ a professional testing laboratory, or Specialty Engineer with prior load test experience on at least three projects, to conduct the load test in compliance with these Specifications, to record all data, and to submit signed and sealed reports of the test results to the Engineer.

Perform the load test by applying a load up to the load required in the Contract Documents or to the failure load, whichever occurs first.

Do not apply test loads to piles sooner than 48 hours (or the time interval shown in the Plans) after driving of the test pile or reaction piles, whichever occurs last.

Do not begin static load testing of drilled shafts until the concrete has attained a compressive strength of 3,400 psi. The Contractor may use high early strength concrete to obtain this strength at an earlier time to prevent testing delays.

Provide all equipment, materials, labor, and personnel required to conduct the load tests, including determination of anchor reaction member depths. In this case, provide a loading apparatus designed to accommodate the maximum load plus an adequate safety factor.

While performing the load test, provide safety equipment, and employ safety procedures consistent with the latest approved practices for this work. Include with these safety procedures, adequate support for the load test plates and jack to prevent them from falling in the event of a release of load due to hydraulic failure, test pile/shaft failure, or any other cause.

455-2.2 Loading Apparatus: Provide an apparatus for applying the vertical loads as described in one of the following:

1. As shown and described in the Contract Documents.
2. As supplied by the Contractor, one of the following devices designed to accommodate a load at least 20% higher than the test load shown in the Plans or described herein for test loads:

- a. **Load Applied by Hydraulic Jack Acting Against Weighted Box or Platform:** Construct a test box or test platform, resting on a suitable support, over the pile, and load it with material with a total weight greater than the anticipated maximum test load. Locate supports for the weighted box or platform at least 6 feet or three pile/shaft diameters, whichever is greater, measured from the edge of the pile or shaft to the edge of the supports. Insert a hydraulic jack with pressure gauge between the test pile or shaft and the underside of the reaction beam, and apply the load to the pile or shaft by operating the jack between the reaction beam and the top of the pile or shaft.

- b. **Load Applied to the Test Pile or Shaft by Hydraulic Jack Acting Against Anchored Reaction Member:** Construct reaction member anchorages in accordance with article 6.3 of ASTM D1143. Attach a girder(s) of sufficient strength to act as a reaction beam to the upper ends of the anchor piles or shafts. Insert a hydraulic jack with pressure gauges between the head of the test pile/shaft and the underside of the reaction beam, and apply the test load to the pile/shaft by operating the jack between the reaction beam and the pile/shaft head.

If using drilled shafts with bells as reaction member anchorages, locate the top of the bell of any reaction shaft anchorage at least three shaft diameters below the bottom of the test shaft.

- c. **Combination Devices:** The Contractor may use a combination of devices (a) and (b), as described above, to apply the test load to the pile or shaft.

- d. **Other systems proposed by the Contractor and accepted by the Engineer:** When necessary, provide horizontal supports for loading the pile/shaft, and space them so that the ratio of the unsupported length to the minimum radius of gyration of the pile does not exceed 120 for steel piles, and the unsupported length to the least cross-section dimension does not exceed 20 for concrete piles or drilled shafts. Ensure that horizontal supports provide full support without restraining the vertical movement of the pile/shaft in any way.

When required by the Contract Documents, apply a horizontal load to the pile/shaft either separately or in conjunction with the vertical load. Apply the load to the test pile/shaft by hydraulic jacks, jacking against Contractor provided reaction devices. After receiving the Engineer's acceptance of the proposed method of load application, apply the horizontal load in increments, and relieve it in decrements as required by the Contract Documents.

455-2.2.1 Modified Quick Test:

1. **Loading Procedure:** Apply vertical loads concentric with the longitudinal axis of the tested pile/shaft to accurately determine and control the load acting on the pile/shaft at any time. Place the load on the pile/shaft continuously, in increments equal to approximately 5% of the maximum test load specified until approaching the failure load, as indicated by the measuring

apparatus and/or instruments. Then, apply increments of approximately 2.5% until the pile/shaft “plunges” or attains the limiting load. The Specialty Engineer may elect to stop the loading increments when the pile/shaft has met the failure criteria or when a settlement equal to 10% of the pile/shaft width or diameter is reached. Apply each load increment immediately after taking and verifying the complete set of readings from all gauges and instruments. Apply each increment of load within the minimum length of time practical, and immediately take the readings. Complete the addition of a load increment and the completion of the readings within 5 to 15 minutes. Hold the maximum applied load for one hour.

Remove the load in decrements of about 10% of the maximum test load. Remove each decrement of load within the minimum length of time practical, and immediately take the readings. Complete the removal of a load decrement and the taking of the readings within 5 to 15 minutes. The Engineer may also require up to two reloading cycles with five loading increments and three unloading decrements. Record the final recovery of the pile/shaft until movement is essentially complete for a period of one hour after the last unload interval.

2. Failure Criteria and Nominal Resistance: Use the criteria described herein to establish the failure load. The failure load is defined as the load that causes a pile/shaft top deflection equal to the calculated elastic compression plus 0.15 inches plus 1/120 of the pile/shaft minimum width or the diameter in inches for piles/shafts 24 inches or less in width, and equal to the calculated elastic compression plus 1/30 of the pile/shaft minimum width or diameter for piles/shafts greater than 24 inches in width. Consider the nominal resistance of any pile/shaft so tested as either the maximum applied load or the failure load, whichever is smaller.

455-2.3 Measuring Apparatus: Provide an apparatus for measuring movement of the test piles/shafts that consists of all of the following devices:

1. Wire Line and Scale: Stretch a wire between two secure supports located at a distance at least:
 - a. 10 feet from the center of the test pile but not less than 3.5 times the pile diameter or width.
 - b. 12 feet from the centerline of the shaft to be tested but not less than three shaft diameters.

Locate the wire supports as far as practical from reaction beam anchorages. At over-water test sites, the Contractor may attach the wire line to the sides of the service platform. Mount the wire with a pulley on one support and a weight at the end of the wire to provide constant tension on the wire. Ensure that the wire passes across the face of a scale mounted on a mirror attached to the test pile/shaft so that readings can be made directly from the scale. Use the scale readings as a check on an average of the dial readings. When measuring both horizontal and vertical movement, mount separate wires to indicate each movement, horizontal or vertical. Measure horizontal movements from two reference wires set normal to each other in a horizontal.

2. Wooden Reference Beams and Dial Gauges: Attach wooden reference beams as detailed in the Plans and accepted by the Engineer to independent supports. For piles, install the independent supports at the greater of 3.5 times the pile diameter or width or 10 feet from the centerline of the test pile. For drilled shafts, install independent supports at the greater of three shaft diameters or 12 feet from the centerline of the shaft to be tested. Locate the reference beam supports as far as practical from reaction beam anchorages. For over-water test sites, the Contractor may attach the reference beams between two diagonal platform supports. Attach dial gauges, with their stems resting either on the top of the pile/shaft or on lugs or similar reference

points on the pile/shaft, to the fixed beams to record the movement of the pile/shaft head. Ensure that the area on the pile/shaft or lug on which the stem bears is a smooth surface which will not cause irregularities in the dial readings.

Provide a minimum of four dial gauges, each with 0.001 inch divisions and with 2 inch minimum travel, placed at 90 degree intervals for measuring vertical or horizontal movement.

3. Survey Level: As a check on the dial gauges, determine the elevation of a point near the top of the test pile/shaft (on plan datum) by survey level at each load and unload interval during the load test. Unless accepted otherwise by the Engineer, level survey precision is 0.001 foot. Alternately, the surveyor may read an engineer's 50 scale attached near the pile/shaft head. Determine the first elevation before applying the first load increment; make intermediate readings immediately before a load increment or an unload decrement, and after the final unload decrement that completely removes the load. Make a final reading at the time of the last recovery reading.

For over-water test sites, when shown in the Plans or directed by the Engineer, the Contractor shall, drive an H pile through a 36 inch casing to provide a stable support for the level and to protect it against wave action interfering with level measurements. Provide a suitable movable jig for the surveyor to stand. Use a jig that has a minimum of three legs, has a work platform providing at least 4 feet width of work area around the casing, and is accepted by the Engineer before use. The described work platform may be supported by the protective casing when accepted by the Engineer.

455-2.4 Load Test Instrumentation:

1. General: The intent of the load test instrumentation is to measure the test load on top of the pile/shaft and its distribution between side friction and end bearing to provide evaluation of the preliminary design calculations and settlement estimates and to provide information for final pile/shaft length design. Ensure that the instrumentation is as described in the Contract Documents.

Supply 110 V, 60 Hz, 30 A of AC electric power in accordance with the National Electric Code (NEC) to each test pile/shaft site during the installation of the instrumentation, during the load testing, and during any instrumented set-checks/redrives.

Place all of the internal instrumentation on the rebar cage before installation in the test shaft. Construct the rebar cage at least two days before it is required for construction of the test shaft. Successfully demonstrate the lifting and handling procedures before installing the instrumentation. Place the instrumented rebar cage in one segment without causing damage to the instrumentation.

2. Hydraulic Jack and Load Cell: Provide hydraulic jack(s) of adequate size to deliver the required test load to the pile/shaft unless shown otherwise in the Plans. Before load testing begins, submit a certificate from a reputable testing laboratory showing a calibration of gauge readings for all stages of jack loading and unloading for jacks provided. Ensure that the jack has been calibrated within the preceding six months. Ensure that the accuracy of the gauge is within 5% of the true load.

Provide an adequate load cell accepted by the Engineer that has been calibrated within the preceding six months. Provide an approved electrical readout device for the load cell. Submit a certificate from an independent laboratory showing a calibration of readings for all stages of loading and unloading for load cells furnished by the Contractor and obtain the

approval of the Engineer before beginning load testing. Ensure that the accuracy of the load cell is within 1% of the true load.

3. Telltales: When shown in the Contract Documents, install telltales that consist of an unstressed steel rod, greased for reducing friction and corrosion, with appropriate clearance inside a constant-diameter pipe that rests on a flat plate attached to the end of the pipe at the point of interest shown in the Plans. Construct telltales in accordance with the Contract Documents. Install dial gauges reading to 0.001 inch with 1 inch minimum travel as directed by the Specialty Engineer to measure the movement of the telltale with respect to the top of the pile/shaft.

4. Embedded Strain Gauges: Install strain gauges in the test shaft to measure the distribution of the load. Ensure that the type, number, and location of the strain gauges are as shown in the Plans or as directed by the Geotechnical Foundation Design Engineer of Record (GFDEOR). Use strain gauges that are waterproof and have suitable shielded cable that is unspliced within the shaft. In drilled shafts provide sufficient instrumentation to determine side friction components in segments no longer than 5 feet and the end bearing component.

5. Caliper: Provide a caliper tool or system to measure accurately and continuously the shape of test shafts prior to placing concrete.

455-2.5 Support Facilities: Furnish adequate facilities for making load and settlement readings 24 hours per day. Provide such facilities for the instrumented area, and include lighting and shelter from rain, wind, and direct sunlight.

455-2.6 Load Test Personnel Furnished by the Contractor: Provide a certified welder, together with necessary cutting and welding equipment, to assist with the load test setup and to make any necessary adjustments during the load test. Provide personnel to operate the jack, generators, and lighting equipment, and also provide one person with transportation to assist as required during load test setup and conducting of the load tests. Provide qualified personnel, to read the dial gauges, take level measurements, and conduct the load test under the direct supervision of the Specialty Engineer.

455-2.7 Cooperation by the Contractor: Cooperate with the Department, and ensure that the Department has access to all facilities necessary for observation of the conduct and the results of the test.

455-2.8 Required Reports: Submit a static load test report signed and sealed by the Specialty Engineer to the Engineer for review and acceptance, at least three working days, excluding weekends and Department observed holidays, prior to beginning production pile/shaft construction. Include in the report of the load test the following information:

1. A tabulation of the time of, and the amount of, the load and settlement readings, and the load and recovery readings taken during the loading and unloading of the pile/shaft.

2. A graphic representation of the test results, during loading and unloading of pile/shaft top movement as measured by the average of the dial gauge readings, from wireline readings and from level readings.

3. A graphic representation of the test results, when using telltales, showing pile/shaft compression and pile/shaft tip movement.

4. The estimated failure and safe loads according to the criteria described herein.

5. The derived side friction component for each pile/shaft segment, and end bearing component. Include all pertinent test data, analysis and charts used to determine these values.

6. Remarks concerning any unusual occurrences during the loading of the pile/shaft.
7. The names of those making the required observations of the results of the load test, the weather conditions prevailing during the load test, and the effect of weather conditions on the load test.
8. All supporting data including jack and load cell calibrations and certificates and other equipment requiring calibration.
9. All data taken during the load test together with instrument calibration certifications. In addition, submit a report showing an analysis of the results of axial load and lateral load tests in which soil resistance along and against the pile/shaft is reported as a function of deflection.
10. For drilled shafts, include all cross-hole sonic logging results, gamma-gamma density logging results, the results of other integrity tests, caliper measurements data and the pilot holes reports of core borings. Attach this report to the final authorized tip elevations letter in accordance with 455-15.6.
11. For piles, include pile driving records, and dynamic testing data and analysis.
12. Submit a signed & sealed letter to the Department confirming the design assumptions were verified by the load tests before proceeding with production foundation construction.

455-2.9 Disposition of Loading Material: Remove all equipment and materials, which remains the Contractor's property, from the site. Clean up and restore the site to the satisfaction of the Engineer.

455-2.10 Disposition of Tested Piles/Shafts: After completing testing, cut off the tested piles/shafts, which are not to be incorporated into the final structure, and any reaction piles/shafts at an elevation 24 inches below the finished ground surface. Take ownership of the cut-offs and provide areas for their disposal.

B. PILING

455-3 General.

Furnish and install concrete, steel, or wood piling including driving, jetting, preformed pile holes, cutting off, splicing, dynamic load testing, and static load testing of piling. Prior to driving, clearly mark the piles to facilitate inspection. Provide individual straight-line marks at 1-ft intervals numbered at least every 5 ft. Use markers or lumber crayons or paint marks that can be easily observed by the inspector. Ensure marks are spaced uniformly and perpendicular to the face of the pile. Face pile so that the pile markings are easily visible to the pile inspector. Provide inch marks as needed when set checks or practical refusal checks are required.

In the event a pile is broken or otherwise damaged by the Contractor to the extent that the damage is irreparable, in the opinion of the Engineer, the Contractor shall extract and replace the pile at no additional expense to the Department. In the event that a pile is mislocated by the Contractor, the Contractor shall extract and replace the pile, at no expense to the Department, except when a design change proposed by the Contractor is approved by the Department as provided in 455-5.16.5.

455-4 Classification.

The Department classifies piling as follows:

1. Treated timber piling.
2. Prestressed concrete piling.
3. Steel piling.
4. Test piling.
5. Sheet piling.
 - a. Concrete sheet piling.
 - b. Steel sheet piling.
6. Polymeric Piles (see Section 471 for requirements).

455-5 General Construction Requirements.

455-5.1 Predrilling of Pile Holes: Predrilled pile holes are either starter holes to the depth described in this Subarticle or holes drilled through embankment/fill material down to the natural ground surface at no additional cost to the Department. When using low displacement steel piling such as structural shapes, drive them through the compacted fill without the necessity of drilling holes through the fill except when the requirements for predrilling are shown in the Plans. When using concrete or other high displacement piles, drill pile holes through fill, new or existing, to at least the elevation of the natural ground surface. Use the range of drill diameters listed below for square concrete piles.

12 inch square piles	15 to 17 inches
14 inch square piles	18 to 20 inches
18 inch square piles	22 to 26 inches
20 inch square piles	24 to 29 inches
24 inch square piles	30 to 34 inches
30 inch square piles	36 to 43 inches

For other pile sizes, use the diameter of the drills shown in the Plans or accepted by the Engineer. Accurately drill the pile holes with the hole centered over the Plan location of the piling. Maintain the location and vertical alignment within the tolerances allowed for the piling.

For predrilled holes required through rock or other hard (i.e. debris, obstructions, etc.) materials that may damage the pile during installation, predrill hole diameters approximately 2 inches larger than the largest dimension across the pile cross-section. Fill the annular space around the piles as described in 455-5.10.1 with clean A-3 sand or sand meeting the requirements of 902-3.3.

In the setting of permanent and test piling, the Contractor may initially predrill holes to a depth up to 20% of the test pile length, unless required otherwise by the Engineer or the plans. Predrill holes for production piles in the same manner as the test piles. When installing piles in compacted fill, predrill the holes to the elevation of the natural ground surface. With prior written authorization from the Engineer, the Contractor may predrill holes to greater depths to minimize the effects of vibrations on existing structures adjacent to the work or for other reasons the Contractor proposes.

455-5.2 Underwater Driving: Underwater driving is defined as any driving through water which is above the pile head at the time of driving.

When conducting underwater driving, provide a diver equipped with voice communications to aid in placing the hammer back on the pile for required cushion changes or for subsequent re-driving, to attach or recover instrumentation, to inspect the condition of the pile, or for other assistance as required.

Select one of the following methods for underwater driving:

1. Accomplish underwater driving using conventional driving equipment and piling longer than authorized so that the piling will extend above the water surface during final driving. When choosing this option, furnish a pile hammer that satisfies the requirements of this Section for use with the longer pile.

2. Accomplish underwater driving using an underwater hammer that meets the requirements of this Section and is accepted by the Engineer. When choosing this option, provide at least one pile longer than authorized at each pile group, extending above the water surface at final driving. At each group location, drive the longer pile first. Evaluate the adequacy of the underwater driving system. Use the pile tip elevation of the longer pile to evaluate the acceptability of the piles driven with the underwater hammer.

3. Accomplish underwater driving using conventional driving equipment with a suitable pile follower. When choosing this option, provide at least one pile longer than required at each pile group, extending above the water surface at final driving. At each group location, drive the full length pile first without using the follower. Perform a dynamic load test on the first pile driven with the follower in each group. Use the pile tip elevation of the longer pile to evaluate the acceptability of the piles driven with the follower.

Prior to use, submit details of the follower to the Engineer along with the information required in 455-10. Include the weight, cross-section details, stiffness, type of materials, and dimensions of the follower.

455-5.3 Pile Hammers: All equipment is subject to satisfactory field performance during and without dynamic testing. Use a variable energy hammer to drive concrete piles. Hammers will be rated based on the theoretical energy of the ram at impact. Supply driving equipment which provides the required resistance at a blow count ranging from 3 blows per inch (36 blows per foot) to 10 blows per inch (120 blows per foot) at the end of initial drive. When the stroke height or bounce chamber pressure readings do not adequately determine the energy of the hammer, provide and maintain a device to measure the velocity of the ram at impact. Determine the actual hammer energy in the field so that it is consistent with the hammer energy used for each bearing capacity determination. When requested, submit to the Engineer all technical specifications and operating instructions related to hammer equipment.

455-5.3.1 Air/steam: Variable energy air/steam hammers shall be capable of providing at least two ram stroke lengths. The short ram stroke length shall be approximately half of the full stroke for hammers with strokes up to 4 feet and no more than 2 feet for hammers with maximum strokes lengths over 4 feet. Operate and maintain air/steam hammers within the manufacturer's specified ranges. Use a plant and equipment for steam and air hammers with sufficient capacity to maintain, under working conditions, the hammer, volume and pressure specified by the manufacturer. Equip the plant and equipment with accurate pressure gauges which are easily accessible. Drive piles with air/steam hammers operating within 10% of the manufacturer's rated speed in blows per minute. Provide and maintain in working order for the Engineer's use an approved device to automatically determine and display the blows per minute of the hammer.

455-5.3.2 Diesel: Variable energy diesel hammers shall have at least three fuel settings that will produce reduced strokes. Operate and maintain diesel hammers within the manufacturer's specified ranges. Determine the rated energy of diesel hammers using measured ram stroke length multiplied by the weight of the ram for open end hammers and by methods recommended by the manufacturer for closed end hammers.

Provide and maintain in working order an approved device to automatically determine and display ram stroke for open-end diesel hammers.

Equip closed-end (double acting) diesel hammers with a bounce chamber pressure gauge, in good working order, mounted near ground level so it can be easily read. Also, submit to the Engineer a chart, calibrated to actual hammer performance within 30 days prior to initial use, equating bounce chamber pressure to either equivalent energy or stroke for the closed-end diesel hammer to be used.

455-5.3.3 Hydraulic: Variable energy hydraulic hammers shall have at least three hydraulic control settings that provide for predictable energy or equivalent ram stroke. The shortest stroke shall be a maximum of 2 feet for the driving of concrete piles. The remaining strokes shall include full stroke and approximately halfway between minimum and maximum stroke.

Supply hammer instrumentation with electronic read out, and control unit that allows the inspector and Engineer to monitor, and the operator to read and adjust the hammer energy or equivalent ram stroke. When pressure measuring equipment is required to determine hammer energy, calibrate the pressure measuring equipment before use.

455-5.3.4 Vibratory: Vibratory hammers of sufficient capacity (force and amplitude) may be used to drive steel sheet piles and, with acceptance of the Engineer, to drive steel bearing piles a sufficient distance to get the impact hammer on the pile (to stick the pile). The Geotechnical Foundation Design Engineer of Record will determine the allowable depth of driving using the vibratory hammer based on site conditions. However, in all cases, use a power impact hammer for the last 15 feet or more of the final driving of steel bearing piles for bearing determinations after all piles in the bent/pier have been driven with a vibratory hammer. Do not use vibratory hammers to install concrete piles, or to install support or reaction piles for a load test.

455-5.4 Cushions and Pile Helmet:

455-5.4.1 Capblock: Provide a capblock (also called the hammer cushion) as recommended by the hammer manufacturer. Use commercially manufactured capblocks constructed of durable manmade materials with uniform known properties. Do not use wood chips, wood blocks, rope, or other material which permit excessive loss of hammer energy. Do not use capblocks constructed of asbestos materials. Obtain the Engineer's acceptance for all proposed capblock materials and proposed thickness for use. Maintain capblocks in good condition, and replace them when charred, melted, or otherwise significantly deteriorated. Inspect the capblock before driving begins and weekly or at appropriate intervals based on field trial. Replace or repair any capblock which loses more than 25% of its original thickness, in accordance with the manufacturer's instructions, before permitting further driving.

455-5.4.2 Pile Cushion: Provide a pile cushion that is adequate to protect the pile from being overstressed in compression and tension during driving. Use a pile cushion sized so that it will fully fill the lateral dimensions of the pile helmet minus one inch but does not cover any void or hole extending through the top of the pile. Determine the thickness based upon the hammer-pile-soil system. For driving concrete piles, use a pile cushion made from pine plywood

or oak lumber. Do not use materials previously soaked, saturated or treated with oil. Maintain pile cushions in good condition and replace them when charred, splintered, excessively compressed, or otherwise deteriorated to the point it will not protect the pile against overstressing in tension or compression. Protect cushions from the weather, and keep them dry. Do not soak the cushions in any liquid. Provide a new cushion for each pile unless approved otherwise by the Engineer after satisfactory field trial during dynamic testing.

During dynamic load tests, replace the pile cushion when any of the pile stress measurements exceed the maximum allowed pile stress determined by 455-5.12.2. When driving a pile without dynamic testing, replace the pile cushion when the cushion is either compressed more than one-half the original thickness, begins to burn, or as directed by the Engineer after field performance.

Reuse pile cushions in good condition to perform all set-checks and redrives. Use the same cushion to perform the set-check or redrive as was used during the initial driving, unless this cushion is unacceptable due to deterioration, in which case use a similar cushion.

455-5.4.3 Pile Helmet: Provide a pile helmet suitable for the type and size of piling being driven. Use a pile helmet deep enough to adequately contain the required thickness of pile cushion and to assist in maintaining pile-hammer alignment. Use a pile helmet that fits loosely over the pile head and is at least 1 inch larger than the pile dimensions. Use a pile helmet designed so that it will not restrain the pile from rotating.

455-5.5 Leads: Provide pile leads constructed in a manner which offers freedom of movement to the hammer and that have the strength and rigidity to hold the hammer and pile in the correct position and alignment during driving. When using followers, use leads that are long enough and suitable to maintain position and alignment of the hammer, follower, and pile throughout driving.

455-5.6 Followers: When driving using followers, perform dynamic load testing as per 455-5.14. Obtain the Engineer's acceptance for the type of follower, when used, and the method of connection to the leads and pile. Use followers constructed of steel with an adequate cross-section to withstand driving stresses. When driving concrete piles, ensure that the cross-sectional area of the follower is at least 18% of the cross-sectional area of the pile. When driving steel piles, ensure that the cross-sectional area of the follower is greater than or equal to the cross-sectional area of the pile. Provide a pile helmet at the lower end of the follower sized according to the requirements of 455-5.4.3. Use followers constructed that maintain the alignment of the pile, follower, and hammer and still allow the pile to be driven within the allowable tolerances. Use followers designed with guides adapted to the leads that maintain the hammer, follower, and the piles in alignment.

Use information from dynamic load tests described in 455-5.14 to evaluate the adequacy of the follower and to determine pile capacity.

455-5.7 Templates and Ground Elevations: Provide a fixed template, adequate to maintain the pile in proper position and alignment during driving with swinging leads or with semi-fixed leads. The Engineer may allow the use of templates attached to a barge if the Contractor demonstrates satisfactorily that the pile alignment, and the elevation and horizontal position of the template can be maintained during all pile driving operations. Where practical, place the template so that the pile can be driven to cut-off elevation before removing the template. Ensure that templates do not restrict the vertical movement of the pile.

Supply a stable reference close to the pile, which is satisfactory in the opinion of the Engineer, for determination of the pile penetration. At the time of driving piles, obtain and record elevations of the original ground and template at each pile or pile group location. Note the highest and lowest elevation at each required location and the ground elevation at all piles.

455-5.8 Water Jets: Use jet pumps, supply lines, and jet pipes that provide adequate pressure and volume of water to freely erode the soil. Do not perform jetting without prior approval by the Engineer.

Do not perform jetting in the embankment or for end bents. Where conditions warrant, with approval by the GFDEOR, perform jetting on the holes first, place the pile therein, then drive the pile to secure the last few feet of penetration. Only use one jet for prejetting or jetting through piles constructed with a center jet-hole. Use two jets when using external jets. When jetting and driving, position the jets slightly behind the advancing pile tip (approximately 3 feet or as approved by the GFDEOR). When using water jets in the driving, determine the pile bearing only from the results of driving after withdrawing the jets, except where using jets to continuously eliminate soil resistance through the scour zone, ensure that they remain in place as directed by the GFDEOR and operating during pile bearing determination. Where practical, perform jetting on all piles in a pile group before driving begins. When large pile groups or pile spacing and batter make this impractical, or when the Plans specify a jet-drive sequence, set check a sufficient number of previously driven piles in a pile group to confirm their capacity after completing all jetting.

455-5.9 Penetration Requirements: Measure the penetration of piles from the elevation of natural ground, the deepest scour elevation shown in the Pile Data Table, or the bottom of excavation, whichever is lower. When the Contract Documents show a minimum pile tip elevation, drive the tip of the pile to this minimum elevation. The Engineer will accept the bearing of a pile only if the Contractor achieves the required bearing when the tip of the pile is at or below the specified minimum tip elevation and below the bottom of the preformed or predrilled pile hole.

When the Plans do not show a minimum tip elevation, ensure that the penetration is at least 10 feet into firm bearing material or at least 20 feet into soft material unless otherwise permitted by the Engineer. The Engineer may accept a penetration between 15 feet and 20 feet when there is an accumulation of five consecutive feet or more of firm bearing material. Firm bearing material is any material offering a driving resistance greater than or equal to 30 tons per square foot of gross pile area as determined by the Dynamic Load Testing (455-5.12.4). Soft material is any material offering less than these resistances. The gross pile area is the actual pile tip cross-sectional area for solid concrete piles, the product of the width and depth for H piles, and the area within the outside perimeter for pipe piles and voided concrete piles.

Do not drive piles beyond practical refusal. To meet the requirements in this Subarticle, provide penetration aids, such as jetting or preformed pile holes, when piles cannot be driven to the required penetration without reaching practical refusal.

455-5.10 Preformed Pile Holes:

455-5.10.1 Description: Preformed pile holes serve as a penetration aid when all other pile installation methods fail to produce the desired penetration and when authorized by the GFDEOR to minimize the effects of vibrations on adjacent structures. Preformed pile holes are necessary when the presence of rock or strong strata of soils will not permit the installation of piles to the desired penetration by driving or a combination of jetting and driving, when determined necessary, and authorized by the GFDEOR to minimize the effects of vibrations on

adjacent existing structures. Drive all piles installed in preformed pile holes to determine that the bearing requirements have been met.

For preformed holes which are required through material that caves during driving to the extent that the preformed hole does not serve its intended purpose, case the hole from the surface through caving material. After installing the pile to the bottom of the casing, remove the casings unless shown otherwise in the Plans. Determine bearing of the pile after removing the casing unless shown otherwise in the Plans. Fill all voids between the pile and soil remaining after driving through preformed holes with clean A-3 sand or sand meeting the requirements of 902-3.3, after the pile has achieved the required minimum tip elevation, unless grouting of preformed pile holes is shown in the Plans. If pile driving is interrupted during sand placement, drive the pile at least 20 additional blows after filling all of the voids between the pile and soil with sand at no additional cost to the Department.

455-5.10.2 Provisions for Use of Preformed Pile Holes: Preformed pile holes may be used when the Contractor establishes that the required results cannot be obtained when driving the load bearing piles with specified driving equipment, or if jetting is allowed, while jetting the piles and then driving or while jetting the piles during driving.

455-5.10.3 Reasons for Preformed Pile Holes: The Department considers, but does not limit to, the following conditions as reasons for preformed pile holes:

1. Inability to drive piles to the required penetration with driving and jetting equipment.
2. To penetrate a hard layer or layers of rock or strong stratum that the Engineer considers not sufficiently thick to support the structure.
3. To obtain greater penetration into dense (strong) material and into dense material containing holes, cavities or unstable soft layers.
4. To obtain penetration into a stratum in which it is desired to found the structure.
5. To minimize the effects of vibrations or heave on adjacent existing structures.
6. To minimize the effects of ground heave on adjacent piles.

455-5.10.4 Construction Methods: Construct preformed pile holes by drilling, or driving and withdrawing a suitable punch or chisel at the locations of the piles. Construct a hole that is equal to or slightly greater than the largest pile dimension for the entire length of the hole and of sufficient depth to obtain the required penetration. Carefully form the preformed hole by using a drill or punch guided by a template or other suitable device, and do not exceed the minimum dimensions necessary to achieve the required penetration of the pile. When the Plans call for grouting the preformed pile holes, provide a minimum pile hole dimension that is 2 inches larger than the largest pile dimension. Construct the holes at the Plan position of the pile and the tolerances in location, and ensure the hole is straight and that the batter is the same as specified for the pile. Loose material may remain in the preformed pile hole if the conditions in 455-5.10.1 are satisfied.

455-5.10.5 Grouting of Pile Holes: Clean and grout preformed pile holes for bearing piles, when the Plans require grouting after driving. Use grout that meets the requirements of 455-40 and 455-42 and has a minimum compressive strength of 3,000 psi at 28 days or as specified in the Plans. Prepare cylinders and perform QC testing in accordance with 455-43. LOT size and verification will be in accordance with 455-43. Pump the grout through three or more grout pipes initially placed at the bottom of the preformed hole. The

Contractor may raise the grout pipes when necessary to prevent clogging and to complete the grouting operations. Maintain the grout pipes below the surface of the previously placed grout. Continue grouting until the grout reaches the ground surface all around the pile. Provide divers to monitor grouting operations when the water depth is such that it is impractical to monitor from the ground surface.

455-5.11 Bearing Requirements:

455-5.11.1 General: Drive piles to provide the bearing required for carrying the loads shown in the Plans. For all types of bearing piles, consider the driving resistance as determined by the methods described herein sufficient for carrying the specified loads as the minimum bearing which is accepted for any type of piles. Determine pile bearing using the method described herein or as shown in the Plans.

For foundations requiring 100% dynamic testing of production piles, ensure each pile has achieved minimum penetration and the minimum required bearing for 6 inches of consecutive driving, or the minimum penetration is achieved, driving has reached practical refusal in firm material and the bearing capacity obtained in all the refusal blows.

For foundations not requiring 100% dynamic testing of production piles, ensure each pile has achieved minimum penetration, the blow count is generally the same or increasing and the minimum required bearing capacity obtained for 24 inches of consecutive driving with less than 1/4 inches rebound per blow, or the minimum penetration is achieved and driving has reached practical refusal in firm material.

455-5.11.2 Bearing Criteria: For foundations requiring 100% dynamic testing, determine the bearing of all piles using the data received from dynamic load testing equipment utilizing internally or externally mounted sensors according to the methods described in 455-5.12.1.

For foundations not requiring 100% dynamic testing, drive all piles to the blow count criteria established by the GFDEOR and the Dynamic Testing Engineer (DTE) using the methods described herein and presented in the production pile length and driving criteria letter (see 455-5.15.2).

455-5.11.3 Practical Refusal: Practical refusal is defined as 20 blows per inch or less than one inch penetration, with the hammer operating at the highest setting or setting determined by the DTE for driving piles without damage and less than 1/4 inches rebound per blow. Stop driving as soon as the pile has reached practical refusal.

455-5.11.4 Set-checks and Pile Redrive:

1. Set-checks: Set-checks consist of re-driving the pile after certain period of time, typically up to 24 hours. Perform set-checks as required and at the waiting periods shown in the Contract Documents. Provide an engineer's level or other suitable equipment for elevation determinations to determine accurate pile penetration during the set-checks. A pile may be accepted when a set-check shows that it has achieved the minimum required pile bearing and has met all other requirements of this Section.

2. Pile Redrive: Pile redrive consists of re-driving the pile after the following working day from initial driving to determine time effects, to reestablish pile capacity due to pile heave, or for other reasons.

3. Uninstrumented Set-Checks and Uninstrumented Pile Redrive: Piles may be accepted based on uninstrumented set-checks or uninstrumented pile redrives only when the piles are redriven for at least 24 inches. In these cases, the piles may be considered to have sufficient bearing resistance when the specified blow count criteria is achieved in accordance

with 455-5.11.1 and 455-5.11.2. Unless practical refusal is obtained as defined in 455-5.11.3, set-checks or redrives for piles redriven less than 24 inches must be instrumented for pile acceptance.

4. Instrumented Set-Checks and Instrumented Pile Redrive: Use dynamic load tests using at least 6 hammer blows to determine whether the pile bearing is sufficient. The pile may be considered to have sufficient bearing resistance when dynamic measurements demonstrate the static pile resistance exceeds the required pile resistance for at least one hammer blow and the average static pile resistance during the next five hammer blows exceeds 95% of the required pile resistance. If the pile is advanced farther, the static pile resistance during all subsequent blows must exceed 90% of the required pile resistance.

455-5.11.5 Pile Heave: Pile heave is the upward movement of a pile from its originally driven elevation. Drive the piles in an appropriate sequence to minimize the effects of heave and lateral displacement of the ground. Monitor piles previously driven in a pile group for possible heave during the driving of the remaining piles. Take elevation measurements to determine the magnitude of the movement of piles and the ground surface resulting from the driving process. Redrive all piles that have heaved 1/4 inches or more.

455-5.11.6 Piles with Insufficient Bearing: When the bearing capacity of any pile is less than the required bearing capacity, the Contractor may splice the pile and continue driving or may extract the pile and drive a pile of greater length, or drive additional piles.

455-5.11.7 Optional Soil Set-up approach: If the Contractor so desires, it may consider soil set-up. Production piles that are driven to less than the Nominal Bearing Resistance (NBR) may be accepted based on the anticipated soil setup without set checks on all piles, only if the following criteria are met:

- (a) Pile tip penetration satisfies the minimum penetration requirement following 455-5.9.
- (b) End of Initial Drive (EOID) resistance exceeds 1.10 times the Factored Design Load for the pile bent/pier, as determined by the dynamic testing or blow count criteria.
- (c) The Resistance Factor for computing NBR is taken from the following table:

Resistance Factors for Pile Installation Using Soil Setup (all structures)				
Loading	Design Method	Construction QC Method	Resistance Factor, ϕ	
			Blow Count Criteria ⁴	100% Dynamic Testing ⁵
Compression	Davisson Capacity	EDC ¹ , or PDA and CAPWAP ²	0.55	0.60
		Static Load Testing ³	0.65	0.70
		Statnamic Load Testing ³	0.60	0.65
Uplift	Skin Friction	EDC ¹ , or PDA and CAPWAP ²	0.45	0.50
		Static Load Testing ³	0.55	0.55

1. Using the analysis methods published by Tran et al (2012).
2. Dynamic Load Testing and Signal Matching Analysis.
3. Used to confirm the results of Dynamic Load Testing and Signal Matching Analysis.
4. Initial drive of production piles using Blow Count Criteria.
5. Initial drive of all piles accepted by results of Dynamic Testing of all blows.

(d) At least one test pile is driven at each bent/pier with a successful set check at the anticipated production pile tip elevations and one of the following sets of dynamic load testing conditions are met at each bent/pier.

1. The bearing of at least 10% of piles in the bent/pier (round up to the next whole number) is confirmed by instrumented set-check, and all test piles and instrumented set-checks demonstrate the pile resistance exceeds the NBR within seven days after EOID

2. The bearing of at least 20% of piles in the bent/pier (round up to the next whole number) is confirmed by instrumented set-check, and all test piles and instrumented set-checks demonstrate the pile resistance exceeds the NBR within 21 days after EOID.

(e) All uninstrumented piles are driven deeper and to a greater EOID resistance than the EOID resistance of all instrumented production piles in the same bent/pier.

455-5.12 Methods to Determine Pile Capacity:

455-5.12.1 General: Dynamic load tests using an externally mounted instrument system and signal matching analyses or embedded gauges will determine pile capacity for all structures or projects unless otherwise shown on the Plans. Notify the Engineer two working days prior to placement of piles within the template and at least one working day prior to driving piles.

455-5.12.2 Wave Equation:

1. General: Use Wave Equation Analysis for Piles (WEAP) programs to evaluate the suitability of the proposed driving system (including the hammer, follower, capblock and pile cushions) as well as to estimate the driving resistance, in blows per 12 inches or blows per inch, to achieve the pile bearing requirements and to evaluate pile driving stresses.

Use Wave Equation Analyses to show the hammer meets the requirements described in 455-5.3.

2. Required Equipment For Driving: Hammer acceptance is solely based on satisfactory field trial including dynamic load test results and Wave Equation Analysis. Supply a hammer system that meets the requirements described in the specifications based on satisfactory field performance.

In the event piles require different hammer sizes, the Contractor may elect to drive with more than one size hammer or with a variable energy hammer, provided the hammer is properly sized and cushioned, will not damage the pile, and will develop the required resistance.

3. Maximum Allowed Pile Stresses:

a. General: The maximum allowed driving stresses for concrete, steel, and timber piles are given below. In the event dynamic load tests show that the hammer will overstress the pile, modify the driving system or method of operation as required to prevent overstressing the pile. In such cases provide additional cushioning, reduce the stroke, or make other appropriate agreed upon changes.

b. Prestressed Concrete Piles: Use the following equations to determine the maximum allowed pile stresses:

$$s_{apc} = 0.7f'_c - 0.75f_{cpe} \quad (1)$$

$$s_{apt} = 6.5(f'_c)^{0.5} + 1.05f_{cpe} \quad (2a) \text{ for piles less than 50 feet long}$$

$$s_{apt} = 3.25(f'_c)^{0.5} + 1.05f_{cpe} \quad (2b) \text{ for piles 50 feet long and greater}$$

$$s_{apt} = 500 \quad (2c) \text{ within 20 feet of a mechanical splice}$$

where:

s_{apc} = maximum allowed pile compressive stress, psi

s_{apt} = maximum allowed pile tensile stress, psi

f'_c = specified minimum compressive strength of concrete, psi

f_{cpe} = effective prestress (after all losses) at the time of driving, psi, taken as 0.8 times the initial prestress force divided by the minimum net concrete cross sectional area of the pile ($f_{cpe} = 0$ for dowel spliced piles).

c. Steel Piles: Ensure the maximum pile compression and tensile stresses measured during driving are no greater than 0.9 times the yield strength ($0.9 f_y$) of the steel.

d. Timber Piles: Ensure the maximum pile compression and tensile stresses measured during driving are no greater than 3.6 ksi for Southern Pine and Pacific Coast Douglas Fir and 0.9 of the ultimate parallel to the grain strength for piles of other wood.

455-5.12.3 Temporary Piles: Submit for the Engineers review, an analysis signed and sealed by the GFDEOR which establishes the pile lengths for temporary piles. Submit for the Engineer's acceptance, a Wave Equation analysis signed and sealed by the GFDEOR which establishes the driving criteria for temporary piles at least five working days prior to driving temporary production piles. The required driving resistance is equal to the sum of the factored design load plus the scour and down drag resistances shown in the Plans, divided by the appropriate resistance factor or the nominal bearing resistance shown in the Plans, whichever is higher:

The maximum resistance factor is 0.45 when only wave equation analysis is performed. However, a larger resistance factor may be applicable when additional testing is provided by the GFDEOR in accordance with Section 3.5.6 of Volume 1 of the FDOT Structures Manual.

455-5.12.4 Dynamic Load Tests: Dynamic load testing consists of estimating pile capacity by the analysis of electronic data collected from blows of the hammer during driving of an instrumented pile in accordance with 455-5.14.

455-5.12.5 Static Load Tests: Static load testing consists of applying a static load to the pile to determine its capacity. Use the Modified Quick Test Procedure in accordance with 455-2.2.1.

455-5.12.6 Fender Pile Installation: For piles used in fender systems, regardless of type or size of pile, either drive them full length or jet the piles to within 2 feet of cutoff and drive to cutoff elevation to seat the pile. The Engineer will not require a specific driving resistance unless noted in the Plans. Use methods and equipment for installation that do not damage the piles. If the method or equipment used causes damage to the pile, modify the methods or equipment.

455-5.12.7 Structures Without Test Piles: For structures without 100% dynamic testing or test piles, dynamically test the first pile(s) in each bent or pier at locations shown in the Plans to determine the blow count criteria for the remaining piles. Dynamically test at least 5% of the piles at each bent or pier (rounded up to the next whole number).

455-5.13 Test Piles:

455-5.13.1 General: All test piles will have dynamic load tests. Drive piles of the same cross-section and type as the permanent piles shown in the Plans, in order to determine any or all of the following:

1. installation criteria for the piles.
2. nature of the soil.
3. lengths of permanent piles required for the work.
4. driving resistance characteristics of the various soil strata.
5. amount of work necessary to obtain minimum required pile penetration.
6. the ability of the driving system to do the work.
7. the need for point protection.
8. Verify the bearing stratum is of sufficient thickness to prevent punching

shear failure.

Because test piles are exploratory in nature, drive them harder (within the limits of practical refusal), deeper, and to a greater bearing resistance than required for the permanent piling. Except for test piles which are to be statically or Statnamically load tested, drive test piles their full length or to practical refusal. Splice test piles which have been driven their full length and have developed only minimal required bearing, and proceed with further driving.

As a minimum, unless otherwise accepted by the Engineer, do not cease driving of test piles until obtaining the required bearing capacity continuously, where the blow count is increasing, for 10 feet unless reaching practical refusal first. For test piles which are to be statically or Statnamically load tested, ignore this minimum and drive these piles as anticipated for the production piles.

When test piles attain practical refusal prior to attaining minimum penetration, perform all work necessary to attain minimum penetration and the required bearing. Where practical, use water jets to break the pile loose for further driving. Where jetting is impractical, extract the pile and install a preformed pile hole through which driving will continue. Install instruments on all test piles.

455-5.13.2 Location of Test Piles: Drive all test piles in the position of permanent piles at the designated locations. Ensure that all test piles designated to be statically load tested are plumb. In the event that all the piles are battered at a static load test site, an out-of-position location for driving a plumb pile for the static load test may be selected.

455-5.13.3 Equipment for Driving: Use the same hammer and equipment for driving test piles as for driving the permanent piles. Also use the same equipment to redrive piles.

455-5.14 Dynamic Load Tests: Take dynamic measurements during the driving of piles designated in the Plans. Provide all personnel, materials and equipment for dynamic testing. For concrete piles, install instruments prior to driving and monitor all blows delivered to the pile. For steel production piles, the Engineer may accept instrumented set checks or redrives. Perform dynamic load tests to evaluate the following:

1. Suitability of the driving equipment, including hammer, capblock, pile cushion, and any proposed follower.

2. Pile capacity.

3. Pile stresses.

4. Energy transfer to pile.

5. Distribution of soil resistance.

6. Soil variables including quake and damping.

7. Hammer-pile-soil system for Wave Equation analyses.

8. Pile installation problems.

Either install embedded gauges in the piles in accordance with Standard Plans, Index 455-003, or attach instruments (strain transducers to measure force and accelerometers to measure acceleration) with bolts to the pile for dynamic testing.

Monitor the stresses in the piles with the dynamic test equipment during driving to ensure the maximum allowed stresses are not exceeded. If necessary, add additional cushioning, replace the cushions, or reduce the hammer stroke to maintain stresses below the maximum allowable. If dynamic test equipment measurements indicate non-axial driving, immediately realign the driving system. If the cushion is compressed to the point that a change in alignment of the hammer will not correct the problem, add cushioning or change the cushion.

Drive the pile to the required penetration and resistance.

Do not use a cold diesel hammer for a set-check. Generally, warm up the hammer by driving another pile or applying at least 20 blows to a previously driven pile or to timber mats placed on the ground.

455-5.15 Pile Lengths:

455-5.15.1 Test Pile Length: Provide the length of test piles shown in the Plans or as directed by the GFDEOR.

455-5.15.2 Production Pile Length

The production pile lengths shall be the lengths determined by the DTE and the GFDEOR based on all information available before the driving of the permanent piles, including, but not limited to, information gained from the driving of test piles, dynamic load testing, static load testing, supplemental soil testing, etc. When authorized by the Department, soil freeze information obtained during set checks and pile redrives may be used to determine authorized pile lengths for sites with extreme soil conditions.

After completion of the test pile program, production pile lengths and driving criteria shall be established in a letter signed and sealed jointly by the DTE and the GFDEOR. The letter will contain an itemized list of authorized pile lengths as well as the blow count criteria for acceptance of the pile, minimum penetrations, maximum strokes, criteria to replace cushions and any other conditions and limitations deemed appropriate for the safe installation of the piles. Use these lengths for furnishing the permanent piling for the structure. At least two working days, excluding weekends and Department observed holidays, prior to beginning of production pile driving, submit the letter and load test reports to the Engineer including the following electronic files (Windows compatible): dynamic testing data, signal matching data and results, and Wave Equation data and results.

If there are no test piles, provide the Production Pile Order Lengths in the Pile Data Table on the Structure Plans.

455-5.16 Allowable Driving Tolerances:

455-5.16.1 General: Meet the tolerances described in this Subarticle for the piles that are free standing without lateral restraint (after the template is removed). After the piles are driven, do not move the piles laterally to force them to be within the specified tolerances, except to move battered piles laterally to overcome the dead load deflections caused by the pile's weight. When this is necessary, submit calculations signed and sealed by a Specialty Engineer to the Engineer that verify the amount of dead load deflection prior to moving any piles.

455-5.16.2 Position: Ensure that the final position of the pile head at cut-off elevation is no more than 3 inches, or 1/6 of the diameter of the pile, whichever is less, laterally in the X or Y coordinate from the Plan position indicated in the Plans.

455-5.16.3 Axial Alignment: Ensure that the axial alignment of the driven piles does not deviate by more than 1/4 inches per foot from the vertical or batter line indicated in the Plans.

455-5.16.4 Elevation: Ensure that the final elevation of the pile head is no more than 1-1/2 inches above, or more than 4 inches below, the elevation shown in the Plans, however in no case shall the pile be embedded less than 8 inches into the cap or footing.

For fender piles, cut off piles at the elevation shown in the Plans to a tolerance of plus 0.0 inches to minus 2.0 inches using sawing or other means as accepted by the Engineer to provide a smooth level cut.

455-5.16.5 Deviation from Above Tolerances: Have the Contractor's Engineer of Record perform an evaluation of the as built foundation to determine whether a foundation redesign or an increase in the loading requirements of the piles is needed. Include the signed and sealed evaluation as part of the certification package submitted in accordance with 455-5.19. If the evaluation indicates the foundation or the pile load requirements must be modified, propose a redesign to incorporate out of tolerance piles into pile caps or footings, at no expense to the Department. Submit signed and sealed redesign drawings and computations to the Engineer for review and acceptance. Do not begin any proposed construction until the redesign has been reviewed and accepted by the Engineer, excepted as noted in 455-5.20.

455-5.17 Disposition of Pile Cut-offs, Test Piles, and Load Test Materials:

455-5.17.1 Pile Cut-offs:

Take ownership of any unused cut-off lengths remaining, and remove them from the right-of-way. Provide areas for their disposal.

455-5.17.2 Test Piles: Cut off, or build-up as necessary, test piles, and leave them in place as permanent piles. Extract and replace test piles driven in permanent position and found not suitable for use. Pull, or cut off at an elevation 2 feet below the ground surface or bottom of proposed excavation, test piles driven out of permanent position, and dispose of the removed portion of the test pile.

When test piles are required to be driven in permanent pile positions, the Contractor may elect to drive the test pile out of position provided that a replacement pile is furnished and driven in the position that was to be occupied by the test pile. Unless otherwise directed in the Plans or by the Engineer, retain ownership of test piles that are pulled or cut off and provide areas for their disposal.

455-5.18 Recording: Inspect and record all the pile installation activities, including but not limited to handling, jetting, predrilling, performing and driving on the Department's Pile Driving Record form. Steel piles and dynamically tested concrete piles in accordance with 455-5.14 will not require inspection during handling. Keep a pile driving log for each pile installed

whether it is, or is not, instrumented. Within one working day after completing the installation of a pile, submit the Pile Driving Record to the Engineer.

455-5.19 Foundation Certification Packages: Submit certification packages of pile foundations to the Engineer prior to Pile Verification Testing. A separate Foundation Certification Package must be submitted for each foundation unit. A foundation unit is defined as all the piles within one bent or pier for a specific bridge for each phase of construction. Each Foundation Certification Package shall contain an original certification letter signed and sealed by the GFDEOR certifying the piles have the required axial capacity including compression and uplift, lateral stability, pile integrity, settlements will not affect the functionality of the structure, and that the inspection of the pile installation was performed under the supervision of the GFDEOR. The package shall also include all pile driving logs, EDC records, all supplemental dynamic testing raw data and analyses for the foundation unit, and the signed and sealed evaluation performed to address out of tolerance piles in accordance with 455-5.16.5. The certification shall not be contingent on any future repair or testing, or any approval by the Engineer.

For foundation units where all piles are dynamically load tested by the same DTE, the foundation certification package may be prepared by the DTE, and the DTE may sign and seal the foundation layout and pile data table to reflect as-built conditions if the DTE is prequalified under the appropriate category in Florida Administrative Code (F.A.C.) 14-75.

455-5.20 Verification: One working day, excluding weekends and Department observed holidays, after receipt of the Foundation Certification Package, the Engineer will determine whether a pile in that foundation unit will be selected for verification testing. Based on its review of the certification package, the Engineer may or may not choose a pile for verification testing in any or all foundation units. For the pile selected by the Engineer for verification testing, the Engineer will provide the dynamic load test equipment and personnel for the Pile Verification Testing. Provide the driving equipment and pile driving crew for the Pile Verification Testing and provide support as needed to prepare the piles for testing. The Engineer will provide the results of the verification testing and identify additional needs for verification testing within one working day of testing.

If the capacity or integrity of any pile is found to be deficient, the Engineer will reject the entire certification package for the foundation unit, and the Contractor shall:

1. Correct the deficiency;
2. Correct the process that led to the deficiency;
3. Demonstrate to the Engineer that the remainder of the piles in the foundation unit are acceptable, including additional dynamic load tests to verify pile capacity and integrity, and;
4. Recertify the foundation unit.

One working day, excluding weekends and Department observed holidays, after receipt of the recertification, the Engineer shall then determine whether additional verification testing is required in that foundation unit. If the capacity or integrity of a verification pile is found to be deficient, additional cycles of deficiency correction and verification testing shall be completed until no more pile capacity or integrity deficiencies are detected or the design is modified accordingly. Piles shall not be cut-off nor bent/pier caps placed prior to successful completion of the Pile Verification Testing Program for that foundation unit. In case of disagreement of dynamic testing results, the Engineer's results will be final and will be used for acceptance.

On land foundation units or water foundation units when the pile cutoff is at least six feet above mean high water, the Contractor may cut-off piles prior to a complete submittal of the Certification Package or to a successful completion of the Pile Verification Testing Program at its own risk. If any piles in a foundation unit are cut-off prior to the submittal of a certification package or completion of the Pile Verification Testing Program and the Engineer determines that verification testing is required, the Contractor shall perform, at no expense to the Department, any work and labor required to expose any pile selected for verification to allow the installation of the instruments in dry conditions and to provide references and access to the Engineer for such testing. Piles experiencing damage during the verification testing or requiring build-up after the verification shall be repaired by the Contractor at no expense to the Department. No pile bent/cap shall be poured prior to successful completion of the Pile Verification Testing Program for that foundation unit or notification by the Engineer that no verification will be required.

455-6 Timber Piling.

455-6.1 Description: Drive timber piles of the kind and dimensions specified in the Plans at the locations and to the elevations shown in the Plans.

455-6.2 Materials: Meet the timber piling requirements of Section 953. Treat the piles according to the applicable provisions of Section 955. Treat all cuts and drilled holes in accordance with 470-3.

455-6.3 Preparation for Driving:

455-6.3.1 Caps: Protect the heads of timber piles during driving, using a cap of approved type, that will distribute the hammer blow over the entire cross-section of the pile. When necessary, cut the head of the pile square before beginning pile driving.

455-6.3.2 Collars: Provide collars or bands to protect piles against splitting and brooming at no expense to the Department.

455-6.3.3 Shoes: Provide piles shod with metal shoes, of a design satisfactory to the Engineer, at no expense to the Department. Shape pile tips to receive the shoe and install according to the manufacturer's directions.

455-6.4 Storage and Handling: Store and handle piles in the manner necessary to avoid damage to the piling. Take special care to avoid breaking the surface of treated piles. Do not use cant dogs, hooks, or pike poles when handling and storing the piling.

455-6.5 Cutting Off: Saw off the tops of all timber piles at the elevation indicated in the Plans. Saw off piles which support timber caps to the exact plane of the superimposed structure so that they exactly fit. Withdraw and replace broken, split, or misplaced piles.

455-6.6 Build-ups: The Engineer will not permit splices or build-ups for timber piles. Extract piles driven below Plan elevation and drive a longer pile.

455-6.7 Pile Heads:

455-6.7.1 Piles with Timber Caps: On piles wider than the timber caps, dress off the part of the pile head projecting beyond the sides of the cap to a slope of 45 degrees. Coat the cut surface with the required preservative and then place a sheet of copper, with a weight of 10 ounces per square foot or greater, meeting the requirements of ASTM B370. Provide a cover measuring at least 4 inches more in each dimension greater than the diameter of the pile. Bend the cover down over the pile and fasten the edges with large head copper nails or three wraps of No. 12 copper wire.

455-6.7.2 Fender and Bulkhead Piles: Paint the heads of fender piles and of bulkhead piles with preservative and then cover with copper as provided above for piles supporting timber caps.

455-7 Prestressed Concrete Piling.

455-7.1 Description: Provide prestressed concrete piles that are manufactured, cured, and driven in accordance with the Contract Documents. Provide piles full length without splices when transported by barge or the pile length is less than or equal to 120 feet. When piles are transported by truck and the pile length exceeds 120 feet or the maximum length for a 3-point pick-up according to Standard Plans, Index 455-001, and splicing is desired, provide minimal splices. Include the cost of the splices in the cost of the pile.

455-7.2 Manufacture: Fabricate piles in accordance with Section 450. When embedded gauges will be used for dynamic load testing, supply and install in square prestressed concrete piles in accordance with Standard Plans Index 455-003. Ensure the embedded gauges are installed by personnel approved by the manufacturer.

455-7.3 Storage and Handling:

455-7.3.1 Time of Driving Piles: Drive prestressed concrete piles at any time after the concrete has been cured in accordance with Section 450, and the concrete compressive strength is equal to or greater than the specified 28 day compressive strength.

455-7.3.2 Storage: Support piles on adequate dunnage both in the prestress yard and at the job site in accordance with the locations shown in the Standard Plans to minimize undue bending stresses or creating a sweep or camber in the pile.

455-7.3.3 Handling: Handle and store piles in the manner necessary to eliminate the danger of fracture by impact or of undue bending stresses in handling or transporting the piles from the forms and into the leads. In general, lift concrete piles by means of a suitable bridge or slings attached to the pile at the locations shown in the Standard Plans. Construct slings used to handle piles of a fabric material or braided wire rope constructed of six or more wire ropes which will not mar the corners or the surface finish of the piles. Do not use chains to handle piles. During transport, support concrete piles at the lifting locations shown in the Standard Plans or fully support them throughout 80% or more of their length. In handling piles for use in salty or brackish water, exercise special care to avoid damaging the surface and corners of the pile. If an alternate transportation support arrangement is desired, submit calculations, signed and sealed by the Specialty Engineer, for acceptance by the Engineer prior to transporting the pile. Calculations must show that the pile can be transported without exceeding the bending moments calculated using the support locations shown in the Plans.

455-7.4 Cracked Piles: The Engineer will reject any pile that becomes cracked in handling to the point that a transverse or longitudinal crack extends through the pile, shows failure of the concrete as indicated by spalling of concrete on the main body of the pile adjacent to the crack, which in the opinion of the Engineer will not withstand driving stresses, or becomes damaged during installation. The Engineer will not reject any pile for the occasional minor surface hairline cracking caused by shrinkage.

Do not drive piling with irreparable damage, which is defined as any cracks that extend through the pile cross-sectional area that are, or will be, below ground or water level at the end of driving. Remove and replace broken piles or piles cracked to the extent described above at no expense to the Department. The Engineer will accept cracks less than 0.005 inches which do not extend through the pile. Using approved methods, cut off and splice or build-up to cut-off elevation piles with cracks greater than 0.005 inches at the pile head or above ground or water level, and piles with cracks above ground or water level which extend through the cross-sectional area of the pile. The Engineer, at his discretion, may require correction of pile damage or pile cracks by cutting down the concrete to the plane of sound concrete below the crack and

rebuilding it to cut-off elevation, or the Engineer may reject the pile. Extract and replace rejected piles that cannot be repaired, at no expense to the Department.

Take appropriate steps to prevent the occurrence of cracking, whether due to handling, transporting or driving.

455-7.5 Preparation for Transportation: Cut strands flush with the surface of the concrete using an abrasive cutting blade before transporting the piles from the casting yard.

Cut and patch the metal lifting devices in accordance with 450-9.2.1.

455-7.6 Method of Driving: Unless otherwise directed, drive piles by a hammer or by means of a combination of water jets and hammer when jetting is allowed. When using jets in combination with a hammer, withdraw the jets and drive the pile by the hammer alone to secure final penetration and to rigidly fix the tip end of the pile. Keep jets in place if they are being used to continuously eliminate the soil resistance in the scour zone.

455-7.7 Extensions and Build-ups Used to Increase Production Lengths:

455-7.7.1 General: Where splices, extensions and build-ups for concrete piles are necessary, construct them in accordance with Standard Plans, Index 455-002.

These requirements are not applicable to specially designed piling. Make splices for special pile designs as shown in the Plans.

455-7.7.2 Extensions to be Driven or Those 21 feet or Longer: Construct extensions to be driven or extensions 21 feet or longer in length in accordance with the details shown in the Plans and in a manner including the requirements, sequences, and procedures outlined below:

1. Cast a splice section in accordance with Section 450 with the dowel steel in the correct position and alignment.
2. Drill dowel holes using an approved steel template that will position and align the drill bit during drilling. Drill holes a minimum of 2 inches deeper than the length of the dowel to be inserted.
3. Clean the drilled dowel holes by inserting a high pressure air hose to the bottom of the hole and blowing the hole clean from the bottom upward. Eliminate any oil, dust, water, and other deleterious materials from the holes and the concrete surfaces to be joined.
4. Place forms around joints between the pile sections.
5. Mix the adhesive components in accordance with the manufacturer's directions. Do not mix sand or any other filler material with the epoxy components unless it is prepackaged by the manufacturer for this specific purpose. Use adhesives meeting the requirements of Section 926 for Type B Epoxy Compounds.
6. After ensuring that all concrete surfaces are dry, fill the dowel holes with the adhesive material.
7. Insert the dowels of the spliced section into the adhesive filled holes of the bottom section and position the spliced section so that the axes of the two sections are in concentric alignment and the ends of the abutting sections are spaced 1/2 inches apart. The Contractor may use small steel spacers of the required thickness provided they have 3 inches or more of cover after completing the splice. Fill the space between the abutting sections completely with the adhesive.
8. Secure the spliced sections in alignment until the adhesive is cured in accordance with the manufacturer's directions for the time appropriate with the prevailing ambient temperatures. Do not utilize the crane to secure the pile extension during the adhesive

cure time. Utilize alignment braces to maintain the proper pile alignment during the epoxy cure time.

9. After curing is completed, remove alignment braces and forms and clean and dress the spliced area to match the pile dimensions.

When dowel splices need to be driven, perform dynamic instrumentation during the driving of each dowel spliced pile to monitor and control the stresses and to verify the splicing integrity. Replace any damaged pile splices in accordance with 455-3. Provide the Engineer 48 hours advance notification prior to driving spliced piles.

455-7.7.3 Precast Reinforced Non-Drivable Build-ups less than 21 feet:

Construct precast reinforced non-drivable build-ups less than 21 feet in accordance with the requirements of this Subarticle, Section 346, and Section 400. Provide the same material for the form surfaces for precast build-ups as was used to form the prestressed piles. Use concrete of the same mix as used in the prestressed pile and dimension the cross-section the same as piling being built up. Install build-ups as specified in 455-7.7.2(2) through 455-7.7.2(9). Apply to the build-ups the same surface treatment or sealant applied to the prestressed piles.

455-7.8 Pre-Planned Splices: Construct splices in accordance with the dowel splice method contained in the Standard Plan Indexes or using proprietary splices which are listed on the Department’s Approved Product List (APL). Splice test piles in the same manner as the production piles. Include in the pile installation plan, the chosen method of splicing and the approximate locations of the splice. Generally, place the splice at approximately the midpoint between the estimated pile tip and the ground surface, considering scour if applicable. Stagger the splice location between adjacent piles by a minimum of 10 feet. Obtain the Engineer’s approval prior to constructing any pile sections. Construct piles which are to be spliced using the dowel splice with preformed dowel holes in the bottom section and embedded dowels in the upper section.

When dowel splices need to be driven, perform dynamic instrumentation during the driving of each dowel spliced pile to monitor and control the stresses and verify the splicing integrity. Replace any damaged pile splices in accordance with 455-3. Provide the Engineer 48 hours advance notification prior to driving spliced piles.

Mechanical pile splices must be capable of developing the following capacities in the pile section unless shown otherwise in the Plans and capable of being installed without damage to the pile or splice:

1. Compressive strength = (Pile Cross sectional area) x (28 day concrete strength)

2. Tensile Strength = (Pile Cross sectional area) x 900 psi

Pile Size (inches)	Bending Strength (kip-feet)
18	245
20	325
24	600
30	950

455-7.9 Pile Cut-offs: After the completion of driving, cut piles off which extend above the cut-off elevation with an abrasive saw. Make the cut the depth necessary to cleanly cut through the prestressed strands. Take ownership and dispose of cut-off sections not used elsewhere as allowed by this Section.

455-8 Steel Piling.

455-8.1 Description: Furnish, splice, drive, and cut off structural steel shapes to form bearing piles. Include in this work the preparation of a smooth and square pile top meeting the requirements of ASTM A252 or API 5L prior to driving, installation of structural steel bracing by bolting or welding, construction of splices and the filling of pipe piles with the materials specified in 455-8.9.

455-8.2 Material: For the material in steel piles, pile bracing, scabs, wedges, and splices, meet the requirements of Section 962.

455-8.3 Pile Splices: Order and use the full authorized pile length where practicable. Do not splice to obtain authorized lengths less than 40 feet except when shown in the Plans. Locate all splices in the authorized pile length in portions of the pile expected to be at least 15 feet below the final ground surface after driving. When it is not practicable to provide authorized pile lengths longer than 40 feet in a single length, use no more than one field splice per additional 40 feet of authorized pile length. Shop splices may be used to join single lengths of pile which are at least 20 feet in length. One shorter segment of pile may be used to achieve the authorized pile length when needed.

Where the pile length authorized is not sufficient to obtain the required bearing value or penetration, order an additional length of pile and splice it to the original length.

Make all splices in accordance with details shown in the Plans and in compliance with the general requirements of AWS D1.1 or American Petroleum Institute Specification 5L (API 5L).

455-8.4 Welding: Make all welded connections to steel piles by electric arc welding, in accordance with details shown in the Plans and in compliance with the general requirements of AWS D1.5. Electroslag welding is not permitted. Welds will be inspected by visual methods.

455-8.5 Pile Heads and Tips: Cut off all piles at the elevation shown in the Plans. If using a cutting torch, make the surface as smooth as practical.

Where foundation material is so dense that the Contractor cannot drive the pile to the required penetration and firmly seat it without danger of crumpling the tip, reinforce the tips with cast steel point protectors. Construct point protectors in one piece of cast steel meeting the requirements of ASTM A27, Grade 65-35 heat treated to provide full bearing for the piles. Attach points by welding according to the recommendations of the manufacturer.

455-8.6 Pile Bent Bracing Members: Place structural steel sway and cross bracing, and all other steel tie bracing, on steel pile bents and bolt or weld in place as indicated in the Plans. Where piles are not driven into position in exact alignment as shown in the Plans, furnish and place fills and shims as required to square and line up faces of flanges for cross bracing.

455-8.7 Coating: Coat exposed parts of steel piling, wedging, bracing, and splices in accordance with the provisions for coating structural steel as specified in Section 560.

455-8.8 Storage and Handling: While handling or transporting the piles from the point of origin and into the leads, store and handle in the manner necessary to avoid damage due to bending stresses. In general, lift steel piles by means of a suitable bridge or a sling attached to the pile at appropriate points to prevent damage. Lift the pile from the horizontal position in a manner that will prevent damage due to bending of the flanges and/or web.

455-8.9 Filling Pipe Piles: Ensure closed-end pipe piles are watertight. When required by the Plans, fill pipe piles with the specified materials. Use clean concrete sands and concrete meeting the requirements of Section 346. Place concrete in open ended pipes containing water using methods in accordance with 455-15.9 with modified tremie and pump line sizes. Concrete

may be placed directly into pipes which are dry. Construct and place reinforcement cages in accordance with 455-16, except the minimum number of spacers per level is three. Reinforcement cages may be installed before concrete placement or after concrete placement is completed if proper alignment and position is obtainable.

455-9 Sheet Piling.

455-9.1 Description: Leave permanent piling in place as part of the finished work and remove temporary piling after each construction phase unless otherwise authorized by the Engineer.

455-9.2 Materials: Meet the following requirements:

Concrete	Section 346
Bar Reinforcement	Section 931
Prestressing Reinforcement.....	Section 933
Steel Sheet Piles*	Section 962

*For temporary steel sheet piles meet the requirements specified in the Plans.

455-9.3 Steel Sheet Piling: Drive steel sheet piling and cut off true to line and grade. Install steel sheet piling with a suitable hammer. Remove and replace any section damaged during handling and installation at no additional expense to the Department.

455-9.3.1 Method of Installation: Where rock or strong material is encountered such that the sheet piles cannot be set to grade by driving, remove the strong material by other acceptable means, such as excavation and backfilling, drilling or by punching.

455-9.4 Concrete Sheet Piling:

455-9.4.1 Description: Ensure that concrete sheet piling is of prestressed concrete construction and manufactured, cured, and installed in accordance with the requirements of the Contract Documents.

455-9.4.2 Manufacture of Piles: Ensure that the piles are fabricated in accordance with Section 450.

455-9.4.3 Method of Installation: Jet concrete sheet piling to grade where practical. Use a minimum of two jets. Provide water at the nozzles of sufficient volume and pressure to freely erode material adjacent to the piles. Where encountering rock or strong material, such that the sheet piles cannot be set to grade by jetting, remove the strong materials by other acceptable means, such as excavation and backfilling, drilling or by punching with a suitable punch.

455-9.4.4 Grouting and Caulking: Concrete sheet piles are generally detailed to have tongues and grooves on their lower ends, and double grooves on their upper ends. Where so detailed, after installation, clean the grooves of all sand, mud, or debris, and fully grout the grooves. Use approved plastic bags (sheaths) which will meet the shape and length of the groove to be grouted to contain the plastic grout within the double grooves. Provide grout composed of one part cement and two parts sand. Use clean A-3 sand or sand meeting the requirements of Section 902 in this grout. In lieu of sand-cement grout, the Contractor may use concrete meeting the requirements of Section 347, using small gravel or crushed stone coarse aggregate. Deposit the grout through a grout pipe placed within a watertight plastic sheath (bag) extending the full depth of the double grooves and which, when filled, completely fills the slot formed by the double grooves.

455-9.5 Storage and Handling: Handle and store all sheet piles in a manner to prevent damage. Handle long sheet piles with fabric slings or braided wire rope constructed of six or more wire ropes placed at appropriate lift points to prevent damage due to excessive bending.

455-10 Pile Installation Plan (PIP).

455-10.1 General: At the preconstruction conference or at least 15 days prior to driving the first pile, submit a Pile Installation Plan for review by the Engineer. The PIP shall be used to govern all pile installation activities. In the event that deviations from the PIP are observed, the Engineer may perform Independent Verification Testing/Review of the Contractor's equipment, procedures, personnel and PIP at any time during production pile driving. If, as determined by the Engineer, pile driving equipment, procedures and/or personnel for the PIP is deemed inadequate to consistently provide undamaged driven piling meeting the contract requirements, the Contractor's PIP acceptance may be withdrawn pending corrective actions. Production driving shall then cease and not restart until corrective actions have been taken and the PIP re-accepted.

Ensure the Pile Driving Installation Plan information includes the following:

1. List and size of proposed equipment including cranes, barges, driving equipment, jetting equipment, compressors, and preformed pile hole equipment on the Department's Pile Driving Installation Plan Form (Form No. 700-020-01). Include manufacturer's data sheets on hammers.
2. Methods to determine hammer energy in the field for determination of pile capacity. Include in the submittal necessary charts and recent calibrations for any pressure measuring equipment.
3. Detailed drawings of any proposed followers.
4. Detailed drawings of templates.
5. Details of proposed load test equipment and procedures, including recent calibrations of jacks and required load cells.
6. Sequence of driving of piles for each different configuration of pile layout.
7. Details of proposed features and procedures for protection of existing structures.
8. Required shop drawings for piles, cofferdams, etc.
9. Methods and equipment proposed to prevent displacement of piles during placement and compaction of fill within 15 feet of the piles.
10. Methods to prevent deflection of battered piles due to their own weight and to maintain their as-driven position until casting of the pile cap is complete.
11. Proposed pile splice locations and details of any proprietary splices anticipated to be used.
12. Methods and equipment proposed to prevent damage to voided or cylinder piles due to interior water pressure.
13. Name and experience record of pile driving superintendent or foreman in responsible charge of pile driving operations. Ensure the pile driving superintendent or foreman in responsible charge of the pile driving operations has the experience requirements of 105-8.13 installing driven piles of the size and depth shown in the Plans.
14. The names of the CTQP qualified inspectors assigned to inspect the pile installation. If the Dynamic Testing Engineer is also a CTQP qualified pile driving inspector and is able to perform both operations, then an additional pile driving inspector is not required when driving piles using embedded sensors.
15. The quality control processes to ensure the required capacity is achieved in all piles. Include in the PIP the steps and analyses that would be performed when

driving conditions change (such as unanticipated tip elevations, hammer modifications, presence of temporary piles and structures, preforming, changes, etc.).

16. The name and contact information for the single representative of the Contractor, independent of field operations personnel, to resolve to the Engineer's satisfaction conflicts in the driving procedures or interpretations of the driving criteria. This person shall be available within two hours notice, and shall have the authority to refer issues to higher levels (corporate, if needed).

17. A letter from the GFDEOR certifying concurrence with the PIP.

Notify the Engineer of any test pile driving and production pile driving at least 1 week prior to beginning the installation operations of any pile.

455-10.2 Acceptance of the Pile Installation Plan: The Engineer will evaluate the PIP for conformance with the Contract Documents. Within five working days, excluding weekends and Department observed holidays, after receipt of the plan, the Engineer will notify the Contractor of any comments and additional information required and/or changes that may be necessary to satisfy the Contract Documents. Submit changes and respond to the Engineer's comments and allow at least two working days, excluding weekends and Department observed holidays, for the Engineer to review the revised PIP.

All equipment and procedures are subject to satisfactory field performance. Make required changes to correct unsatisfactory field performance. The Engineer will give final acceptance after the Contractor makes necessary modifications. Do not make any changes in the driving system after acceptance without a revised PIP with concurrence of the GFDEOR and acceptance by the Engineer. A hammer repaired on site or removed from the site and returned is considered to have its performance altered (efficiency increased or decreased), which is considered a change in the driving system. Perform a dynamic load test in accordance with 455-5.14 on the first pile driven with this hammer to confirm the driving criteria is still appropriate at no additional compensation.

Acceptance of the PIP by the Engineer does not relieve the Contractor of the responsibility to perform the work in accordance with the Contract Documents. The Engineer's acceptance is not a guarantee that the chosen methods and equipment are capable of obtaining the required results; this responsibility lies with the Contractor.

ARTICLE 455-11 is deleted:

455-12 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying completed pile foundations, in place and accepted. No separate payment will be made for any items of work associated with the construction of piling. No additional payment or adjustments will be made for set-checks, re-drives, dynamic load tests, pile instrumentations, splice installations and driving, build-ups, pile extractions, preformed holes or other associated activities.

C. DRILLED SHAFTS

455-13 Description.

Construct drilled shaft foundations consisting of reinforced concrete drilled shafts.

455-14 Materials.

455-14.1 Concrete: Use concrete meeting the requirements of Section 346, unless otherwise shown in the Plans.

455-14.2 Reinforcing Steel: Meet the reinforcing steel requirements of Section 415.

455-15 Construction Methods and Equipment.

455-15.1 General Requirements:

455-15.1.1 Templates: When drilling from a barge, provide a fixed template, adequate to maintain shaft position and alignment during all excavation and concreting operations. Do not use floating templates (attached to a barge). When the Contractor fails to properly maintain shaft position and alignment without use of a template when drilling on land, provide a fixed template, adequate to maintain shaft position and alignment during all excavation and concreting operations.

455-15.1.2 Drilled Shaft Installation Plan (DSIP): At the preconstruction conference or at least 15 days prior to constructing the first drilled shaft, submit a Drilled Shaft Installation Plan (DSIP) for review and acceptance by the Engineer. The DSIP will be used to govern all drilled shaft construction activities. In the event that deviations from the DSIP are observed, the Engineer may perform Independent Verification Testing/Review of the Contractor's equipment, procedures and personnel at any time during production drilled shaft construction. If, as determined by the Engineer, drilled shaft construction equipment, procedures or personnel is deemed inadequate to consistently provide drilled shafts meeting the contract requirements, the Contractor's DSIP may be withdrawn pending corrective actions. All drilled shaft construction activities shall then cease and not restart until corrective actions have been taken and the DSIP has been re-accepted.

Include in the DSIP the following details:

1. Name and experience record of drilled shaft superintendent or foreman in responsible charge of drilled shaft operations. Ensure the drilled shaft superintendent or foreman in responsible charge of the drilled shaft operations has the experience requirements of 105-8.13 installing drilled shafts of the size and depth shown in the Plans using the following methods:

- a. Wet Method (mineral and polymer slurry),
- b. Casings up to the length shown in the Plans,
- c. Shaft drilling operations on water under conditions as

shown in the Plans.

2. List and size of proposed equipment, including, but not limited to, cranes, drills, augers, bailing buckets, final cleaning equipment, desanding equipment, slurry pumps, core sampling equipment, tremies or concrete pumps, and casings and equipment to install and remove casing.

3. Details of sequence of construction operations and sequence of shaft construction in bents or shaft groups.

4. Details of shaft excavation methods, including casing installation procedures.

5. Details of slurry, including proposed methods to mix, circulate, desand, test methods, and proposed CTQP certified technicians that will perform and document the fluid tests.

6. Details of proposed methods to clean the shaft excavation.

7. Details of shaft reinforcement, including methods to ensure centering/required cover, cage integrity during placement, placement procedures, cage support, and tie downs.

8. Details of concrete placement, including elapsed concrete placement times and proposed operational procedures for concrete tremie or pump, including initial placement, raising during placement, and overfilling of the shaft concrete. Include provisions to ensure proper final shaft cutoff elevation.

9. Details of casing removal when removal is required, including minimum concrete head in casing during removal.

10. Required submittals, including shop drawing and concrete design mixes.

11. Details of any required load tests, including equipment and procedures, and recent calibrations for any jacks or load cells.

12. Proposed Cross-Hole Sonic Logging (CSL) and Thermal Integrity Testing for Drilled (TITDS) Specialty Engineer to supervise field testing and report the test results.

13. Methods and equipment proposed to prevent displacement of casing and/or shafts during placement and compaction of fill.

14. Provide the make and model of the shaft inspection device, if applicable, and procedures for visual inspection.

15. Details of environmental control procedures used to prevent loss of slurry or concrete into waterways or other protected areas.

16. Proposed schedule for test shaft installation, load tests and production shaft installation.

17. For drilled shafts for constructed using polymer slurry, identify the polymer slurry meeting the requirements of 455-15.8.3, the pH and viscosity ranges recommended by the manufacturer for the materials to be excavated and a description of the mixing method to be used. Submit the Material Safety Data Sheets (SDS) for the product, and a current certification that the polymer slurry and components meet the requirements of 455-15.8.3. The certification shall be attested to within the past one year by a person having legal authority to bind the manufacturing company. Submit the contact information for the manufacturer's representative available for immediate contact during shaft construction and the representative's schedule of availability.

18. Methods to identify and remediate drilled shaft deficiencies.

19. Names of the CTQP qualified inspectors assigned to inspect the drilled shaft installation.

20. The name and contact information for the single representative of the Contractor, independent of field operations personnel, to resolve to the Engineer's satisfaction, conflicts in the drilled shaft installation procedures. This person shall be available within two hours notice, and shall have the authority to refer issues to higher levels (corporate, if needed).

21. Procedure for grouting non-destructive testing access tubes.

22. A letter from the GFDEOR certifying concurrence with the

DSIP.

455-15.1.2.1 Acceptance of the Drilled Shaft Installation Plan (DSIP):

The Engineer will evaluate the DSIP for conformance with the Contract Documents. Within

five working days, excluding weekends and Department observed holidays, after receipt of the plan, the Engineer will notify the Contractor of any comments and additional information required and/or changes that may be necessary in the opinion of the Engineer to satisfy the Contract Documents. The Engineer will reject any part of the plan that is unacceptable. Submit changes agreed upon for reevaluation. The Engineer will notify the Contractor within two working days, excluding weekends and Department observed holidays, after receipt of proposed changes of their acceptance or rejection. All equipment and procedures are subject to trial and satisfactory performance in the field.

Acceptance by the Engineer does not relieve the Contractor of the responsibility to perform the work in accordance with the Contract Documents. The Engineer's acceptance is not a guarantee that the chosen methods and equipment are capable of obtaining the required results, this responsibility lies with the Contractor.

455-15.1.3 General Methods & Equipment: Perform the excavations required for the shafts, through whatever materials encountered, to the dimensions and elevations shown in the Contract Documents, using methods and equipment suitable for the intended purpose and the materials encountered. Provide drilling tools with a diameter not smaller than one inch of the shaft diameter required in the Plans. Provide equipment capable of constructing shafts supporting bridges to a depth equal to the deepest shaft shown in the Plans plus 15 foot or plus three times the shaft diameter, whichever is greater, except when the Plans require equipment capable of constructing shafts to a deeper depth. Provide equipment capable of constructing shafts supporting sign, signal, lighting and ITS structures to a depth equal to the deepest shaft shown in the Plans plus 5 feet.

Construct drilled shafts according to the Contract Documents using generally either the dry method, wet method, casing method, or permanent casing method as necessary to produce sound, durable concrete foundation shafts free of defects. Use the permanent casing method only when required by the Plans. When the Plans describe a particular method of construction, use this method. When the Plans do not describe a particular method, propose a method on the basis of its suitability to the site conditions and submit it for acceptance by the Engineer.

Set a suitable temporary removable surface casing from at least 1 foot above the ground surface to at least 1-1/2 shaft diameters below the ground surface to prevent caving of the surface soils and to aid in maintaining shaft position and alignment. Do not use a temporary casing larger than 12 inches of the shaft diameter. Fill the oversized temporary casing with drilled shaft concrete at no additional expense to the Department. Withdraw the surface casing after concrete placement.

For drilled shafts installed to support sign, signal, lighting and ITS structures, provide temporary surface casings from at least 1 foot above the ground surface to at least 5 feet below the ground surface. For sign, signal, lighting and ITS structures foundations located within permanent sidewalks or within 5 feet of curb sections, provide temporary surface casings from no lower than the top of sidewalk to at least 5 feet below the ground surface.

For drilled shafts installed to support sign, signal, lighting and ITS structures, do not attempt to excavate the shaft using plain water or natural slurry. Do not attempt to excavate the shaft using dry construction method unless specifically indicated in the Plans or approved by the Engineer.

455-15.2 Dry Construction Method: Use the dry construction method only at sites where the ground water table and soil conditions, generally stiff to hard clays or rock above the

water table, make it feasible to construct the shaft in a relatively dry excavation and where the sides and bottom of the shaft are stable and may be visually inspected prior to placing the concrete.

In applying the dry construction method, drill the shaft excavation, remove accumulated seepage water and loose material from the excavation and place the shaft concrete in a relatively dry excavation.

Use the dry construction method only when shaft excavations, as demonstrated in a test hole, have 12 inches or less of seepage water accumulated over a four hour period, the sides and bottom remain stable without detrimental caving, sloughing, or swelling for a four hour period, and the loose material and water can be satisfactorily removed prior to inspection and prior to placing concrete. Use the wet construction method or the temporary casing construction method for shafts that do not meet the requirements for the dry construction method.

455-15.3 Wet Construction Method: Use the wet construction method at all sites where it is impractical to provide a dry excavation for placement of the shaft concrete.

The wet construction method consists of keeping the shaft excavation filled with fluid (mineral slurry, polymer slurry, natural slurry or water), desanding and cleaning the slurry and final cleaning of the excavation by means of a bailing bucket, air lift, submersible pump or other suitable devices and placing the shaft concrete (with a tremie or concrete pump extending to the shaft bottom) which displaces the water or slurry during concreting of the shaft excavation.

Where drilled shafts are located in open water areas, construct the shafts by the wet method using exterior casings extending from above the water elevation into the ground to protect the shaft concrete from water action during placement and curing of the concrete. Install the exterior casing in a manner that will produce a positive seal at the bottom of the casing so that there is no intrusion or extrusion of water or other materials into or from the shaft excavation.

455-15.4 Temporary Casing Construction Method: Use the temporary casing method at all sites where it is inappropriate to use the dry or wet construction methods without the use of temporary casings other than surface casings. In this method, the casing is advanced prior to excavation and withdrawn after concrete placement. When a formation is reached that is nearly impervious, seal in the nearly impervious formation. Proceed with drilling as with the wet method to the projected depth. Proceed with the placement of the concrete as with the dry method. In the event seepage conditions prevent use of the dry method, complete the excavation and concrete placement using wet methods.

Where drilling through materials having a tendency to cave, advance the excavation by drilling in a mineral or polymer slurry. In the event that a caving layer or layers are encountered that cannot be controlled by slurry, install temporary removable casing through such caving layer or layers. The Engineer may require overreaming to the outside diameter of the casing. Take whatever steps are required to prevent caving during shaft excavation including installation of deeper casings. If electing to remove a casing and replace it with a longer casing through caving soils, backfill the excavation. The Contractor may use soil previously excavated or soil from the site to backfill the excavation. The Contractor may use other acceptable methods which will control the size of the excavation and protect the integrity of the foundation soils to excavate through caving layers.

Before withdrawing the casing, ensure that the level of fresh concrete is at such a level that the fluid trapped behind the casing is displaced upward. As the casing is withdrawn, maintain the level of concrete within the casing so that fluid trapped behind the casing is

displaced upward out of the shaft excavation without mixing with or displacing the shaft concrete.

The Contractor may use the casing method, when accepted by the Engineer, to construct shafts through weak caving soils that do not contribute significant shaft shear resistance. In this case, place a temporary casing through the weak caving soils before beginning excavation. Conduct excavation using the dry construction method where appropriate for site conditions and the wet construction method where the dry construction method is not appropriate. Withdraw the temporary casing during the concreting operations unless the Engineer accepts otherwise.

455-15.5 Permanent Casing Construction Method: Use the permanent casing method when required by the Plans. In this method, place a casing to the prescribed depth before beginning excavation. If the Contractor cannot attain full penetration, the Contractor may excavate through the casing and advance the casing until reaching the desired penetration.

Construct the shaft in accordance with 455-15.4 except for cutting the casing off at the prescribed elevation upon reaching the proper construction sequence and leaving the remainder of the casing in place.

455-15.5.1 Temporary Extension of Permanent Casing: When the wet method does not provide enough support to excavate and clean the drilled shaft extension below the permanent casing tip elevations shown in the Plans, the permanent casing may be temporarily extended to an elevation deeper than the tip elevation at no additional expense to the Department. The rock socket length must be extended as specified in 455-15.7 and the casing raised to the original casing tip elevation shown in the Plans after the concrete placement. Include details of this procedure in the DSIP for the Engineer's review and approval.

455-15.5.2 Temporary Casing to Stabilize Excavation below Permanent Casing: To stabilize the excavation below the permanent casing tip elevation, a temporary casing inside an oversized permanent casing may be used at no additional expense to the Department. The permanent casing must have an inside diameter no more than 6 inches larger than the drilled shaft diameter specified in the Plans.

The following requirements apply:

1. Excavate and clean the materials from inside the permanent casing. Ensure all materials are removed from the inside wall of the permanent casing.
2. Install the temporary casing prior to excavating below the permanent casing tip elevation. The temporary casing must have a minimum internal diameter equal to the shaft diameter required in the Plans.
3. If the temporary casing is advanced deeper than the minimum top of rock socket elevation as shown in the Plans, or the top of rock elevation if deeper, extend the rock socket length in accordance with 455-15.7.
4. Place concrete in accordance with 455-15.9.3 through the temporary casing. Do not allow concrete to fall or overflow into the annular space between the temporary and permanent casing.
5. After placement of the concrete, remove the temporary casing in accordance with 455-15.4, 455-15.7 and 455-17. During withdrawal of the temporary casing, maintain adequate concrete head in both the temporary and permanent casings to avoid breaching, caving, or contamination of the concrete.

Include details of this procedure in the DSIP for the Engineer's review and approval.

455-15.6 Excavations: When pilot holes and/or load tests are performed, the GFDEOR shall use the pilot hole and load test results when load tests are performed to determine the production tip elevations and/or the installation criteria of the drilled shafts. Drilled shaft construction shall not begin until the proposed shaft tip elevations are accepted by the Engineer.

455-15.6.1 Pilot Hole: When pilot holes are shown in the Plans core a pilot hole, prior to shaft excavation, in accordance with ASTM D2113 Standard Practice for Rock Core Drilling and Sampling of Rock for Site Excavation and the Department's Soils & Foundations Handbook using a double or triple wall core barrel through part or all of the shaft, to a minimum depth of 3 times the diameter of the drilled shaft below the tip elevation shown in the Plans. Prior to excavating load test shafts, provide pilot holes to a minimum depth of three times the diameter of the drilled shaft below the tip elevation designed for these shafts. For test holes, provide pilot holes prior to excavation, to a minimum depth of 5 feet below the tip of the test hole.

455-15.6.2 Cores: Take cores to determine the character of the material directly below the shaft excavation when pilot borings are not performed at the shaft location. Provide equipment to retrieve the core from a depth of 5 times the diameter of the drilled shaft below the bottom of the drilled shaft excavation in accordance with ASTM D2113 Standard Practice for Rock Core Drilling and Sampling of Rock for Site Excavation. Cut the cores with an acceptable core barrel to a minimum depth of 3 times the diameter of the drilled shaft below the bottom of the drilled shaft excavation after completing the shaft excavation, as directed by the Engineer.

For cores or pilot holes, use only a double or triple wall core barrel designed:

1. to cut a core sample from 4 inches to 6 inches in diameter, at least 5 feet in length, and,
2. so that the sample of material cored can be removed from the shaft excavation and the core barrel in an undisturbed state.

When called for in the Plans and approved by the Engineer, substitute Standard Penetration Tests (SPT) using a drill rig equipped with an automatic hammer for coring.

Provide areas for the disposal of unsuitable materials and excess materials as defined in 120-5 that are removed from shaft excavations, and dispose of them in a manner meeting all environmental requirements.

Furnish the additional drilled shaft concrete over the theoretical amount required to complete filling any excavations for shafts which are larger than required by the Plans or authorized by the Engineer, at no expense to the Department.

455-15.6.3 Production Shaft Tip Elevations: After completion of load tests, pilot holes, rock cores and lab testing, the GFDEOR shall submit the required minimum rock socket lengths and shaft tip elevations to the Engineer in a signed and sealed letter for review and acceptance. This letter shall include the assumptions and geotechnical parameters used, the report of core borings of all pilot holes, rock core records, lab testing, load test reports prepared in accordance with 455-2.11, and numerical analysis and calculations. Submit this letter at least three working days, excluding weekends and Department observed holidays, prior to beginning production shaft construction. Additional data or analysis may be required by the Engineer.

Production shaft lengths may be based on the load transfer characteristics measured during the load test. End bearing characteristics may be based on load test results if the properties of the material below the tips of the production shafts meet or exceed the strength of the materials below the tip of the test shaft. If the theoretical bearing strength of the material

below the tips of the production shafts is less than the theoretical bearing strength of the materials below the tip of the test shaft, the production shafts shall be extended to meet design capacity by side shear only, unless the end bearing resistance of the weaker material is verified by additional load testing.

455-15.7 Casings: Ensure that casings are metal, of ample strength to withstand handling and driving stresses and the pressure of concrete and of the surrounding earth materials, and that they are smooth and water tight. Ensure that the inside diameter of casing is not less than the specified size of shaft except as provided below. The Department will not allow extra compensation for concrete required to fill an oversize casing or oversize excavation.

The Engineer will allow the Contractor to supply casing with an outside diameter equal to the specified shaft diameter (O.D. casing) provided additional shaft length is supplied at the shaft tip. Determine the additional length of shaft required by the following relationship:

$$\text{Additional Length} = \frac{(D_1 - D_2) L}{D_2}$$

where:

D_1 = casing inside diameter specified = shaft diameter specified

D_2 = casing inside diameter provided ($D_2 = D_1$ minus twice the wall thickness).

L = authorized shaft length below ground for temporary casing methods or below casing for permanent casing methods.

Bear all costs relating to this additional length including but not limited to the cost of extra excavation, extra concrete, and extra reinforcing steel.

Install and remove casing by rotating, exerting downward pressure, or with a vibratory hammer, unless otherwise shown in the Contract Documents. Remove all casings from shaft excavations except those used for the Permanent Casing Method. Ensure that the portion of casings installed under the Permanent Casing Method of construction below the shaft cut-off elevation remains in position as a permanent part of the drilled shaft. When casings that are to be removed become bound in the shaft excavation and cannot be practically removed, submit a proposed redesign to the Engineer for review and acceptance.

If temporary casing is advanced deeper than the minimum top of rock socket elevation shown in the Plans or actual top of rock elevation if deeper, withdraw the casing from the rock socket and overream the shaft. If the temporary casing cannot be withdrawn from the rock socket before final cleaning, extend the length of rock socket below the authorized tip elevation one-half of the distance between the minimum top of rock socket elevation or actual elevation if deeper, and the temporary casing tip elevation.

Form drilled shafts extending through a body of water with permanent casings. When the shaft extends above ground or a body of water, the Contractor may form the exposed portion with removable casing, unless otherwise specified in the Plans. Remove the portion of metal casings between an elevation 2 feet below the lowest water elevation or 2 feet below ground whichever is higher and the top of shaft elevation after the concrete is cured. Remove casings to expose the concrete as required above in a manner which will not damage the drilled shaft concrete. Dismantle removable casings in accordance with the provisions of 455-17.5.

When practical, do not start the removal until completing all concrete placement in the shaft. Extract casing at a slow, uniform rate with the pull in line with the axis of the shaft. Withdraw temporary casings while the concrete remains fluid.

When conditions warrant, the Contractor may pull the casing in partial stages. Maintain a sufficient head of concrete above the bottom of the casing to overcome the hydrostatic pressure of water outside the casing. At all times maintain the elevation of the concrete in the casing high enough to displace the drilling slurry between the outside of the casing and the edge of the hole while removing the casing.

Expandable or split casings that are removable are not permitted for use below water.

455-15.8 Slurry and Fluid in Excavation:

455-15.8.1 General: Thoroughly premix the slurry with clean fresh water prior to introduction into the shaft excavation. Introduce slurry before the excavation advances below the bottom of the casing. Ensure that the percentage of polymer or mineral admixture used to make the suspension is such as to maintain the stability of the shaft excavation. The Engineer will require adequate water or slurry tanks when necessary to perform the work in accordance with these Specifications. The Engineer will not allow excavated pits on projects requiring slurry tanks without the written permission of the Engineer. Take the steps necessary to prevent the slurry from “setting up” in the shaft, including but not limited to agitation, circulation, and adjusting the composition and properties of the slurry. Provide suitable offsite disposal areas and dispose of all waste slurry in a manner meeting all requirements pertaining to pollution.

Provide a CTQP qualified drilled shaft inspector to perform control tests using suitable apparatus on the slurry mixture to determine the slurry and fluid properties as specified in sub-articles 455-15.8.2 to 455-15.8.4.

Measure the viscosity of the freshly mixed slurry regularly as a check on the quality of the slurry being formed using an approved measuring device.

Perform tests from the fluid in the excavation to determine density, viscosity, and pH value to establish a consistent working pattern, taking into account the mixing process and blending of freshly mixed slurry and previously used slurry. Repeat tests to determine density, viscosity, and pH value at intervals not exceeding 2 hours during the first 8 hours slurry is in use and every 4 hours thereafter, including overnight, until concrete placement. Perform density, viscosity and pH tests again when the excavation reaches the midpoint.

The Department may perform comparison tests as determined necessary during the mineral and polymer slurry operations.

If, at any time in the opinion of the Engineer, the wet construction method fails to stabilize the excavation discontinue this method of construction, backfill the excavation and submit modifications in procedure or alternate means of construction for approval.

455-15.8.2 Mineral Slurry: When mineral slurry is used in an excavation, use only processed attapulgite or bentonite clays with up to 2% (by dry weight) of added polymer. Use mineral slurry having a mineral grain size such that it will remain in suspension and having sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. Use a percentage and specific gravity of the material to make the suspension sufficient to maintain the stability of the excavation and to allow proper placement of concrete. Ensure that the material used to make the slurry is not detrimental to concrete or surrounding ground strata. During construction, maintain the level of the slurry at a height sufficient to prevent caving of the hole. In the event of a sudden significant loss of slurry such that the slurry level cannot

practically be maintained by adding slurry to the hole, backfill the excavation and delay the construction of that foundation until an alternate construction procedure has been approved.

Perform the following tests on the mineral slurry supplied to and in the shaft excavation and ensure that the results are within the ranges stated in the table below:

Item to be measured	Range of Results at 68°F	Test Method
Density	64 to 73 lb/ft ³ (in fresh water environment) 66 to 75 lb/ft ³ (in salt water environment)	Mud density balance: FM 8-RP13B-1
Viscosity	30 to 40 seconds	Marsh Cone Method: FM 8-RP13B-2
pH	8 to 11	Electric pH meter or pH indicator paper strips: FM 8-RP13B-4
Sand Content	4% or less	FM 8-RP13B-3

The Contractor may adjust the limits in the above table when field conditions warrant as successfully demonstrated in a test hole or with other methods approved by the Engineer. The Engineer must approve all changes in writing before the Contractor can continue to use them.

During construction, maintain the level of mineral slurry in the shaft excavation within the excavation and at a level not less than 4 feet above the highest expected piezometric water elevation along the depth of a shaft.

455-15.8.3 Polymer Slurry: Materials manufactured expressly for use as polymer slurry for drilled shafts that meet the requirements of this subarticle may be used as slurry for drilled shaft excavations. A representative of the manufacturer must be on-site or available for immediate contact to assist and guide the construction of the first three drilled shafts at no additional cost to the Department. This representative must also be available for on-site assistance or immediate contact if problems are encountered during the construction of the remaining drilled shafts. Use polymer slurry only if the soils below the casing are not classified as organic, and the pH of the fluid in the hole can be maintained in accordance with the manufacturer's published recommendations. Submit the SDS for the product, the manufacturer's published mixing procedures, and the manufacturer's published range of values for pH and viscosity of the mixed slurry. Submit a report in accordance with Section 2.4, Volume II of the Department's Material Manual, which may be viewed at the following URL:

<http://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section24V2.shtm> .

The report must include test results, certification and documentation that demonstrate the polymer slurry and additives meet the following requirements:

1. The polymer slurries to be used on the project and their waste products are classified as non-hazardous as defined by Resource Conservation and Recovery Act (RCRA) Subpart C rules, Table 1 of 40 CFR 261.24 Toxicity Characteristic.

2. Pull out tests demonstrate the bond between the bar reinforcement and the concrete is not materially affected by exposure to the slurry under typical construction conditions, over the typical range of slurry viscosities to be used.

3. Load tests demonstrate the bond between the concrete and the soil is not materially affected by exposure to the polymer slurry under typical construction conditions, over the typical range of polymer slurry viscosities to be used.

4. The method of disposal meets the approval of all federal, state and local regulatory authorities.

Perform the following tests on the polymer slurry supplied to and in the shaft excavation and ensure that the results are maintained within the ranges stated in the table below:

Mixed Polymer Slurry Properties		
Item to be measured	Range of Results at 68°F	Test Method
Density	62 to 65 lb/ft ³ (fresh water) 64 to 67 lb/ft ³ (salt water)	Mud density balance: FM 8-RP13B-1
Viscosity	50 seconds to upper limit published by the manufacturer, limited by 455-15.8.3 (2) and (3) above, for materials excavated	Marsh Cone Method: FM 8-RP13B-2
pH	Range published by the manufacturer for materials excavated	Electric pH meter or pH indicator paper strips: FM 8-RP13B-4
Sand Content	0.5% or less	FM 8-RP13B-3

Premix polymer slurry in accordance with the manufacturer's published procedures. Do not mix in the excavation as a means to prepare slurry. When approved by the GFDEOR, adjustments to slurry properties can be made in the excavation.

During construction, maintain the level of the slurry at a height sufficient to prevent caving of the hole and which should not be lower than 4 feet above the highest expected piezometric water elevation along the depth of the shaft.

455-15.8.4 Fluid In Excavation At Time Of Concrete Placement: When any fluid is present in any drilled shaft excavation, including shafts to support sign, signal, lighting and ITS structures, the applicable test methods and reporting requirements described in 455-15.8.1, 455-15.8.2 and 455-15.8.3 apply to tests of fluid in the shaft prior to placing the concrete.

Test samples of the fluid in the shaft from within 1 inch of the base of the shaft and from the middle of the shaft height for shafts up to 60 feet in depth. Test samples of the fluid in the shaft from within 1 inch of the base of the shaft and at intervals not exceeding 30 feet up the shaft for shafts deeper than 60 feet. Use a sampling tool, approved by the Engineer, designed to sample over a depth range of 12 inches or less. Take whatever action is necessary prior to placing the concrete to bring the fluid within the specification and reporting requirements, outlined in the tables in 455-15.8.2 and 455-15.8.3, except as follows:

The Engineer will not require tests for pH or viscosity, nor require the fluid to meet the minimum density specified in 455-15.8.2 and 455-15.8.3 when neither polymer nor mineral slurry has been introduced into the shaft excavation.

455-15.9 Tremies and Pumps:

455-15.9.1 General: The requirements of the applicable provisions of Section 400 will apply when using a tremie or a pump to place drilled shaft concrete.

455-15.9.2 Dry Excavations: Ensure that the tremie for depositing concrete in a dry drilled shaft excavation consists of a tube of solid construction, a tube constructed of sections which can be added and removed, or a tube of other accepted design. The Contractor may pass concrete through a hopper at the top of the tube or through side openings as the tremie is retrieved during concrete placement. Support the tremie so that the free fall of the concrete is less than 5 feet at all times. If the free falling concrete causes the shaft excavation to cave or slough, control the movement of concrete by reducing the height of free fall of the concrete and/or reducing the rate of flow of concrete into the excavation.

455-15.9.3 Wet Excavations: Construct the tremie or pump line used to deposit concrete beneath the surface of water so that it is water-tight and will readily discharge concrete. Construct the discharge end of the tremie or pump line to prevent water intrusion and permit the free flow of concrete during placement operations. Ensure that the tremie or pump line has sufficient length and weight to rest on the shaft bottom before starting concrete placement.

During placement operations, ensure that the discharge end of the tremie or pump line is within 6 inches of the bottom of the shaft excavation until at least 10 feet of concrete has been placed. Ensure the discharge end of the tremie or pump line is continuously embedded at least 10 feet into the concrete after 10 feet of concrete has been placed and until the casing is overpoured sufficiently to eliminate all contaminated concrete. Ensure that the free fall of concrete into the hopper is less than 5 feet at all times. Support the tremie so that it can be raised to increase the discharge of concrete and lowered to reduce the discharge of concrete. Do not rapidly raise or lower the tremie to increase the discharge of the concrete. Maintain a continuous flow of concrete and a positive pressure differential of the concrete in the tremie or pump line at all times to prevent water or slurry intrusion into the shaft concrete.

455-15.10 Excavation and Drilling Equipment:

455-15.10.1 General: All shaft excavation is unclassified shaft excavation. Overream the drilled shaft sidewall when necessary. These terms are defined in 455-15.10.2, 455-15.10.3, and 455-15.10.4, respectively.

Use excavation and drilling equipment having adequate capacity, including power, torque, and crowd (downthrust), and excavation and overreaming tools of adequate design, size, and strength to perform the work shown in the Plans or described herein. When the material encountered cannot be drilled using conventional earth augers and/or underreaming tools, provide special drilling equipment, including but not limited to rock augers, core barrels, rock tools, air tools, blasting materials, and other equipment as necessary to continue the shaft excavation to the size and depth required. In the event blasting is necessary, obtain all necessary permits. The Contractor is responsible for the effects of blasting on already completed work and adjacent structures. The Engineer must approve all blasting.

455-15.10.2 Unclassified Shaft Excavation: Unclassified shaft excavation is defined as all processes required to excavate a drilled shaft of the dimensions shown in the Contract Documents to the depth indicated in the Plans plus 15 feet or plus 3 shaft diameters, whichever is deeper, completed and accepted. Include in the work all shaft excavation, whether the material encountered is soil, rock, weathered rock, stone, natural or man-made obstructions, or materials of other descriptions.

455-15.10.3 Unclassified Extra Depth Excavation: Unclassified extra depth excavation is defined as all processes required to excavate a drilled shaft of plan dimensions which is deeper than the limits defined as unclassified shaft excavation.

455-15.10.4 Drilled Shaft Sidewall Overreaming: Drilled shaft sidewall overreaming is defined as the unclassified excavation required to roughen its surface or to enlarge the drilled shaft diameter due to softening of the sidewalls or to remove excessive buildup of slurry cake when slurry is used. Increase the shaft radius a minimum of 1/2 inch and a maximum of 3 inches by overreaming. The Contractor may accomplish overreaming with a grooving tool, overreaming bucket, or other suitable equipment.

Meet the limit for depth of sidewall overreaming into the shaft sidewall material and the elevation limits between which sidewall overreaming is required.

455-15.11 Inspection of Excavations:

455-15.11.1 Dimensions and Alignment: Provide equipment for checking the dimensions and alignment of each permanent shaft excavation. Determine the dimensions and alignment of the shaft excavation under the observation and direction of the Department.

Generally, check the alignment and dimensions by any of the following methods as necessary:

1. Check the dimensions and alignment of dry shaft excavations using reference stakes and a plumb bob. Verify that the bottom of the hole is level.

2. Check the dimensions and alignment of casing when inserted in the excavation.

3. Use an acceptable caliper system

4. Insert any casing, rod or pipe assembly, or other device used to check dimensions and alignment into the excavation to full depth.

455-15.11.2 Depth: Generally, reference the depth of the shaft during drilling to appropriate marks on the Kelly bar or other suitable methods. Measure final shaft depths with a suitable weighted tape or other accepted methods after final cleaning.

455-15.11.3 Shaft Inspection Device (SID): Furnish all power and equipment necessary to inspect the bottom conditions of a drilled shaft excavation for bridge foundations and to measure the thickness of bottom sediment or any other debris using a SID. Provide a means to position and lower the SID into the shaft excavation to enable the bell housing to rest vertically on the bottom of the excavation. Continuously videotape the inspection of each drilled shaft excavation after final cleaning. Clearly identify in the recordings by audio or other means, the location and items being observed.

Furnish a SID meeting the following requirements:

1. A remotely operated, high resolution, color video camera sealed inside a watertight bell housing.

2. Provides a clear view of the bottom inspection on a video monitor at the surface in real time.

3. Provides a permanent record of the entire inspection with voice annotation on a quality DVD with a resolution of not less than 720 x 480.

4. Provides a minimum field of vision of 110 square inches, with at least two graduated measuring devices to record the depth of sediment on the bottom of the shaft excavation to a minimum accuracy of 1/2 inch and a length greater than 1-1/2 inches.

5. Provides sufficient lighting to illuminate the entire field of vision at the bottom of the shaft in order for the operator and inspector to clearly see the depth measurement scale on the video monitor and to produce a clear recording of the inspection.

6. Provides a regulated compressed air or gas system to precisely adjust the drilling fluid level within the bell housing, and a pressurized water system to assist in determination of bottom sedimentation depth

Obtain the Engineer's approval of the device in advance of the first inspection contingent on satisfactory field performance. Notify the Engineer for approval before a different device is used for any subsequent inspection.

455-15.11.4 Shaft Cleanliness Requirements: Adjust cleaning operations so a minimum of 50% of the bottom of each shaft will have less than 1/2 inches of sediment at the time of placement of the concrete. Ensure the maximum depth of sedimentary deposits or any other debris at any place on the bottom of the shaft excavation does not exceed 1-1/2 inches. Determine shaft cleanliness by visual inspection for dry shafts. For bridge foundations, use a shaft inspection device for wet shafts. For drilled shaft foundations for sign, signal, lighting and ITS structures the use of a weighted tape is permitted to verify level and clean hole bottom conditions at the time of concrete placement.

When using slurry, meet the requirements of 455-15.8 at the time of concrete placement.

455-15.11.4.1 Exceptions for Shafts for Sign, Signal, Lighting and ITS Structures: Ensure the depth of sedimentary deposits or other debris does not exceed 1 inch over the bottom of the shaft when installing drilled shafts to support sign, signal, lighting and ITS structures.

455-15.11.5 Time of Excavation: Overream the sidewalls of any unclassified excavation work using mineral slurry lasting more than 36 hours (measured from the beginning of excavation for all methods except the Temporary or Permanent Casing Method, which begins at the time excavation begins below the casing) before placement of the concrete. Ensure that the minimum depth of overreaming the shaft sidewall is 1/2 inch and the maximum depth is 3 inches. Provide any overreaming required at no expense to the Department when exceeding the 36 hour limit.

When using mineral slurry, adjust excavation operations so that the maximum time that slurry is in contact with the bottom 5 feet of the shaft (from time of drilling to concreting) does not exceed 12 hours. If exceeding the 12 hour time limit, overream the shaft socket or the full shaft when socket is not specified, at no additional expense to the Department prior to performing other operations in the shaft.

455-16 Reinforcing Steel Construction and Placement.

455-16.1 Cage Construction and Placement: Completely assemble and place as a unit the cage of reinforcing steel, consisting of longitudinal bars, ties, and cage stiffener bars, immediately after the Drilled Shaft Inspector inspects and accepts the shaft excavation and immediately prior to placing concrete. Tie all intersections of drilled shaft reinforcing steel with cross ties or "figure 8" ties. Use double strand ties, ties with larger tie wire, U-bolts, or similar when necessary.

455-16.2 Splicing Cage: If the bottom of the constructed shaft elevation is lower than the bottom of the shaft elevation in the Plans, extend a minimum of one half of the longitudinal bars required in the upper portion of the shaft the additional length. Continue the tie bars for the extra depth, spaced on 2 foot centers, and extend the stiffener bars to the final depth. The Contractor may lap splice these bars or use unspliced bars of the proper length. Do not weld bars to the planned reinforcing steel unless shown in the Contract Documents.

For drilled shafts supporting sign, signal, lighting and ITS structures, if the shaft cleaning operations result in excavating below the required tip elevation, the reinforcing steel cage does not need to be extended. The reinforcing steel cage may be spliced to rest on the bottom of the excavation or suspended in place from the top.

455-16.3 Support, Alignment, and Tolerance: Tie and support the reinforcing steel in the shaft so that the reinforcing steel will remain within allowable tolerances as specified in 455-20 and Section 415.

Ensure concentric spacing for the entire length of the cage. As a minimum, use centering devices consisting of wheels or other approved noncorrosive spacing devices within 3 feet of the bottom, within 6 feet of the top, and intervals not exceeding 10 feet along the cage length. When a casing with an inside diameter (I.D.) larger than the required shaft diameter is used, provide, within the portion of the oversized casing, centering devices specially dimensioned, or other means to ensure the casing and the cage are concentric. Do not use block or wire type spacers. Ensure no permanent metallic elements will be within the concrete cover space. Use a minimum of one spacer per 30 inches of circumference of cage with a minimum of four at each level. Provide spacers at the bottom of the drilled shaft reinforcing cage as required to maintain the proper position of the cage.

Check the elevation of the top of the steel cage before and after placing the concrete. If the cage is not within the specified tolerances, correct, and submit a revised DSIP to the Engineer for approval. Do not construct additional shafts until receiving approval from the Engineer.

455-16.4 Nondestructive Integrity Testing Access Tubes: Install access tubes full length in all drilled shafts from the tip of shaft to a point high enough above top of shaft to allow Thermal Integrity Testing for Drilled Shafts (TITDS) and Cross-Hole Sonic Logging (CSL) testing, but not less than 30 inches above the top of the drilled shaft, ground surface or water surface, whichever is higher. Equally space tubes around circumference of drilled shaft. Securely tie access tubes to the inside of the reinforcing cage and align tubes to be parallel to the vertical axis of the center of the cage. Access tubes from the top of the reinforcing cage to the tip of the shaft shall be NPS 1-1/2 Schedule 40 black iron or black steel (not galvanized) pipe. Access tubes above the top of the reinforcing cage may be the same black iron or black steel pipe or Schedule 40 PVC pipe. Ensure that the access tubes are free from loose rust, scale, dirt, paint, oil and other foreign material. Couple tubes as required with threaded couplers, such that inside of tube remains flush. Seal the bottom and top of the tubes with threaded caps. The tubes, joints and bottom caps shall be watertight. Seal the top of the tubes with lubricated, threaded caps sufficient to prevent the intrusion of foreign materials. Stiffen the cage sufficiently to prevent damage or misalignment of access tubes during the lifting and installation of the cage. Exercise care in removing the caps from the top of the tubes after installation so as not to apply excess torque, hammering or other stress which could break the bond between the tubes and the concrete.

Provide the following number (rounded up to the next whole number of tubes) and configuration of access tubes in each drilled shaft based on the diameter of the shaft.

Shaft Diameter	Number of Tubes Required	Configuration around the inside of Circular Reinforcing Cage
36 to 48 inches	4	90 degrees apart
Greater than 48 inches	1 tube per foot of Shaft Diameter	360 degrees divided by the Number of Tubes

Insert simulated or mock probes in each access tube prior to concreting to ensure the serviceability of the tube. Fill access tubes with clean potable water and recap prior to concreting. Repair or replace any leaking, misaligned or unserviceable tubes as in a manner acceptable to the Engineer prior to concreting.

For drilled shaft foundations requiring anchor bolts, verify access tubes will not interfere with anchor bolt installation before excavating the shaft. When access tube locations conflict with anchor bolt locations, move the access tube location plus or minus 2 inches along the inner circumference of the reinforcing cage.

For drilled shafts supporting sign, signal, lighting and ITS structures, if the shaft cleaning operations result in excavating below the required tip elevation, the access tubes do not need to be extended. If the reinforcing steel cage is suspended in place from the top rather than resting on the bottom of the excavation, clearly mark the top of shaft location on each tube.

When called for in the Contract Documents, provide embedded thermal wires and equipment to allow TITDS in accordance with ASTM D7949 Method B.

455-17 Concrete Placement.

455-17.1 General: Place concrete in accordance with the applicable portions of Sections 346 and 400, 455-15.2, 455-15.3, 455-15.4, 455-15.5, 455-15.8, 455-15.9, and the requirements herein.

Place concrete as soon as possible after completing all excavation, cleaning the shaft excavation, inspecting and finding it satisfactory, and immediately after placing reinforcing steel. Continuously place concrete in the shaft to the top of the casing. Continue placing concrete after the casing is full until good quality concrete is evident at the top of the casing. Place concrete through a tremie or concrete pump using accepted methods. After the shaft is overpoured sufficiently to eliminate all contaminated concrete, additional concrete may be added to the shaft without the use of a tremie or pump in accordance with Section 400.

If the pressure head is lost during concrete placement for any reason, perform integrity testing at no expense to the Department.

Immediately after concreting, check the water levels in the CSL access tubes and refill as necessary. If tubes become unserviceable, core new holes in the drilled shaft as directed by the Engineer.

455-17.2 Placement Time Requirements: The elapsed time for placing drilled shaft concrete includes the concrete mixing and transit time, the concrete placement time, the time required to remove any temporary casing that causes or could cause the concrete to flow into the space previously occupied by the casing, and the time to insert any required column steel, bolts, weldments, etc. The elapsed time begins at the time the first truck load placed in the shaft is batched. Maintain a minimum slump of 5 inches throughout the elapsed time. Use materials to produce and maintain the required slump through the elapsed time that meets the class of concrete specified. Provide slump loss tests that demonstrate to the Engineer that the concrete will maintain a 5 inch or greater slump for the anticipated elapsed time before beginning drilled shaft construction.

455-17.3 Forms: When the top of shaft elevation is above ground or above water, form the portion of the shaft above ground and the portion of the shaft above water with a removable form or another suitable method to the dimensions shown in the Plans.

When the shaft extends above the ground through a body of water, the Contractor may form the portion through the water with removable forms except when the Permanent Casing Method is specified.

455-17.4 Riser Blocks: The Contractor may cast a riser block of equal diameter as the column and of a maximum height of 6 inches at the top of the completed shaft. When this option is chosen, extend any dowel steel above the top of shaft an additional 6 inches.

455-17.5 Curing: Cure the top surface in accordance with the applicable provisions of Section 400, and construct any construction joint area as shown in the Plans. Protect portions of drilled shafts exposed to a body of water from the action of water by leaving the forms in place for a minimum of seven days after casting the concrete. The Contractor may remove forms prior to seven days provided the concrete strength has reached 2,500 psi or greater as evidenced by cylinder breaks.

455-17.6 Non-Destructive Testing of Drilled Shaft Integrity:

455-17.6.1 Thermal Integrity Testing for Drilled Shafts (TITDS): Perform all TITDS testing in accordance with ASTM D7949. Test all drilled shafts in bridge bents or piers considered nonredundant in the Plans, using TITDS. For all other drilled shafts supporting bridges and sign, signal, lighting and ITS structures, perform TITDS on any shaft suspected of containing defects. The Engineer may select shafts for TITDS based on observations in the field or the review of the drilled shaft logs.

Engage a qualified Specialty Engineer to supervise the TITDS. The qualified TITDS Specialty Engineer must have a minimum six months experience of TITDS and have a Florida Licensed Professional Engineer and supervise the collection and interpretation of data. The individual performing the TITDS in the field must work for the Specialty Engineer firm and have a minimum of six months experience of TITDS. The Contractor shall provide all necessary access and assistance to the TITDS Specialty Engineer to satisfactorily perform the testing.

After acceptance of production shafts by the Engineer, remove all water from the access tubes or core holes and fill the tubes or core holes with a structural non-shrink grout meeting the requirements of Section 934 from the bottom via tremie tube. Place the grout utilizing enough pressure to fill the tubes or core holes completely.

If the Contractor determines at any time during the non-destructive testing and evaluation of the drilled shaft that the drilled shaft should be replaced, no further testing or evaluation of that shaft is required.

455-17.6.1.1 Equipment: Furnish TITDS test equipment in accordance with ASTM D7949 as follows:

1. Provide thermal probes with four orthogonally oriented infrared sensors able to be used in 1.5 inch I.D. pipes.
2. Provide a computer based TITDS data acquisition system for display of signals during data acquisition.
3. Provide a computer based TITDS data acquisition system for display of signals during data acquisition.
4. Provide an air compressor and power supply with sufficient pressure to air lift the water from the access tubes.

455-17.6.1.2 Procedure: Perform TITDS testing between the minimum and maximum times shown below after the batching time of the first truck load placed in the drilled shaft, unless otherwise accepted by the Engineer.

Shaft Diameter (inches)	Minimum time (hours)	Maximum time (hours)
36-48	24	54
49-60	24	72
61-72	24	72
73-84	24	90
85-120	24	108

The Contractor may propose modifications in the above table for site specific and special concrete mix conditions, as demonstrated from lab and field testing and instrumentation. The Engineer must approve all changes to the testing times prior to the Contractor using them.

Furnish information regarding the shaft, tube lengths and depths, construction dates, and other pertinent shaft installation observations and details to the Department at the time of testing. Verify access tube lengths and their condition in the presence of the Department, at the end of concrete placement. If the access tubes do not provide access over the full length of the shaft, repair the existing tube(s) or core additional hole(s), as directed by the Engineer, at no additional cost to the Department.

Just prior to inserting the thermal probe, remove water from the access tubes. Store the removed water in an insulated container for later replacement. Allow the thermal probe to acclimate in accordance with the equipment manufacturer recommendations. Continuously record temperatures at depth intervals of 3.0 inches or less from the top to the bottom of each access tube. Repeat the test at each access tube until two sets of data from the same access tube provide similar results. Return the warm water to the access tubes immediately after the testing has been completed.

Immediately report any potential defects indicated by lower temperature anomalies to the Engineer.

455-17.6.1.3 Required TITDS Reports: Submit the TITDS data and analysis to the Engineer in a signed and sealed report, together with all electronic data, within 48 hours of testing. The report shall include as minimum the following items:

1. Graphs displaying all temperature measurements and average temperature versus depth.
2. Indication of unusual temperatures, including cooler local deviations from the average at any depth from the overall average over the entire length.
3. A graph displaying the average temperature and theoretical temperature versus depth.
4. Variations in temperature between access tubes which may indicate variations in cage alignment.
5. The calculated radius of the shaft throughout the entire depth.

6. Calculated concrete cover throughout the entire depth.

7. Shaft Details, Probe Details, Environmental Details, Tube Run Selection and Shaft Adjustment Data that show the measurements, inputs and adjustments to the data. Screen captures of these pages from the "TIP Reporter" software will be acceptable.

8. A conclusion stating whether the tested shaft is free from integrity defects, meets the minimum concrete cover and diameter requirements by the specifications and the cage is properly aligned. When anomalies are detected, include in the report a three-dimensional rendering of the shape of the shaft.

455-17.6.1.4 Evaluation of TITDS Test Results: Drilled shafts not meeting the minimum cover and diameter requirements, or having integrity defects, are not acceptable without an engineering analysis.

455-17.6.1.5 Coring and/or Repair of Drilled Shafts: If a drilled shaft is unacceptable based on the TITDS tests and other testing, or problems observed during drilled shaft construction, core the shaft to allow further evaluation and repair, or replace the shaft. If coring to allow further evaluation of the shaft and repair is chosen, one or more core samples shall be taken from each unacceptable shaft for full depth of the shaft or to the depth directed by the GFDEOR. The GFDEOR shall determine, with concurrence of the Engineer, the number, location, and diameter of the cores based on the results of the TITDS. Keep an accurate log of cores. Properly mark and place the cores in a crate showing the shaft depth at each interval of core recovery. Deliver the cores to the GFDEOR and submit the coring log to the Engineer. Perform strength testing by an AASHTO certified lab on portions of the cores that exhibit questionable concrete as determined by the GFDEOR. If the TITDS and coring indicate the shaft is defective, propose remedial measures for approval by the Engineer. Such improvement may consist of, but is not limited to correcting defective portions of the shaft, providing straddle shafts to compensate for capacity loss, or providing a replacement shaft. Repair all detected defects and conduct post repair integrity testing using horizontal and offset CSL testing and 3-D tomographic imaging as described in 455-17.6.2. Engage a Specialty Engineer to perform gamma-gamma density logging calibrated to 1-1/2 inch black iron access tubes, prior to and after the repair is performed, to verify the integrity of the shaft outside the reinforcing cage in the same locations where the repair was required. When straddle shafts or replacement shafts are used to correct a deficient foundation perform TITDS in accordance with 455-17.6.1 through 455-17.6.3 to verify integrity of these shafts. Submit all results to the Engineer within five days of test completion for acceptance. Perform all work described in this sub-article at no additional cost to the Department, and with no increase in Contract Time.

455-17.6.2 Cross Sonic Logging (CSL) and Tomography: When required by the Engineer perform CSL testing in accordance with ASTM D6760. Engage a qualified Specialty Engineer to perform the CSL testing. The qualified CSL Specialty Engineer must be a Professional Engineer in the State of Florida and have a minimum six months experience of CSL testing, supervising the collection of CSL data and interpretation of CSL results. The individual performing the CSL testing in the field must work for the Specialty Engineer firm and have a minimum of six months experience of six months of CSL testing. The Contractor shall provide all necessary access and assistance to the CSL Specialty Engineer to satisfactorily perform the testing.

When a shaft contains four tubes, test every possible tube combination. For shafts with five or more tubes, test all pairs of adjacent tubes around the perimeter, and one-half of the remaining number of tube combinations, as chosen by the Engineer. Pull the probes simultaneously, starting from the bottoms of the tubes, over an electronic depth measuring device. Perform the CSL tests with the source and receiver probes in the same horizontal plane.

Continuously record CSL signals at depth intervals of 2-1/2 inches or less from the bottom of the tubes to the top of each shaft. Remove all slack from the cables prior to pulling to provide accurate depth measurements in the CSL records. When the measurements indicate a 30% or greater reduction in velocity between one or more pairs take one or two concrete cores to allow further evaluation and repair, or replace the shaft as directed by the Engineer. Determine the location of the concrete cores by performing 3D tomographic analysis using the CSL measurements. The core depths shall be at least 5 feet deeper than the bottom of the anomaly determined by the 3D tomography analysis or full depth if the anomaly is within 5 feet of the bottom of the shaft. The Engineer may accept a drilled shaft without rock cores if an EAR demonstrates that the anomaly does not affect the structural and the geotechnical axial capacity, the structural and geotechnical lateral stability, the settlement behavior of the shaft, and that the anomaly will not impact the durability of the foundation.

When repairs are done, perform CSL measurements in all tube pair combinations with the source and receiver running at the same horizontal plane and at the vertical offsets of 45 degrees above and below. Perform all measurements including the offset measurements from the point where the higher probe is at least 5 feet below the lower limit of the repaired zone to the point where the lower probe is at least 5 feet above the upper limit of the repaired zone. Offset measurements must be as follows: plus 45 degrees (source below receiver) and minus 45 degrees (source above receiver). Use the measurements of these two offsets in combination with the horizontal measurements to perform the 3D tomography. Provide the CSL measurements, CSL logs and 3D tomographic analysis at no additional cost to the Department.

After acceptance of production shafts by the Engineer, fill the tubes or core holes with a structural non-shrink grout in accordance with 455-17.6.1.

If the Contractor determines at any time during the non-destructive testing and evaluation of the drilled shaft that the drilled shaft should be replaced, no further testing or evaluation of that shaft is required.

455-17.6.2.1 Required CSL Reports: Present the CSL data and analysis results to the Engineer in a signed and sealed report. Include CSL logs with analyses of first pulse arrival time (FAT) versus depth and pulse energy/amplitude versus depth. Present a CSL log for each tube pair tested with any defect zones identified on the logs and discussed in the test report as appropriate. When offset measurements are required, perform 3D tomographic analysis using all offset data, and include color coded 3D tomographic images in the report.

455-17.6.2.2 Evaluation of Cross-Hole Sonic Logging Testing: Drilled shafts with velocity reduction exceeding 30% are not acceptable without an engineering analysis.

455-17.6.2.3 Coring and/or Repair of Drilled Shafts: If a drilled shaft is unacceptable based on the CSL Testing and tomographic analyses and other testing, core the shaft to allow further evaluation and repair, or replace the shaft in accordance with 455-17.6.1.5.

If repairs are performed or additional shafts installed to correct a deficient foundation, conduct integrity testing and submit the results to the Engineer in accordance with 455-17.6.1.5.

455-18 Method Shafts.

The Engineer will use the construction of method shafts (test holes) to determine if the methods and equipment used by the Contractor are sufficient to produce a shaft excavation

meeting the requirements of the Contract Documents. During method shaft excavations, the Engineer will evaluate the ability to control dimensions and alignment of excavations within tolerances; to seal the casing into impervious materials; to control the size of the excavation under caving conditions by the use of slurry or by other means; to properly clean the completed shaft excavation; to construct excavations in open water areas; to determine the elevation of ground water; to place reinforcing steel and concrete meeting the requirements of these Specifications within the prescribed time frame; and to execute any other necessary construction operation. Revise the methods and equipment as necessary at any time during the construction of the method shaft when unable to satisfactorily carry out any of the necessary operations described above or when unable to control the dimensions and alignment of the shaft excavation within tolerances.

Successfully construct method shafts out of permanent position at the location shown in the Plans. Ensure the diameter and depth of the method shafts are the same diameter and maximum depth as the production drilled shafts. When there are shafts both on land and in water, successfully construct a method shaft for each condition. When there is more than one size of drilled shaft, perform a method shaft for the largest diameter for each condition. Reinforce the method shaft unless otherwise directed in the Contract Documents. Conduct integrity tests on each shaft, using both cross-hole sonic logging and TITDS test methods. Fill the method shaft with concrete in the same manner production drilled shafts will be constructed. Backfill method shafts which are not filled with concrete with suitable soil in a manner satisfactory to the Engineer. Leave concreted method shafts in place, except remove the top of the shaft to a depth of 2 feet below the ground line. Use the same procedure for shafts constructed in water. Restore the disturbed areas at the sites of method shafts drilled out of position as nearly as practical to their original condition. When the Contractor fails to demonstrate to the Engineer the adequacy of his methods or equipment, and alterations are required, make appropriate modifications and provide additional method shafts at no expense to the Department. Make no changes in methods or equipment after initial acceptance without the consent of the Engineer.

A separate method shaft is not required for drilled shafts installed under sign, signal, lighting and ITS structures. The first production shaft will serve as a method shaft for determining acceptability of the installation method.

455-19 Test Bells.

Test bells are no longer used.

455-20 Construction Tolerances.

Meet the following construction tolerances for drilled shafts:

1. Ensure that the top of the drilled shaft is no more than 3 inches laterally in the X or Y coordinate from the position indicated in the Plans.
2. Ensure that the vertical alignment of the shaft excavation does not vary from the alignment shown in the Plans by more than 1/4 inches per foot of depth.
3. After placing all the concrete, ensure that the top of the reinforcing steel cage is no more than 6 inches above and no more than 3 inches below plan position.
4. Ensure that the reinforcing cage is concentric with the shaft within a tolerance of 1-1/2 inches. Ensure that concrete cover is a minimum of 4-1/2 inches unless shown otherwise in the Plans.
5. Ensure that the minimum diameter of the drilled shaft is not smaller than the specified diameter minus 1 inch. All casing diameters shown in the Plans refer to I.D. (inside

diameter) dimensions. However, the Contractor may use casing with an outside diameter equal to the specified shaft diameter if the extra length described in 455-15.7 is provided. In this case, ensure that the I.D. of the casing is not smaller than the specified shaft diameter minus 1 inch. The Contractor may elect to provide a casing larger in diameter than shown in the Plans to facilitate meeting this requirement. When conditions are such that a series of telescoping casings are used, provide the casing sized to maintain the minimum shaft diameters listed above.

6. Except when a butting or encroaching within a sidewalk, ensure that the top elevation of the drilled shaft concrete has a tolerance of plus 1 inch and minus 3 inches from the top of shaft elevation shown in the Plans.

7. When abutting or encroaching within a sidewalk, ensure that the top elevation of the drilled shaft is flush with the sidewalk surface.

8. The dimensions of casings are subject to American Petroleum Institute tolerances applicable to regular steel pipe.

9. Use excavation equipment and methods designed so that the completed shaft excavation will have a flat bottom. Ensure that the cutting edges of excavation equipment are normal to the vertical axis of the equipment within a tolerance of plus or minus 3/8 inches per foot of diameter.

455-21 Drilled Shaft Excavations Constructed out of Tolerance.

Do not construct drilled shaft excavations in such a manner that the concrete shaft cannot be completed within the required tolerances. The Contractor may make corrections to an unacceptable drilled shaft excavation by any combination of the following methods:

1. Overdrilling the shaft excavation to a larger diameter to permit accurate placement of the reinforcing steel cage with the required minimum concrete cover.

2. Increasing the number and/or size of the steel reinforcement bars.

When the tolerances are not met, the Contractor may propose a redesign to incorporate shafts installed out of tolerance into caps or footings. Incorporate shafts installed out of tolerance at no expense to the Department. Ensure the Contractor's Engineer of Record performs any redesign and signs and seals the redesign drawings and computations. Do not begin any proposed construction until the redesign has been reviewed and accepted by the Engineer.

Backfill any out of tolerance shafts in an accepted manner when necessary until the redesign is complete and accepted. Furnish additional materials and work necessary, including engineering analysis and redesign, to effect corrections of out of tolerance drilled shaft excavations at no expense to the Department.

455-22 Recording, Certification and Verification.

455-22.1 Recording: Inspect and record all the drilled shaft operations. Keep a set of drilled shaft logs for each drilled shaft including test holes, load test shafts and production shafts. Use the Department's Drilled Shaft Log forms to record the information. Submit to the Engineer drilled shaft logs and concrete logs within 24 hours of concrete placement. The documentation shall include the drilled shaft installation procedures, actual dimensions and quantities of the materials used, fluid testing results, bottom cleanliness inspection results, sequencing, as well as any problems encountered during construction and concrete placement. Allow two working days, excluding weekends and Department observed holidays, for the Department to review the data and determine whether shafts will be selected for CSL integrity testing. Perform CSL testing on any shaft selected by the Department at this stage in accordance with 455-17.

455-22.2 Foundation Certification Packages: Submit certification packages of drilled shaft foundations to the Engineer prior to Verification Testing. Each Foundation Certification Package shall include a letter signed and sealed by the GFDEOR certifying the drilled shafts have the required axial capacity, torsional capacity, uplift capacity, overturning and lateral stability, integrity deficiencies have been corrected, settlements will not affect the functionality of the structure, and that the inspection of the drilled shaft installation was performed under the supervision of the GFDEOR. Include all shaft excavation and concreting logs, videos of visual shaft bottom inspections, all CSL reports and electronic data, gamma-gamma testing reports, slurry test data, supplemental testing data, analyses for the foundation unit and the concrete strength test results of the lots sampled. The certification shall not be contingent on any future repair or testing, or any approval by the Engineer. Submit a separate Foundation Certification Package for each foundation unit. A foundation unit is defined as all the shafts within one bent or pier for a specific bridge for each phase of construction. For sign, signal, lighting and ITS structures, a foundation unit is defined as all the shafts within one intersection/interchange, for each phase of an intersection/interchange or all the shafts included in the structure.

455-22.3 Verification: The Engineer reserves the right to observe and perform verification testing on any drilled shafts during any phases of the foundation operation.

Provide safe access and cooperate with the Engineer for verification of the drilled shafts, both during construction of shafts and after submittal of the certification package. The Engineer may verify the bottom cleanliness by over the shoulder review of the Contractor's visual inspection methods and/or by independent means. The Engineer may verify properties of drilling fluid at the time of concreting.

Within one working day, excluding weekends and Department observed holidays, of receipt of the Foundation Certification Package, the Engineer will examine the Certification Package and determine whether shafts in that foundation unit will be selected for Verification Testing. The Engineer may select every shaft for Verification Testing if defects are suspected, or choose not to require verification testing on any or all foundation units. The Engineer will provide equipment and personnel as needed for Verification Testing. Methods used for Verification Testing of a completed shaft are at the discretion of the Engineer and may include coring, cross-hole sonic logging, gamma-gamma density logging, low-strain dynamic integrity testing, or other methods.

After Verification Testing for a foundation unit is performed, the Engineer will provide the results within five working days, excluding weekends and Department observed holidays. Integrity testing access tubes shall not be grouted and construction of footings, caps, columns or any superstructure elements shall not occur until the Engineer has notified the Contractor that additional Verification Testing is not required.

If any shaft is found to be deficient, correct the deficiency (i.e. repair or replace the shaft) and/or modify the design to compensate for the deficiency. After the deficiency is corrected, retest and recertify the shaft. The Engineer may then perform additional Verification Testing. In case of disagreement of test results, the Engineer's results will be final and used for determination of acceptance.

ARTICLE 455-23 is deleted:

455-24 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying drill shaft foundations, in place and accepted. No separate payment will be made for any items of work associated with construction of drill shaft foundations.

D. SPREAD FOOTINGS

455-25 Description.

Construct reinforced concrete spread footing foundations, including dewatering when necessary, excavating to the required limits, compacting the underlying soil as required, and constructing seals when required.

455-26 General Requirements.

Meet the following requirements for all spread footings:

1. Perform excavations, including the removal of all material, of whatever nature, necessary for the construction of spread footings. As used herein, the term "soil" shall constitute any material, whether soil, rock, or other materials.
2. Slope excavations as required, or support them with sheeting, and shore them if necessary, to provide a safe excavation that is adequate for construction purposes and that will adequately protect any existing adjacent structures.
3. Ensure that the foundation soils are firm, stable, and meet or exceed the design bearing and compressibility requirements before constructing the footings or any required seals. The Department may elect to use any type of tests to evaluate the foundation soils that is appropriate in the opinion of the Engineer. Cooperate with the Engineer in the evaluation of the foundation soils, and assist the Engineer as necessary to provide access to the site.
4. Modify the elevation of the bottom of footings or seals and the depth of over-excavation shown in the Plans as may be necessary to secure a satisfactory foundation.
5. Place all spread footing concrete in the dry.

Provide safe access and cooperate with the Engineer to perform verification of the spread footing construction.

455-26.1 Foundation Certification Packages:

Submit two copies of a letter signed and sealed by the GFDEOR to the Engineer certifying each spread footing has the required axial, lateral and torsional capacity, overturning stability and integrity; and settlement will not affect the functionality of the structure. A separate Foundation Certification Package must be submitted for each foundation unit. A foundation unit is defined as a spread footing. Spread footings must be certified and the certification accepted before continuing with the construction of any structural element above the foundation unit. Correct all integrity problems and non compliance issues prior to submitting the certification packages. The certification shall not be contingent on any future repair or testing, or any approval by the Engineer.

Within one working day, excluding weekends and Department observed holidays, after receipt of the Foundation Certification Package, the Engineer will examine the records and determine the acceptability of the shallow foundation.

455-27 Monitor Existing Structures.

Monitor existing structures in accordance with Section 108.

455-28 Dewatering.

The Contractor is responsible for the design, installation, and operation of an adequate dewatering system to dewater excavations for spread footings. Use a well point or well system. Submit a dewatering plan to the Engineer for his records before beginning construction.

Use well points or wells where the piezometric water level is above an elevation 3 feet below the bottom of the excavation. Maintain the water table 3 feet or more below the maximum depth of excavation. Provide continuous dewatering until completing construction of the footing and backfill the excavation at least 3 feet above the piezometric water table elevation. In the event of a dewatering failure, determine the effects of such a failure on the foundation soils, and take whatever corrective measures are required at no additional expense to the Department. When discontinuing dewatering, decrease the rate of pumping, allowing the water level to rise slowly. Use a rate, in feet per hour, that the water table is allowed to rise equal to the total number of feet the water table was lowered, divided by ten hours or a rate of 1 foot per hour, whichever is less.

Install one piezometer well approximately every 15 feet of footing perimeter. Provide a minimum of two piezometers at locations within 2 feet from the outside of the footing perimeter. Install piezometer wells to a depth at least 10 feet below the bottom of footing elevation. Measure water elevation in the piezometer wells prior to excavation and at 12-hour intervals between excavation and discontinuation of dewatering. Maintain the piezometers in working condition throughout the dewatering process, and repair or replace them when damaged at no expense to the Department.

455-29 Excavations

If the excavation must be carried deeper than shown in the Plans to obtain a satisfactory foundation, revise the Plans.

455-29.1 Dry Excavations: Dry excavations are excavations that can be completed without the need to lower the piezometric water level. Perform dry excavations when the piezometric water level at the time of construction is and, in the opinion of the Engineer, will remain at least 3 feet below the bottom of the authorized excavation or over-excavation. Demonstrate to the Engineer that a stable excavation can be made without dewatering. Make adequate provisions to divert surface runoff and to collect and remove any water entering the excavation.

Excavate to the bottom of footing, to the over-excavation limits shown in the Plans or as required for forming. Save any suitable materials for backfill. Provide areas for the disposal of all unsuitable materials, and dispose of them in a satisfactory method. Compact the foundation soils below the footing as described herein before constructing the footing.

455-29.2 Dewatered Excavations: Dewatered excavations are excavations made after first lowering the piezometric water level with wellpoints or wells. Perform dewatering as described in 455-28. Excavate in the dry after lowering of the water table.

When dewatering is required, the Contractor may excavate within 3 feet of the ground water table before dewatering begins if the dewatering system is operating and the Contractor has demonstrated that the water level has been lowered to and maintained at acceptable limits. Where large excavations require stage lowering of the water table (additional wellpoint systems installed at lower elevations), the Contractor may continue excavating as long as the water elevation is maintained at least 3 feet below the excavation.

Ensure that surface runoff is diverted from the excavation. Compact the foundation soils as shown in the Plans or as described herein before constructing the footing.

455-29.3 Wet Excavations: Wet excavations are excavations made below the existing water table without prior dewatering. When the Plans show a cofferdam and seal, perform the excavation in the wet. Maintain the water level during excavation at or above the water level outside the cofferdam.

Place the seal directly upon the foundation soils or rock when using wet excavations. Do not compact foundation soils for wet excavations. Ensure that the foundation soils or rock are disturbed as little as practical. Remove all loose or disturbed materials before placing the seal concrete.

455-30 Fill or Backfill.

In all excavations, including over-excavations below the footing, use only fill or backfill materials considered Select in accordance with Standard Plans, Index 120-001. Ensure the material is free of rubble, debris, or rocks that would prevent uniform placement and compaction. Ensure the material below the top of the footing is free of Recycled Asphalt Pavement (RAP). Perform sampling and testing in accordance with 120-10.1.4, except replace FM 1-T99 with FM 1-T180,.

455-31 Compaction and Density Requirements.

Compact the bottom of the excavation with suitable equipment. Compact the soil beneath footing excavation (whether dug to the bottom of footing or over-excavated) to a density not less than 95% of the maximum density as determined by FM 1-T180 for a minimum depth of 2 feet below the bottom of the excavation or to the depth shown in the Plans before backfilling begins. For every 500 feet of excavation or isolated compaction operation, perform two Quality Control (QC) density tests with a 12 inch depth of measurement: one QC density test with the gauge placed at an elevation of 1 foot below the bottom of the excavation and one QC density test with the gauge placed at the bottom of the excavation in accordance with FM 1-T238. Compact the backfill in footing excavations which have been over-excavated to a density not less than 95% of the maximum density as determined by FM 1-T180. Ensure that the maximum lift thickness after compaction does not exceed 6 inches. For every 500 feet of backfill or isolated compaction operation, perform at least one QC density test. The Engineer will conduct one density verification test per every four QC test with a minimum of one density test below the bottom of the excavation and one density test in the backfill. Verification comparison criteria and resolution procedures will be in accordance with 120-10.4 except replace FM 1-T99, with FM 1-T180.

For compaction, use a suitable heavy vibratory roller with a static drum weight of at least 4 tons. Compact each lift to the required density. Also, compact the final lift below the footing with a suitable sled vibratory compactor to remove any upper disturbance caused by the drum roller. When conditions require use of smaller compaction equipment, obtain the Engineer's acceptance for the equipment, and reduce the lift thickness to achieve the required density.

Perform backfilling to the original ground surface, finished grade, or subgrade as required by the Plans in the immediate vicinity by suitable mechanical compactors weighing less than 1,000 pounds. The Contractor may compact backfill located more than 15 feet away from the exterior periphery of the footing with heavier compactors. Do not place backfill on the footing until the Engineer has given permission and until the concrete is at least seven days old.

When the plans indicate spread footing abutments on mechanically stabilized earth (MSE) walls, place and compact the backfill material underneath the footing in accordance with the requirements of 548-8.5. Meet the density requirements of 548-9.4.

455-32 Forming.

Form spread footings if it cannot be demonstrated that the natural soil or rock is strong enough to prevent caving during construction. For forms, meet the applicable requirements of 400-5. When forms are not required, meet the requirements of 400-5.4.4.

455-33 Materials.

455-33.1 Concrete: Meet the requirements of Section 346.

455-33.2 Reinforcing Steel: Meet the requirements of Section 415. For spread footing reinforcing steel, use Grade 60.

455-34 Reinforcing Steel Placement.

Place and fasten reinforcing steel for footings according to the applicable provisions of 415-5.

455-35 Concrete Placement.

455-35.1 Placement: Place all footing concrete in the dry and according to the applicable provisions of Section 400. Do not construct joints in footings.

455-35.2 Finish: After placing and consolidating the concrete, strike-off the top surface to the grades shown in the Contract Documents, leaving the surface smooth and free of undesirable cavities and other defects. Do not provide a special finish unless the footing will be visible after construction, in which case, meet the applicable provisions of Section 400.

455-35.3 Curing: Provide continuous-moisture-curing for footings. For cover materials, use clean sand, sawdust, or other materials accepted by the Engineer. Continuously wet the cover materials for a period of 72 hours.

ARTICLE 455-36 is deleted:

455-37 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying the completed foundations, in place and accepted. No separate payment will be made for any items of work associated with spread footing construction.

**E. STRUCTURES (OTHER THAN BRIDGE)
FOUNDATIONS-AUGER CAST PILES****455-38 Description.**

Furnish and install auger cast piles (ACP) or augered cast-in-place (ACIP) piles used for structural support, other than bridge foundations.

ACP piles are defined as a foundation made by rotating a hollow-stem auger into the ground to the required pile depth with sufficient crowd (downward thrust) to prevent mining of the soil. A fluid cement grout is injected through the auger shaft under continuous positive pressure as the auger is being withdrawn. A reinforcing steel cage, as specified, is inserted into the column of fluid grout following the completion of grout placement.

455-39 General Requirements.

455-39.1 Contractor's Operations: Submit an Auger Cast Pile Installation Plan in accordance with 455-47. Prior to the start of production piles, demonstrate to the satisfaction of

the Engineer, the dependability of the equipment, techniques, and source of materials by construction of a demonstration pile.

Provide safe access and cooperate with the Engineer to perform verification of the auger cast pile installation.

455-39.2 Monitor Existing Structures: Monitor existing structures in accordance with Section 108.

455-40 Materials.

Meet the following material requirements:

Portland Cement and Blended Cement	Section 921
Supplementary Cementitious Materials	Section 929
Fine Aggregate (Sand)*	Section 902
Admixtures	Section 924
Water	Section 923
Fluidifier**	ASTM C 937
Reinforcing Steel.....	Section 415

* The Engineer will only permit Silica Sand except as provided in 902-5.2.3.

** The fluidifier shall not contain chlorides.

455-41 Grout Mix Proportions.

Use a grout mix consisting of a mixture of cementitious materials, admixtures, sand and water. Proportion and mix to produce a grout capable of maintaining the solids in suspension without appreciable bleed water which may be pumped without difficulty and fill open voids in the adjacent soils and rock. The grout mix may include a fluidifier used in accordance with the manufacturer's technical representative. Proportion these materials to produce a hardened grout of the required strength.

455-42 Mixing and Pumping Cement Grout.

Meet the following requirements:

1. Only use pumping equipment accepted by the Engineer in the preparation and handling of the grout. Before using the mixers, remove all oil or other rust inhibitors from the mixing drums, stirring mechanisms, and other portions of the equipment in contact with the grout.

2. Use a quantity of water and mixing time that will produce a homogenous grout having an efflux of not less than 21 seconds, when tested with a flow cone in accordance with ASTM D6449. Reject loads with efflux of less than 21 seconds. Notify the production facility to adjust the mix design. Calibrate the flow cone in accordance with ASTM D6449. Conduct the calibration initially before its first use and as directed by the Engineer, when there is a question of the flow cone's accuracy.

Technicians performing the efflux test must take the Auger Cast Pile course and pass the final examination to be qualified to test for any auger cast pile installations in the field. Assist the Engineer in verifying the technicians meet these requirements.

Conduct test for efflux time at the beginning of each day's grouting operation and as directed by the Engineer to ensure the Specification requirements are met.

3. Mix the grout at least one minute. If agitated continuously, the grout may be held in the mixer or agitator for a period not exceeding 2.5 hours at grout temperatures below

70°F; two hours for temperatures from 70°F to 100°F. Do not place grout when its temperature exceeds 100°F. If there is a lapse in the operation of grout injection, recirculate the grout through the pump, or through the mixer drum or agitator.

4. Use mixers capable of combining components into a thoroughly mixed and uniform mass, free from balls or lumps and capable of discharging the grout with a satisfactory degree of uniformity. The Engineer's acceptance of grout mixers and all other equipment will be contingent on proper performance during construction of the demonstration pile and subsequent production work.

5. Use a screen no larger than 3/4 inch mesh between the mixer and pump to remove large particles which might clog the injection system.

6. Use a positive displacement piston type grout pump equipped with a pressure gauge, capable of developing displacing pressures at the pump not less than 350 psi. The pump must be appropriately sized to the pile diameter. Provide a grout pressure gage in clear view of the equipment operator. Provide a second pressure gauge near the drill rig where it can be observed by the Engineer.

7. Accurately monitor the volume and pressure of the grout flow. Provide a pump stroke counter in good working condition on the grout pump. Perform a calibration test of the pumping equipment, prior to construction of the demonstration piles, to determine the average volume of grout for every pump stroke, in accordance with FM 5-612. When the Contractor's installation procedure includes priming the grout pump, grouting lines or auger conduit after drilling the hole, perform a priming demonstration to determine the minimum number of pump strokes required to deliver fresh grout throughout the entire system and flow from the grout injection hole at the bottom of the auger. Perform this grout priming demonstration prior to any calibration test.

The Engineer may require additional pump calibrations and priming demonstrations when the pump is repaired, a different pump is used, when the length of the grout lines or hollow auger lengths increase from previous piles for which priming demonstrations were performed and at any time the Engineer determines the grout pump performance may have changed.

455-43 Testing Cement Grout.

Prepare three 4 inches x 8 inches cylinders for each LOT in accordance with ASTM C31, except pour grout in a single lift into cylinders molds without rodding. Plastic properties in accordance with ASTM C31 are not required. A LOT is defined as the lesser of 50 cubic yards of cement grout placed or one day of pile placement. Prepare three additional QC "hold" cylinders on the LOT selected by the Engineer for Verification. Provide curing facilities for all QC and Verification test cylinders in accordance with ASTM C31. Test the cylinders at 28 days, in accordance with ASTM C39.

When one of the three QC cylinders from a LOT is lost, missing, damaged or destroyed, determination of compressive strength will be made by averaging the remaining two cylinders. If more than one QC cylinder from a LOT is lost, missing, damaged or destroyed, core the structure at no additional expense to the Department to determine the compressive strength. Acceptance of LOT may be based on verification data at the discretion of the Engineer. Obtain the approval of the Engineer to core, and of the core location prior to coring. Repair core holes after samples are taken with a product meeting the approval of the Engineer, at no additional cost to the Department.

For each QC cylinder that is lost, missing, damaged or destroyed, payment for that LOT will be reduced by \$750.00 per 1,000 psi of the specified design strength [Example: For

$f'_c=5,500$ psi, and the loss of two auger cast pile grout QC cylinders that have no verification data will require the element to be cored and a pay reduction will be assessed (5,500 psi / 1,000 psi) x \$750 x 2 = \$8,250]. This reduction will be in addition to any pay adjustment for low strength.

The Engineer will cast three verification cylinders and three “hold” cylinders from one of every four consecutive Lots, randomly selected. The Engineer will compare QC and Verification results in accordance with Section 346. If the results do not compare, the Engineer will initiate a Resolution Investigation in accordance with Section 346

Personnel making/curing grout cylinders shall be certified as ACI Concrete Field Testing Technician Grade I. Personnel performing tests on hardened properties of grout, such as strength determination of cylinders or beams, shall be certified as ACI Concrete Strength Testing Technician.

All low strength cement grout accepted by the Engineer will be subject to reduced payment as follows: \$0.80 per cubic yard for each 10 psi of strength test value below the specified minimum strength. The Engineer will use the average compressive strength of the LOT tests for the computation of this pay reduction.

The Engineer will compute the volume of grout for which the reduction will be applied as 115% of the theoretical volume of the auger cast pile diameter required in the Contract Documents. Reduction in pay will be applied to the entire length of all piles containing low strength cement grout, in any quantity. The quantity of cement grout affected by the payment reduction may exceed the quantity of cement grout contained in the LOT.

When a cement grout acceptance strength test falls more than 500 psi below the specified minimum strength, perform one of the following:

1. Remove and replace the piles affected fully or partially by the low strength LOT at no additional cost to the Department, or
2. Submit a structural analysis performed by the Contractor’s Engineer of Record. If the results of the analysis, approved by the Department, indicate adequate strength to serve the intended purpose with adequate durability, the concrete may remain in place.

Otherwise, abandon and install additional piles to the foundation, or remove and replace the piles affected fully or partially by the low strength LOT of grout at no additional cost to the Department. When installing additional piles to resolve the strength deficiency, submit a foundation redesign to add piles into pile caps or footings, at no expense to the Department in accordance with 455-46.

455-44 Pile Installation.

Meet the following requirements:

1. Locate the piles as shown on the drawings.
2. Should soft, compressible muck, organics, clay or other unsuitable materials (non A-1, A-3, A-2-4 or limestone materials) be encountered, remove the unsuitable material to a maximum depth of 5 feet and a radial distance around the pile centerline of two pile diameters unless otherwise indicated in the Plans. Backfill with clean granular backfill materials (A-1, A-3, A-2-4), placed and compacted in maximum 12 inch lifts to at least 95% of maximum dry density as determined by FM 1-T180. Complete this work to the Engineer’s satisfaction prior to ACP construction. Should more than 5 feet depth or excessive quantities of unsuitable material be encountered, submit a revised design to the Engineer for review and acceptance prior to proceeding with pile construction.

3. Provide continuous auger flighting from the bottom of the pile to the top of ground at the time of drilling with no gaps or other breaks except for connections. Ensure the auger flights are uniform in diameter throughout its length, and of the diameter specified for the piles less a maximum of 3%. Provide augers with a distance between flights of approximately half the diameter of the auger.

4. Use augers with the grout injection hole located at the bottom of the auger tip below the cutting teeth, and with pile auger leads containing a bottom guide.

5. Construct piles of the length and diameter shown on the Plans.

6. Clearly mark the auger leads to facilitate monitoring of the incremental drilling and grout placement. Provide individual foot marks with 5 foot increments highlighted and clearly visible. Provide a clear reference mark on the moving auger assembly to facilitate accurately monitoring the vertical movement of the auger.

7. Place piles by rotating a continuous flight hollow shaft auger into the ground at a continuous rate that prevents removal of excess soil. Stop advancement after reaching the predetermined depth.

8. Should auger penetration to the required depth prove difficult due to hard materials/refusal, the pile location may be predrilled, upon concurrence by the GFDEOR and acceptance of the Engineer, through the obstruction using appropriate drilling equipment, to a diameter no larger than 1/2 the prescribed finish diameter of the ACP. Commence ACP grouting immediately upon reaching the required tip elevation to minimize ground loss and soil relaxation.

9. Plug the injection hole at the bottom of the auger prior to advancing into the ground.

10. Pump the grout with sufficient pressure as the auger is withdrawn to completely fill the auger hole, preventing hole collapse and to cause the lateral penetration of the grout into soft or porous zones of the surrounding soil or rock. Prior to commencing withdrawal of the auger, establish a head of at least 5 feet of grout by pumping a volume of grout equivalent to 5 feet of pile volume. Do not include the volume or strokes required to prime the grout pumping system in the volume required to build this initial head. Maintain this head of at least 5 feet of grout above the injection point around the perimeter of the auger to displace and remove any loose material from the hole. Maintain positive rotation of the auger at least until placement of the grout.

11. Once the grout head has been established, greatly reduce the speed of rotation of the auger and commence extraction at a rate consistent with the pump discharge. Maintain extraction at a steady rate to prevent a locked-in auger, necking of the pile, or a substantially reduced pile section. Ensure grout starts flowing out from the hole when the cutting head is at least 5 feet below the ground surface. Place a minimum volume of grout in the hole of at least 115% of the column of the auger hole from a depth of 5 feet to the tip. Place a minimum volume of grout in the hole of at least 105% of the column of the auger hole from the ground surface to a depth of 5 feet. Do not include any grout needed to create surplus grout head in the volume of grout placed into the hole. If the grout does not flow out from the hole when the cutting head is at least 5 feet below the ground surface, redrill the pile. If grouting is interrupted for any reason, reinsert the auger by drilling at least 5 feet below the tip of the auger when the interruption occurred, and then regrout.

Use this method of placement at all times. Do not depend on the stability of the hole without the earth filled auger.

12. Assume responsibility for the grout volume placed. If less than 115% of the theoretical volume of grout is placed in any 5 foot increment (100% in the top 5 foot increment), redrill 10 feet below that increment, or to the tip of the pile, whichever is less and resume pumping, followed by controlled removal and grout injection.

13. Furnish and install the reinforcing steel and anchoring bolts as shown in the Contract Documents. For ACP for miscellaneous structures and low clearance post options for noise walls, use wheels or other approved noncorrosive spacing devices within 3 feet of the bottom, within 3 feet of the top, and intervals not exceeding 10 feet along the pile to ensure concentric spacing for the entire length of the cage. Do not use block or wire type spacers. Use a minimum of one spacer per 30 inches of circumference or perimeter of cage with a minimum of three at each level. For noise wall ACP in which the full reinforcement is attached to the post, spacing devices within 3 ft of the top of the pile are not required.

14. Use reinforcement that is without kinks or nonspecified bends, free of mud, oil or other coatings that could adversely affect the bond. Make splices in reinforcement as shown on the Contract Documents, unless otherwise accepted by the Engineer. Place the required steel reinforcement while the grout is still fluid, and immediately after finishing grouting and clearing it from any contaminating material. Install the steel cage into the grout by its own weight or manually. Do not use a mechanical equipment or tool to impact the steel cage or to force it into the grout. If the steel cage cannot be placed completely following this procedure, remove the cage, redrill and regrout the pile.

15. Leave any temporary supports of/for items placed into a grouted pile (reinforcement template, anchor bolt template, precast column supports, etc.) in place for a minimum of 12 hours after completion of the pile. Do not place wall panels or other significant loads, before the grout has set a minimum of seven days or reached the 28-day strength.

455-45 Construction Tolerances.

Locate piles as shown on the Plans. Locate pile centers to an accuracy of plus or minus 3 inches. Ensure that the top of pile elevation is within plus or minus 3 inches of the Plan elevation. Ensure the tolerances of 534-5.1 can be met.

455-46 Unacceptable Piles.

Repair or replace unacceptable piles and/or modify the design to compensate for the deficiency at no cost to the Department. Unacceptable piles are defined as piles that fail for any reason, including but not limited to the following: piles placed out of position or to improper elevation; piles with reduced cross section, contaminated grout, lack of grout consolidation (honeycombed), or deficient grout strength; and piles with reinforcement, anchor devices or other components cast or placed into the fluid grout out of position. When the Engineer determines that a pile is unacceptable, the Contractor may propose a foundation redesign to add piles to the foundation, at no expense to the Department. The Contractor's Engineer of Record must perform any redesign, and sign and seal the redesign drawings and calculations. Do not begin any proposed construction until the redesign has been reviewed and approved by the Engineer.

455-47 Auger Cast Pile Installation Plan (ACPIP).

No later than 15 days before ACP construction begins, submit the ACPIP for acceptance by the Engineer. The ACPIP shall govern all ACP construction activities. In the event that deviations from this installation plan are observed, the Department may perform Independent

Verification Testing/Review of the Contractor's equipment, procedures, personnel and ACP construction at any time during ACP construction. If, as determined by the Department, construction equipment, procedures and/or personnel is deemed inadequate to consistently provide auger cast piles meeting the contract requirements, the Contractor's ACPIP acceptance may be withdrawn pending corrective actions. All ACP construction activities shall then cease and not restart until corrective actions have been taken and the ACPIP has been re-accepted.

Provide the following detailed information on the ACPIP:

1. Name and experience record of ACP superintendent or foreman in responsible charge of ACP operations. Place a person in responsible charge of day to day ACP operations meeting the experience requirements of 105-8.13 constructing ACP similar to those described in the Contract Documents. The Engineer will give final acceptance subject to satisfactory performance in the field.

2. List and size of the proposed equipment, including cranes, augers, concrete pumps, mixing equipment etc.

3. Details of grout mixing procedures and proposed pump calibration procedures.

4. Details of pile installation methods.

5. Details of reinforcement placement and method of centering in pile, including details of all temporary supports for reinforcement, anchor bolts, precast columns, etc.

6. Details of how and by whom the grout volumes will be determined, monitored and documented.

7. Required submittals, including shop drawings and cement grout design mixes.

8. Equipment and procedures for visual inspection, and any methods to identify and remediate auger cast pile deficiencies.

9. Name of the inspectors assigned to monitor the installation of the auger cast piles, including evidence of the inspectors having taken and passed the CTQP computer based training course for auger cast piles.

10. Other information requested by the Engineer.

11. A letter from the GFDEOR certifying concurrence with the ACPIP.

The Engineer will evaluate the ACPIP for conformance with the Contract Documents. Within five working days after receipt of the plan, excluding weekends and Department observed holidays, the Engineer will notify the Contractor of any comments and additional information required and/or changes that may be necessary to satisfy the Contract Documents. The Engineer will reject any part of the plan that is unacceptable. Submit changes agreed upon for reevaluation. The Engineer will notify the Contractor within two working days, excluding weekends and Department observed holidays, after receipt of proposed changes of their acceptance or rejection. All equipment and procedures are subject to trial and satisfactory performance in the field. Acceptance by the Engineer does not relieve the Contractor of the responsibility to perform the work in accordance with the Contract Documents. The Engineer's acceptance is not a guarantee that the chosen methods and equipment are capable of obtaining the required results, this responsibility lies with the Contractor.

455-48 Inspection and Records.

Monitor and record pile installation utilizing the most recent version of the Department Auger Cast-In-Place Pile Installation Record form.

ARTICLE 455-49 is deleted:

455-50 Basis of Payment.

Contract Price includes cost of all labor, equipment and materials required for furnishing, installing, and certifying the completed auger cast pile foundations, in place and accepted. No separate payment will be made for any items of work associated with auger cast pile construction.

455-51 Foundation Certification Packages

Submit two copies of a letter signed and sealed by the GFDEOR to the Engineer certifying each foundation unit has the required axial capacity, lateral stability and integrity, settlements will not affect the functionality of the structure, and that the inspection of the auger cast pile installation was performed under the supervision of the GFDEOR. A separate Foundation Certification Package must be submitted for each foundation unit. The foundation unit is defined as a group of piles per wall segment or per full wall. Every ACP must be certified and the certification accepted before continuing with the construction of any structural element over the foundation unit. Each Foundation Certification Package shall include all ACP logs, the Department spreadsheet properly completed for every ACP and the grout strength test results of the lots sampled. Correct all integrity problems and noncompliance issues prior to submitting the certification packages. The certification shall not be contingent on any future repair or testing, or any approval by the Engineer. Within three working days, excluding weekends and Department observed holidays, after receipt of the Foundation Certification Package, the Engineer will examine the records and determine the acceptability of the auger cast piles. The Engineer will reject any certification package that is incomplete or indicates noncompliance with the specifications without the issue being corrected to the satisfaction of the Engineer.

If any ACP is found to be deficient, correct the deficiency (i.e. repair or replace the ACP) and/or modify the design to compensate for the deficiency. In case of disagreement of test results, the Engineer's results will be final and used for determination of acceptance.

After meeting the time requirements of 455-44(15), the Contractor may place panels prior to a complete submittal of the Certification Package at their own risk. If the Engineer determines that verification testing is needed, the Contractor will perform all work and provide all labor, at no additional cost to the Department, necessary to allow access to the piles requiring verification. Replace or redesign and reconstruct, to the satisfaction of the Engineer, any foundation found to be unacceptable after submittal of the certification packages or after verification testing, at no cost to the Department.

475 VALUE ADDED BRIDGE COMPONENTS.
(REV 1-8-21) (FA 1-14-21) (1-22)

The following new Section is added after Section 471.

SECTION 475
VALUE ADDED BRIDGE COMPONENTS

475-1 Description.

Construct Value Added Bridge Components (VABC), when included in the Contract, consisting of those features provided for in the Design and Construction Criteria and/or the Technical Proposal and subject to a Materials and Workmanship Warranty.

The Contractor shall assume responsibility for all the associated warranty work specified in this section for a minimum period of five years, unless otherwise stated in the contract, after final acceptance of the Contract in accordance with 5-11, including continued responsibility as to any deficiencies to which notice was provided to the Contractor within such warranty period until all such pre-existing deficiencies are resolved.

475-2 Responsible Party.

For the purpose of VABC, the Contractor shall be the Responsible Party unless otherwise agreed to in writing by the Department. Upon final acceptance of the Contract in accordance with 5-11, the Contractor's responsibility for maintenance of all the work or facilities within the project limits of the Contract will terminate in accordance with 5-11; with the sole exception that the obligations set forth in this section for bridge components shall continue thereafter to be the responsibility of the Responsible Party as otherwise provided in this section.

475-3 Evaluation and Remedial Action.

475-3.1 Definition of Value Added Bridge Components: The following is a definition of the bridge components for which this provision applies and for which the Responsible Party shall warrant performance:

Bridge Deck Expansion Joint Devices and Hardware: Any device, with its accompanying hardware, that is installed inside the top of an expansion joint of a bridge deck in order to provide a smooth riding surface across the joint opening and to prevent water and debris from entering the joint. This includes expansion devices that are designed to handle large expansions and contractions such as modular bridge expansion devices.

Coatings: Paints, applied finishes or applied coatings that are used on the metal, concrete or wood surfaces of structures for the purpose of protection from the elements or for aesthetic enhancement.

Bearing Devices: A metal and/or elastomeric device that transfers loads and accommodates rotation and translation from a bridge superstructure element such as a beam, to a bridge substructure element such as a pier or bent without damage or overstress of either the substructure or the superstructure. All bearings transfer vertical loads, but fixed bearings only allow rotation and do not allow the superstructure to translate horizontally (expand and contract) in relation to the substructure. Expansion bearings allow the superstructure to translate horizontally as well as to rotate in relation to the substructure.

Bridge Lighting/Electrical Systems: All electric power, electric control devices, and solar power units with accompanying hardware that are used to provide bridge navigation lighting, aesthetic lighting, and electric power for receptacles and lights used by maintenance and inspection personnel.

Drainage Systems: All components of the bridge deck drainage system including anchorages, hangers, pipes, couplings, bends, inlets, cleanouts and grates.

475-3.2 Value Added Performance Period: The Responsible Party shall warrant performance of bridge components for at least the following periods or for a longer period if offered by the Contractor in his proposal which starts on the date of final acceptance of the Contract:

- (a) Bridge Deck Expansion Joint Devices and Hardware: Armor and Hardware - 5 years, Seals - 5 years
- (b) Coatings: 5 years
- (c) Bearing Devices: 5 years
- (d) Bridge Lighting/Electrical Systems: 5 years
- (e) Drainage Systems: 5 years

475-3.3 Deficiencies/Defects Requiring Remedial Action. The following is a detailed description, for each type of structural component, of deficiencies/defects that will require remedial action by the Responsible Party:

475-3.3.1 Bridge Deck Expansion Joint Devices and Hardware: water leakage through joints; separation of the seal from the steel or concrete substrate; failure of the seal material such as cracking, chalking, scaling, peeling, or splitting; sagging of elastomeric seal; warping of the steel plate or extrusion that is detrimental to the functioning of the joint; separation of the steel plate or extrusion from the deck concrete; spalling or delamination of the deck concrete within 18 inches of either side of the joint; and any defect in modular bridge expansion joint elements including backing bars, steel extrusions, flexible membranes, proportioning bars, bushings, pins, bearings, side frames, and tracks.

475-3.3.2 Coatings: visible corrosion or corrosion break through; blistering, peeling or scaling of the coating; application of the coating over debris, blasting medium, mill scale or corrosion products; coating thickness less than specified by the manufacturer; damage to the paint system due to the Contractor's operations during construction; or excessive fading or chalking of the coating as determined by the paint manufacturer's performance standards for the coating in question.

475-3.3.3 Bearing Devices: evidence of failure of any of the elements of the bearing assembly; cracks, checks, peels or corrosion present in the protective coating of the bearing or in the neoprene of elastomeric bearings; the bearing freezes or fails to allow the bridge to move as designed; or the bearing moves out or "walks out" of its designated position and; therefore, does not perform as designed.

475-3.3.4 Bridge Lighting/Electrical Systems: loose, substandard or failed wiring, conduit, anchorages, expansion couplings, and junction boxes; inoperable lighting fixtures, contactors, switches or receptacles; inadequate grounding or surge protection; and defective circuit breakers, step down transformers and photo cells.

475-3.3.5 Drainage Systems: grates that will not stay in position as designed or that fail to collect debris as intended; leaking pipes, couplings, bends, cleanouts or inlets; anchorages and hangers that are defective or that do not function properly; unacceptable drainage

discharge rates due to blockages in the system that are a result of construction defects and not solely attributable to accumulation of debris.

475-3.4 Required Remedial Action and Response Times: The Responsible Party will be required to remediate the deficiencies/defects described in 475-3.3, by taking the actions set forth in this provision for each type of VABC. The Responsible Party shall perform the required remedial actions within the maximum response times set forth in this provision and which start when written notification is received by the Responsible Party from the Department or when there is an emergency situation, response time starts with the Department's verbal notification which will be followed up in writing. If replacement components require a lengthy acquisition period, the maximum repair duration as specified in this provision will be extended at the Engineer's discretion. If the maximum response time will result in the Responsible Party completing the work after the performance period, as specified in 475-3.2, has expired then the expiration date for the affected structural component will automatically be extended to whichever comes first: the end of the maximum response time period or completion of the remedial action.

The Responsible Party shall complete all remedial work to the satisfaction of the Engineer.

The Statewide Disputes Review Board will resolve any disputes regarding the adequacy of the remedial work. Approval of remedial work does not relieve the Responsible Party from continuing responsibility under the provisions of this Specification.

Not less than 7 days prior to beginning any non-emergency remedial work, notify the Engineer in writing of the date when remedial work will begin. Meet the requirements of the Department's latest version of the Standard Specifications for Road and Bridge Construction when performing any remedial work.

Submit a written Work Plan to the Engineer for approval and do not begin remedial work until approval is received. The Work Plan shall describe the phases of construction that are planned and generally explain for each phase, the construction methods to be employed. In addition, the Work Plan shall list the materials that will be incorporated into the permanent VABC. For emergency situations, the Responsible Party shall discuss the Work Plan with the Engineer verbally and the Engineer will issue a temporary approval in order to allow work to begin in a timely manner. A written Work Plan as specified above will be required if the duration of the emergency remedial work extends beyond 72 hours.

Perform all remedial work at no cost to the Department.

475-3.4.1 Bridge Deck Expansion Joint Devices and Hardware: Damaged seals shall be removed and replaced with new seals. Seals that are displaced shall be completely removed, the joint shall be cleaned, and the seal may be reinstalled if not damaged during removal. Steel elements that are damaged, misaligned, or non-functional shall be restored to complete and full functionality. Remedial action for joint defects that represent an immediate traffic safety hazard (an emergency condition) shall begin within 4 hours of notification and work shall progress without interruption, 24 hours a day, until the immediate traffic safety hazard has been eliminated. Any remaining remedial work shall be completed as a non-emergency condition. For defects that may become a safety hazard in the near future, such as loose joint armor, remediation shall begin after 4 hours or as determined by the Engineer and shall be completed within 90 days. For all other defects, remediation shall be completed within 180 days.

475-3.4.2 Coatings: Repair or restore coatings as recommended in writing by the coating manufacturer's technical advisors with concurrence of the Engineer. Remediation shall be completed within 180 days.

475-3.4.3 Bearing Devices: Bearings shall be removed and replaced with new bearings or with approval of the Engineer, be restored to new condition and be reinstalled. Remediation shall be completed within 30 days if the structure is displaying any sign of immediate structural damage to any element other than the bearing device/s due to a bearing device defect. All other bearing device defects shall be corrected within 90 days.

475-3.4.4 Bridge Lighting/Electrical Systems: Navigation lights shall be restored immediately (emergency situation) and the Responsible Party may use a temporary system if the permanent lighting cannot be restored immediately. If, after verbal notification of failure by the Department, the Responsible Party states that it cannot respond immediately to a navigation light failure then the Department will respond at the Responsible Party's expense. Aesthetic and inspection lighting shall be restored within 90 days. Defective electrical components that are isolated such as receptacles, photo cells or surge protectors, and that are not causing an entire electrical system to malfunction, shall be corrected within 120 days.

475-3.4.5 Drainage Systems: Replace or repair defective grates. Permanently repair any system leaks. Full drainage discharge rates shall be restored if reduced drainage discharge rates exist due to construction defects or other system deficiencies that occurred because of substandard construction practices. Repair or replace any nonfunctional or defective anchorages and hangers. Remedial action for drainage deficiencies that represent an immediate traffic safety hazard (an emergency condition) shall begin within 6 hours of notification by the Department and work shall progress without interruption, 24 hours a day, until the immediate traffic safety hazard has been eliminated. Any remaining remedial work shall be completed as a non-emergency condition. For all other deficiencies, remediation shall be completed within 180 days.

475-4 Notification of Deficiencies/Defects and Inspections.

The Department will identify deficiencies/defects in a written report that will be transmitted to the Responsible Party along with an official notification of required remedial action if warranted. The Department will also transmit copies of periodic bridge deficiency reports to the Responsible Party as they become available so that the Responsible Party can be aware of a deteriorating condition that may not require immediate remediation but that could give the Responsible Party an opportunity to perform an optional, more economical, preventive action. If an "Emergency Situation" exists, Responsible Party notification shall be provided verbally by the Department with written follow-up. In either case, the Responsible Party shall perform remedial actions in accordance with 475-3.4. If the Responsible Party fails to, or provides notification that it is unable to, begin work within the time designated in 475-3.4 or if the Responsible Party notifies the Department that it is unable to perform an acceptable remedial action, then the Department reserves the right to perform the remedial action at the Responsible Party's expense.

475-5 Disputes Resolution.

A Statewide Disputes Review Board dedicated to the resolution of value added disagreements will be utilized to resolve any and all disputes that may develop as a result of the administration and enforcement of this specification. The Responsible Party and the Department acknowledge that use of the Statewide Disputes Review Board is required and the determinations

of the Board for disputes arising out of this VABC specification will be binding on both the Responsible Party and the Department, with no right of appeal by either party.

Any and all Board meetings after final acceptance of the Contract in accordance with 5-11, shall be requested and paid for by the Responsible Party. The Department will reimburse the Responsible Party for all fees associated with meetings.

475-6 Value Added Work.

During the value added performance period, the Responsible Party shall perform all necessary remedial work described in the Contract. Should an impasse develop in any regard as to the need for remedial work or the extent required, the Statewide Disputes Review Board will render a final decision.

The value added obligation for VABC will not apply to deficiencies if any of the following factors are found to be beyond the control of the Responsible Party: determination that the deficiency was due to the failure of other features not a part of the Contract; determination that the deficiency was the responsibility of a third party performing work not included in the contract or was the responsibility of an individual(s) that is not under the control of the Responsible Party or Contractor; or determination that the deficiency was caused by an act or event after final acceptance of the project, such as storm damage or vehicle impact, that is not under the control of the Responsible Party or Contractor.

475-7 Failure to Perform.

Should the Responsible Party fail to satisfactorily perform any remedial action, or fail to compensate the Department for any remedial action performed by the Department, as determined by the Statewide Disputes Review Board to be the Responsible Party's responsibility, the Department shall suspend, revoke or deny the Responsible Party's certificate of qualification under the terms of Section 337.16(d)(2), Florida Statutes, until the remedial work has been satisfactorily performed or full and complete payment for the remedial work is made to the Department. In no case shall the period of suspension, revocation, or denial of the Contractor's certificate of qualification be less than six (6) months. Should the Responsible Party choose to challenge the Department's notification of intent for suspension, revocation or denial of qualification and the Department's action is upheld, the Responsible Party shall have its qualification suspended for a minimum of six (6) months or until the remedial action is satisfactorily performed, whichever is longer.

The remedial work is not an obligation of the Contractor's bond required by Section 337.18, Florida Statutes.

475-8 Traffic Control.

During remedial action operations, perform all signing and traffic control in accordance with the current edition of the Department's Design Standards, Traffic Control through Work Zones. Provide Maintenance of Traffic (MOT) during remedial work at no additional cost to the Department. For non-emergency remedial work, the Engineer must approve all lane closures and traffic control plans in advance and notification of lane closures shall be made to the Engineer 5 days in advance. For emergency remedial work and if the Responsible Party requests it, the Department will provide temporary MOT until the Engineer approves the Responsible Party's Traffic Control Plan. If MOT is requested, the Responsible Party shall reimburse the Department for all temporary MOT costs. In addition, if the urgency of the remedial work is such that the Department must provide MOT immediately and without delay prior to contacting the

Responsible Party then the responsible Party shall reimburse the Department for all temporary MOT costs. Regardless of the Department's provision of MOT, the Responsible Party shall make every effort to submit a Traffic Control Plan in a timely manner to the Engineer and upon approval, shall deploy the permanent MOT expeditiously.

475-9 Basis of Payment.

All costs associated with remediation of VABC including, but limited to, labor, equipment and materials required for satisfactory completion of the remediation work; traffic control through the work zone; and access to the remediation site shall be paid for solely by the Responsible Party unless the Statewide Disputes Review Board determines otherwise.

LANDSCAPING.

(REV 10-30-19) (FA 1-7-20) (1-22)

The following new Section is added after Section 571:

SECTION 580 LANDSCAPING

580-1 Description.

Install landscaping as indicated in the Contract Documents.

580-2 Materials.

580-2.1 Plants:

580-2.1.1 Sizes: Small plants includes all ground covers, shrubs less than 7 gallon, trees less than 7 gallon, clustering type palms less than 6 foot overall height, cycads less than 7 gallon, and incidental landscaping.

Large plants include shrubs 7 gallon or greater, trees 7 gallon or greater, all single trunk palms, and clustering type palms 6 foot overall height and greater.

580-2.1.2 Grade Standards and Conformity with Type and Species: Provide plant materials purchased from Florida commercial nursery stock that comply with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants."

Florida commercial nursery stock is defined as plants propagated or grown at a Florida commercial nursery or imported to a Florida commercial nursery, made available for sale to the public, and included as inventory for fee. Nursery stock purchased from outside Florida and shipped directly to the project site is not Florida commercial nursery stock. Prior to installation, provide nursery invoices or delivery tickets that include written certification that all nursery stock meets the requirements of this Section.

Unless otherwise specified, the minimum grade for plant material is Florida No. 1. Plant materials must be the specified size and grade at the time of delivery to the site.

Use only plants that are true to type and species, free of fungal infection and disease, and ensure that the plants not specifically covered by Florida Department of Agriculture's "Grades and Standards for Nursery Plants" conform in type and species with the standards and designations in general acceptance by Florida nurseries. Submit a list of nurseries where plants are tagged, including contact information and location. The Engineer may visit the nursery sites to inspect representative samples and lock tag the example plant material.

A minimum of two plants of each species on each shipment must be shipped with tags stating the botanical nomenclature and common name of the plant. Should discrepancies between botanical nomenclature and common name arise, the botanical name will take precedence.

580-2.2 Inspection and Transporting: Move nursery stock in accordance with all Federal, State, and Local Rules and Regulations. For each shipment of nursery stock, provide the nursery's General Nursery Stock Inspection Certificate with as required in Chapter 5B-2, F.A.C.

580-2.3 Water: Meet the requirements of Section 983.

580-2.4 Mulch: Provide and install mulch in accordance with the Contract Documents.

580-2.5 Soil Enhancement:

Enhance soil in accordance with the Contract Documents.

580-3 Worksite Landscape Supervisor.

Provide a Worksite Landscape Supervisor to directly oversee all landscape installation. The Worksite Landscape Supervisor must be a Certified Landscape Technician or Certified Landscape Contractor in accordance with the Florida Nursery Growers and Landscape Association (FNGLA) or a State of Florida Registered Landscape Architect. Provide verification at the preconstruction meeting.

580-4 Installation.

580-4.1 Installation Plan: At the preconstruction meeting, provide an installation plan for review and comment. Describe the methods, activities, materials, and schedule to achieve installation as described in this Section. Include a schedule for monthly inspections and reports described in 580-4.9. Include a Schedule of Values for each item on the Tabulation of Quantities/Plant List. Begin installation after Installation Plan is accepted by Engineer.

580-4.2 Delivery: All materials must be available for inspection before installation.

580-4.3 Layout: The locations of plants as shown in the Contract Documents are approximate. At no cost to the Department, adjust final locations when directed by the Engineer to accommodate unforeseen field conditions or to comply with safety setbacks and requirements. Mark proposed mowing limits, planting beds and individual locations of trees and palms as shown in the Contract Documents for the Engineer's review, prior to excavation or planting.

Make no changes to the layout, or any variations of materials from the Contract Documents without the Engineer's approval.

580-4.4 Soil Drainage: Planting holes and beds must drain sufficiently. Notify the Engineer of drainage or percolation problems before plant installation.

580-4.5 Installation: Meet the requirements of the Contract Documents.

580-4.6 Maintenance: Maintain plant material to the equivalent visible structural, quality and health characteristics per the Contract Documents.

580-4.7 Site Repair and Restoration: Repair and restore existing areas disturbed by installation or maintenance activities. Where new turf is required to restore and repair disturbed areas, meet the requirements of Section 570.

580-4.8 Disposal of Surplus Materials and Debris: Remove from the jobsite any surplus material unless otherwise directed by the Engineer. Surplus is defined as material not needed after installation of landscaping per Contract Documents. Upon commencement of landscaping installation, remove daily all debris from the landscape locations described in the Contract Documents.

580-4.9 Reporting: Provide a written monthly report to the Engineer detailing the condition of the installed landscape, to include at a minimum, the project information, installation date, inspection dates, general condition of the plantings, and the watering and fertilization schedule.

580-5 Method of Measurement.

The quantities to be paid for will be the items shown in the Contract Documents, completed and accepted.

580-6 Basis of Payment.

Price and payment will be full compensation for all work and materials specified in this Section.

SECTION 688
ROAD WEATHER INFORMATION SYSTEM

688-1 Description.

Furnish and install a road weather information system (RWIS) in accordance with the Contract Documents.

688-2 Materials.

Ensure that all materials furnished, assembled, fabricated, or installed are new products and approved by the Engineer. Provide a RWIS consisting of environmental sensor stations (ESS). Provide ESS including environmental sensors and remote processing units (RPU). Ensure that the RPU can collect, store, and process sensor data to describe current weather conditions.

Provide any ancillary equipment or incidental items required, including mounting hardware, power supplies, grounding, surge protection devices, and communication equipment, at each ESS location to make a complete and fully operational RWIS. Ensure that the system provides real-time, accurate, reliable data on all system parameters to the degree of precision defined in this specification.

688-2.1 Sensors: Provide a RWIS that can collect and store data from multiple ESS using various environmental sensors. Ensure the ESS includes sensors as shown in the plans. Sensors can include, but are not limited to, those necessary to collect, store, and transmit the following data:

1. Temperature
2. Relative humidity
3. Barometric pressure
4. Precipitation data that includes type and intensity
5. Visibility as affected by fog, smoke, or a combination thereof
6. Wind data, including direction and average speed

Ensure that all RWIS sensors and other field equipment are made of UV, heat, and corrosion resistant materials.

Provide ultrasonic anemometers and other environmental sensors that do not rely on moving parts, unless otherwise shown in the plans.

Environmental sensors must provide the following data to the listed degree of precision:

Atmospheric Data		
Temperature	$\pm 1^\circ$ F between -40° F and 176° F; resolution of 0.1 degree	
Relative Humidity at 70° F	$\pm 5\%$ between 10% and 100%	
Barometric Pressure	± 0.02 inch of mercury (inHg) between 27.2 and 31.9 inHg; resolution of 0.005 inHg	
Precipitation	Type:	Light rain, rain and ice
	Intensity:	$\pm 20\%$ between 0.02 to 7.5 inches per hour
Wind	Direction:	± 3 degrees between 0 and 360 degrees
	Speed:	$\pm 3\%$ between 0 and 120 mph
Visibility	$\pm 10\%$ from 0.005 to 1 mile	

688-2.2 Remote Processing Unit:

The RPU must be able to store a minimum of 1000 data records. Each data record will include sensor readings of a user-defined time interval of 5 to 60 minutes.

The RPU must be able to issue an alarm if its power supply is low or if there has been a complete power loss and send a message when the unit returns to normal operation. The RPU must be able to issue an alarm using user configurable thresholds for various sensor parameters, including high wind speed alarms.

688-2.3 Communications: Use an RPU capable of transmitting all collected data to the transportation management center (TMC) over an Ethernet connection using the National Transportation Communications for ITS Protocol (NTCIP) or a data collection package (DCP) and satellite transmitter that comply with all applicable standards for NOAA and CS2 Certification for Geostationary Operational Environmental Satellite (GOES) transmission.

688-2.4 Cabinet: Cabinets provided with the RWIS must be listed on the APL or meet the applicable criteria of Section 676.

688-2.5 RWIS Software: Provide any software necessary for the RWIS system configuration and operation.

688-2.6 Mechanical Specifications: Ensure equipment is permanently marked with manufacturer name or trademark, part number, and serial number. Ensure that every conductive contact surface or pin is gold-plated or made of a noncorrosive, nonrusting, conductive metal. Do not use self-tapping screws on the exterior of the assembly. All parts shall be made of corrosion-resistant materials, such as plastic, stainless steel, anodized aluminum, brass, or gold-plated metal.

Ensure all assembly hardware, including nuts, bolts, external screws and locking washers less than 5/8 inch in diameter, are Type 304 or 316 stainless steel and meet the requirements of ASTM F593 and ASTM F594. All assembly hardware greater than or equal to 5/8 inch in diameter must be galvanized and meet the requirements of ASTM A325.

688-2.7 Electrical Specifications: RWIS equipment must be capable of operation using 120 volts alternating current (V_{AC}) and 12 V_{DC} . Supply an appropriate voltage converter for devices that require operating voltages of less than 120 V_{AC} . In cases where the ESS are mounted on towers that are part of the Department's statewide microwave system, ensure that the devices can utilize the 48 V_{DC} power supply available at the site.

Ensure that solar- and battery-powered units operate continuously for 14 days without requiring battery recharging.

688-2.8 Environmental Specifications: Ensure that roadside electronics operate properly during and after being subjected to the environmental testing procedures described in NEMA TS 2, Sections 2.2.7, 2.2.8, and 2.2.9.

688-2.9 Support Structure: When the ESS requires a support structure, provide a tower or pole as shown in the plans. Use a single support structure for the ESS and any associated equipment, such as solar panels, cabinets, and atmospheric sensors.

688-3 Testing.

Develop and submit a testing procedure that includes an environmental sensor-to-RPU test, a remote-to-central communication test, and a systems operational test. Notify the Engineer a minimum of 10 calendar days before the start of any tests. Provide and submit evidence of the following for each RWIS field site:

1. Laboratory tests from manufacturer verifying proper initial sensor calibration.

2. Instrument alignment with true north.
3. Sensor calibration protocols and adjustment procedures.
4. Verification that the site is reporting proper field data.

Deliver a summary test report and a copy of all test results to the Engineer for approval. Include documentation of any discrepancies found during testing, along with descriptions of installation locations, successful test completion dates, and equipment serial numbers.

688-4 Installation.

Mount all atmospheric sensors per the manufacturer's recommendations. Install all wiring so that it is either internal to a pole or in conduit.

Place a concrete service slab as shown in Index 17841 in front of any ground mounted cabinets, unless otherwise shown in the plans. Construct the pad using concrete meeting the requirements of Section 347.

688-5 Warranty.

Ensure that the manufacturer will furnish replacements for any part or equipment found to be defective during the warranty period at no cost to the Department or the maintaining agency within 10 calendar days of notification. Ensure that the RWIS equipment and components have a manufacturer's warranty covering defects for a minimum of one year from the date of final acceptance by the Engineer in accordance with 5-11 and Section 608.

688-6 Method of Measurement.

The Contract unit price for each RWIS field location will include furnishing, placement, and testing of all materials and equipment, and for all tools, labor, equipment, hardware, operational software package(s) and firmware(s), supplies, support, personnel training, shop drawings, warranty documentation, and incidentals necessary to complete the work.

688-7 Basis of Payment.

Price and payment will be full compensation for furnishing all materials and completing all work as specified in this section or shown in the Plans.

Payment will be made under:

Item No. 920-688- Road Weather Information System - each.

DUPLEX COATING FOR STRUCTURAL STEEL.
(REV 5-21-20)

The following new Section is inserted after Section 563:

SECTION 564
DUPLEX COATING FOR STRUCTURAL STEEL

564-1 Description.

Coat structural steel in accordance with the requirements of this Section using a duplex coating system. The duplex system must consist of a thermal spray coating (TSC) aluminum base coat, and an epoxy seal coat with an aliphatic polyurethane top coat. Use a clear top coat if included as part of the approved top coat paint system.

TSC application must conform to the requirements of AASHTO/NSBA S 8.2-2017/SSPC-PA 18, unless otherwise indicated in this Section.

564-2 Materials.

564-2.1 Abrasive Blast Media: Use abrasive blast media meeting the requirements of SSPC-AB 1 “Mineral and Slag”, or SSPC-AB 2 “Recycled Ferrous Metallic”, or SSPC-AB 3 “Newly Manufactured or Re-Manufactured Steel Abrasives”. Each lot of abrasive media must be free of oil and contain less than or equal to 7 micrograms per square centimeter ($\mu\text{g}/\text{cm}^2$) concentration of chlorides.

564-2.2 Thermal Spray Feedstock Wire: The feedstock wire material must be 99.9% aluminum in accordance with AWS C2.25/C2.25M.

564-2.3 Seal Coat and Top Coat: Use epoxy intermediate (seal) coat and aliphatic polyurethane finish (top) coat systems meeting the requirements of Section 975 and listed on the Department’s Innovative Products List (IPL) for this Section. The seal coat and top coat must be provided from the same manufacturer. Apply the seal and top coat systems to the TSC per the manufacturer’s product data sheet or as modified by the manufacturer’s technical representative for application over TSC.

564-3 Qualifications.

564-3.1 General: Submit the appropriate documentation to the Engineer for approval, at least 21 calendar days prior to beginning TSC or any coating work. Do not begin TSC or coating work until the following have been approved by the Engineer:

1. Corporate Quality Control (QC) Plan
2. Industry Endorsement
3. Experience and Credentials of all QC Personnel
4. Experience of the Operators and Applicators
5. Site-Specific Coatings Plan
6. Job Reference Standard(s) (JRS).

564-3.2 Shop Application: Obtain shop application of TSC from a company that is currently on the Department’s Production Facility Listing. Fabricators seeking inclusion on the list must meet the requirements of this Section and Section 105. Submit a current QC Plan approved by the American Institute of Steel Construction (AISC) under the Sophisticated Paint Endorsement Program, or a Society of Protective Coatings

(SSPC) QP 6 or QP 3 certification or NACE International Institute Contractor Accreditation Program (NIICAP) AS-1S certification with the Corporate QC Plan that was reviewed under the current certification, and a site-specific coatings plan that meets 564-4 to the Engineer.

564-3.3 Field Application: Submit a current SSPC QP 6 or QP 1 certification, or NIICAP AS-1F certification, with the Corporate QC Plan that was reviewed under the current certification, and a site-specific coatings plan that meets 564-4 to the Engineer. For the removal of hazardous coatings, submit a current SSPC QP 2 certification with the Corporate QC Plan that was reviewed by SSPC under the current certification and a site-specific coating plan.

564-3.4 Quality Control Supervisors: Personnel designated as QC Supervisors must possess the following:

1. 5 years of experience in corrosion control using coatings on structural steel,
2. 3 years of experience in the inspection of TSC application on structural steel, and
3. Valid SSPC Bridge Coatings Inspector II, or SSPC Protective Coatings Inspector Level III, or NACE International Coating Inspector Level III Certification.

564-3.5 Quality Control Inspectors: Personnel performing QC inspections must report directly to a QC Supervisor and are required to possess the following qualifications:

1. 1 year of experience in corrosion control using coatings on structural steel,
2. 1 year of experience in inspection of TSC application on structural steel, and
3. Valid SSPC Bridge Coatings Inspector I, or SSPC Protective Coatings Inspector Level I, or NACE International Coating Inspector Level I Certification.

564-3.6 Thermal Spray Coating Applicators: All TSC operators must be able to produce a plan and work history for training, testing, and demonstration of capability related to TSC application. TSC operators must identify their knowledge and experience in applying TSC on steel substrates, using various materials and troubleshooting complex configurations. Prior to the completion of a Job Reference Standard (JRS), each TSC operator must meet the following requirements:

1. Spray specimens that meet project specifications for wire type and coating thickness that pass the destructive bend and adhesion tests in accordance with AASHTO/NSBA S 82-2017/SSPC-PA 10,
2. Demonstrate knowledge of how to verify the correct feedstock, load the TSC feedstock wire, and adjust the TSC equipment,
3. Demonstrate acceptable skills to test compressed air cleanliness, environmental conditions, surface profile, and film thickness, and
4. Demonstrate knowledge of the blast cleaning process, applicable blast-cleaning standards, and surface profile requirements.

564-4 Coatings Plan.

564-4.1 Procedures: Procedures for the site-specific coatings plan must include inspection items, inspection methods, acceptance criteria and the frequency of inspections. Submit written procedures for approval including the following:

564-4.1.1 Storage of Materials: Include the methods of storage for the application equipment, blast media, TSC feedstock wire, coatings and any solvents.

564-4.1.2 Job Reference Standard (JRS): Include the configuration, surface preparation, documentation, type of base steel, and conformance testing that will be done to qualify the JRS. Based on the complexity of the project, multiple JRS's may be needed to address geometry challenges on a complex configuration.

564-4.1.3 Controlling Ambient Conditions: Include the methods for assessing and controlling humidity, air temperature, wind, and dew point.

564-4.1.4 Air Handling and Dust Removal: Include the methods for assessing air cleanliness, contamination in the application of TSC, the surface of applied TSC, and coating over TSC.

564-4.1.5 Surface Preparation of the Steel: Include the methods for assessing surface temperature, surface cleanliness, surface profile, and chloride contamination. Include methods of illumination, taping off faying surfaces, and grinding of base metal edges.

564-4.1.6 TSC Application: Include the criteria for general application, application on faying surfaces, application in confined spaces, method(s) of illumination and the use of companion coupons.

564-4.1.7 Repairing TSC: Include the evaluation process, surface preparation, and feathering of TSC.

564-4.1.8 Seal Coating TSC: Include the time for application, surface preparation, manufacturer's recommended dry film thickness and method(s) for controlling ambient conditions.

564-4.1.9 Top Coating TSC: Include the time for application, surface preparation, manufacturer's recommendation dry film thickness, and method(s) for controlling ambient conditions.

564-4.1.10 Repairing Top Coated TSC: Include the plan for evaluation, surface preparation and feathering of the top coat.

564-5 Quality Control (QC).

564-5.1 Inspection: Each shift must have at least one QC Supervisor present on the jobsite. The QC Supervisor must maintain daily inspection reports at the job site for review by the Engineer. Submit all daily inspection reports upon completion of the project to the Engineer, or more frequently as requested by the Engineer. Ensure that all inspection equipment is maintained, calibrated, and in good working condition in accordance with the manufacturer's instructions.

564-5.2 Commercial Inspection: The Quality Assurance Inspector(s) (QAI) must have access to all TSC and coating operations, materials, documentation and repairs. All TSC and coating operators will be subject to producing project related JRS or companion coupons if the quality of the work differs from the JRS or has resulted in multiple nonconformances, as determined by the Engineer.

564-5.3 Material Documentation: Submit technical and safety data sheets and certificates of conformance to contract requirements for the following:

1. TSC feedstock wire (including composition, size, certification and storage).
2. Blast media (including SSCP AB, oil testing and chloride testing).

3. Any liquid-applied coating, including top coat (product data sheets, lot numbers, and APL or IPL numbers).
4. Manufacturer's recommendation for compatibility of top coat with seal coat and TSC.
5. Calibration records for all inspection equipment.

564-5.4 Mechanical Removal of Surface Defects: Break all corners resulting from sawing, burning, or shearing. In areas where burning has been used, chamfer or radius flame hardened surfaces between 1/16 inch and 1/8 inch. Remove all weld slag and weld spatter.

564-5.5 Surface Preparation: Unless otherwise specified, prepare steel by abrasive blast cleaning to "white" metal condition as defined in SSPC-SP 5/NACE No.1. Use SSPC-VIS 1 as an aid in establishing cleanliness. Unless otherwise listed in the contract documents, ensure the surface profile meets the requirements of AASHTO/NSBA S 8.2-2017/SSPC-PA 10. Take representative surface profile measurements every 200 square feet (ft²) in accordance with ASTM D 4417, Method B or C. If rust blooming, rusting or contamination occurs after the completion of the surface preparation, restore the surfaces back to the initial requirements. Perform surface preparation work only when the temperature of the substrate is at least 5°F above the dew point temperature. Perform surface preparation only on areas to be thermal spray coated within the same shift. Blast surface preservation products are prohibited.

564-5.6 Surface Contamination: Ensure all surfaces to be coated are clean, dry, and free from oil, grease, dirt, dust, corrosion, weld spatter, mill scale and any other surface contaminants. Prepare all surfaces that will become inaccessible after fabrication, erection, or installation while accessible. Sequence the surface preparations and coating operations so that freshly applied TSC will not be contaminated by dust or foreign matter. Protect all equipment and adjacent surfaces not to be coated from surface preparation operations. Protect working mechanisms against intrusion of abrasive. If any rusting or contamination occurs after the completion of the surface preparation, prepare the surfaces again to the initial requirements. Perform surface preparation work only when the temperature of the steel surface is at least 5°F above the dew point temperature, and relative humidity is less than 90% and falling.

Determine the chloride, sulfate and nitrate concentrations on all steel surfaces using soluble salts test kits meeting the requirements of 564-6.1. Measure the concentration levels in µg/cm² and conductivity in microsiemens per square centimeter (µS/cm²), in accordance with Table 564-1. When any concentration or conductivity measurement exceeds the levels specified in Table 564-1, rewash the entire surface area and retest all potentially contaminated steel to the satisfaction of the Engineer. If additional washing does not reduce the concentration to the acceptable level, a surface treatment or water additive may be used. Use a surface treatment or water additive that is approved by the coating system supplier and the Engineer.

Table 564-1		
Allowable Surface Contamination		
Coating Stage	Frequency of Test	Acceptance Criteria
Post-Blast, Pre-Coating	1 test (per 1000 ft ²)	≤ 17 µg/cm ² Sulfates ≤ 10 µg/cm ² Nitrates

Table 564-1		
Allowable Surface Contamination		
Coating Stage	Frequency of Test	Acceptance Criteria
		$\leq 70 \mu\text{S}/\text{cm}^2$ Conductivity $\leq 7 \mu\text{g}/\text{cm}^2$ Chlorides
Between Coats	3 tests (first 1,000 ft ²) 1 test (each additional 1,000 ft ²)	$\leq 7 \mu\text{g}/\text{cm}^2$ Chlorides

564-5.7 Weather and Temperature Limitations: Do not apply TSC, the seal coat or top coat when the measured wind speed in the immediate coating area is above 15 miles per hour. Do not apply coatings when contamination from rainfall is imminent or when the ambient air temperature, relative humidity, dew point temperature, or temperature of the steel is outside limits listed in AASHTO/NSBA S 8.2-2017/SSPC-PA 10 or the product data sheet.

564-5.8 Protection of Adjacent Surfaces: Protect all surfaces and working mechanisms not intended to be coated during the application of TSC or coating operations. Clean adjacent surfaces that have been contaminated with TSC or coatings until it has successfully passed a wipe test, as described in SSPC-SP 1.

564-5.9 Adhesion Testing: The minimum adhesion values must be maintained throughout the project. The minimum adhesion value for aluminum TSC must be \geq 1100 psi. If adhesion values fall below the specified values, the surface preparation, materials and the operator's operation should be examined. Adhesion values must be performed using an adhesion tester meeting ASTM D 4541 Method D and Method E as modified below:

1. Method D: Type IV; average of 5 pulls.
2. Method E: Type V; average of 3 pulls.

Do not perform adhesion testing to failure once the target adhesion is measured. Use heat to remove the loading fixture without damage to the thermal spray coated steel.

564-6 Equipment.

564-6.1 Soluble Salt Test Kit: Measure soluble salts using methods in compliance with SSPC-Guide 15, Table 1. Use a fully automated conductivity meter, fiber strip, or multi-cell patch, cell or ring. Ensure the test sleeve or cell creates a sealed, encapsulated environment during ion extraction and is suitable for testing the various surfaces.

564-6.2 Abrasive Blasting System: Use a compressed air system capable of delivering clean, dry, continuous nozzle pressure to achieve the required surface cleanliness and profile or spray pattern. The system must comply with the instructions and recommendations of the manufacturer of the abrasive blasting system or coating application system.

564-6.3 Adhesion Testing: Adhesion testing must be performed with an adhesion tester meeting ASTM D4541 Method D, using 12.5 millimeter (mm) loading fixtures; or Method E, using 20.0 mm loading fixtures.

564-6.4 Hand & Power Tools: Use tools that are appropriate to prepare the surface edges and remove any physical non-conformances that would impede a proper coating application.

564-6.5 Lifting and Handling Equipment: Use soft, clean, and dry material between coated products and support blocks or metal apparatus such as hooks or chains when conducting shop application. Ensure that areas supporting access platforms (and/or other construction equipment) are also properly thermal sprayed and coated when conducting application in the field.

564-6.6 Thermal Spray Equipment: Use thermal spray equipment of the electric arc type with protection to avoid contamination of the feedstock.

564-7 Application.

564-7.1 Application of Thermal Spray Coating: Apply 8.0 to 12.0 thousandths of an inch (mils) of TSC using electric arc equipment in accordance with the requirements of the material supplier and AASHTO/NSBA S 8.2-2017/SSPC-PA 10, and using the approved procedure submitted to the Department.

Apply the TSC within six hours after the final abrasive blast cleaning is performed. If the steel is blast cleaned and remains without TSC for longer than six hours, or if the cleaned steel exhibits evidence of rust-back, blast clean the steel again prior to applying the TSC. Remove abrasive residue and dust from the surface. Blast surface preservation products are prohibited.

After application of the TSC, protect the contact surfaces of members to be joined by high-strength bolts in friction type joints from all other coatings and foreign material.

564-7.2 Application of Seal Coat and Top Coat: Apply the seal coat and top coat within the time specified by the coating manufacturer's product data sheet for drying and recoating. Test the coating for proper cure before handling and shipping. Test for cure in accordance with the manufacturer's recommended method. Do not apply seal coat or top coat over faying surfaces.

Use spray equipment recommended by the manufacturer and as authorized by the Engineer that gives satisfactory results. Apply each coat free of runs, sags, blisters, bubbles, and mud cracking; variations in color, gloss, or texture; holidays; excessive film buildup; foreign contaminants; orange peeling; and overspray.

If brushes are used for specific areas, manipulate the paint under the brush to produce a uniform, even coat. Work the paint into corners and crevices. Move the brush in a series of small circles to thoroughly fill irregularities in the surface, then brush out and smooth by a series of parallel strokes until the paint film has an even thickness. Do not use brushes if prohibited by the manufacturer.

Apply stripe coats and apply caulk as described in Specifications Section 560.

Remove lubricant and other surface contaminants from galvanized fasteners. Apply the same seal coat used on main components to galvanized fasteners (i.e., nuts, bolts, washers) and areas such as connection plates that had not previously received the seal coat after cleaning.

564-7.3 Interior of Box or Tub Girders: Apply a coat of white amine epoxy directly to the prepared surfaces of all interior components (except faying surfaces) of steel box or tub girders. Mask off faying surfaces and coat with an inorganic zinc primer

on the Approved Products List (APL). The epoxy coating must meet the requirements of Section 975 for Interior Box Girder Coating. Caulk and paint all bolted assemblies and joints in accordance with 560-9.7.

564-7.4 Thickness of Coatings:

564-7.4.1 Thickness of Thermal Spray Coating: TSC thickness readings must be taken by an electronic dry film thickness gauge, in accordance with SSPC-PA 2 with the thickness restrictions in Table 564-2. Take representative readings every 550 ft². Remove TSC thicknesses greater than 14.4 mils on faying surfaces.

Table 564-2				
Thermal Spray Coating Thickness Restrictions				
Surface	Spot Measurement (mils)		Area Measurement (mils)	
	Minimum	Maximum	Minimum	Maximum
General	6.4	18	8.0	12.0
Faying	6.4	14.4	8.0	12.0

564-7.4.2 Thickness of Seal Coat: The seal coat must visibly cover all the peaks of the TSC profile and penetrate to the valley areas of the TSC. Multiple coats of the sealer may be necessary. The initial coat of sealer may be thinned to penetrate the valleys of the TSC profile.

564-7.4.3 Thickness of Top Coat: Meet the requirements of the manufacturer's product data sheet. Coating thickness readings must be taken by an electronic dry film thickness reader, in accordance with SSPC-PA 2, Level 3.

564-7.5 Drying and Curing: Cure the coating for the time and temperature required by the manufacturer's product data sheet. Test the coating for proper cure, per the manufacturer's product data sheet before handling and shipping. Do not apply seal, intermediate or top coats on faying surfaces.

564-7.6 Surfaces Not to be Duplex Coated: Do not apply aluminum TSC, seal coat, or top coat to these surfaces. The requirements for these surfaces will be incidental to the Duplex Coating System.

564-7.6.1 Surfaces to be in contact with Concrete: Prepare surfaces that will be encased in, or coated with, concrete and apply a mist coat of an inorganic zinc primer listed on the APL. Prevent rust bleeding from the top flange of girders from staining adjacent coated surfaces.

564-7.6.2 Faying Surfaces: For members to be joined by high-strength bolts in slip-critical friction type joints, prepare the contact surfaces and apply an inorganic zinc primer listed on the APL.

564-7.6.3 Machine Finished Surfaces: Apply a coating of rust preventative compound to all machine finished or similar surfaces that are not to be coated, or will not be coated immediately.

564-7.6.4 Surfaces to be Welded: For areas where shear studs will be welded, prepare the surfaces and apply a mist coat, that is less than 1 mil dry film thickness, of an inorganic zinc primer listed on the APL.

564-8 Coating Finish.

564-8.1 Thermal Spray Coating Finish: The finished TSC surface must be uniform, firmly adherent, free from thin spots, misses, or lumps. Tightly adhering material may remain, if it can adhere to the surface after being struck with a dull putty knife or stainless-steel brush. Sanding of the surface is prohibited.

564-8.2 Seal Coat and Top Coat Finish: The finished product must be free of runs, sags, blisters, bubbles, rust bloom, variations in color, gloss, or texture, holidays, excessive film buildup, foreign contaminants, orange peeling. All finished surfaces must have a smooth finish free from cracks, pin-holes, shrinkage, excessive material, and other flaws.

564-9 Touchup and Repair.

564-9.1 Touch Up and Repair of Thermal Spray Coating: Standard repairs should follow the approved repair procedures identified in the site-specific coating plan. Repair areas should not exceed 1.0 ft² in any one location. Repairs exceeding 1.0 ft² must be removed and replaced. Repairs to the coating surface that are less than complete removal will require Engineer approval for both removal and application. Engineer approval is required prior to beginning repair work.

564-9.2 Touch Up and Repair of Faying Surfaces: Standard repairs should follow the approved repair procedures identified in the site-specific coating plan. Repair areas that exceed 6.0 square inches (in²) in any one location on a faying surface should be removed by abrasive blasting and the TSC should be re-applied per this Section. Repairs to the faying surface that are less than complete removal will require Engineer approval for both removal and application. Engineer approval is required prior to beginning repair work.

564-9.3 Touch Up and Repair of Seal Coat and Top Coat: Standard repairs should follow the approved repair procedures identified in the site-specific coating plan. Repair areas should not exceed 1.0 ft² in any one location. Repairs exceeding 1.0 ft² should be investigated per SSPC-PA 2 and the extent of the failure should be removed and replaced. Repairs to the coating surface that are less than complete removal will require Engineer approval for both removal and application. Engineer approval is required prior to beginning repair work.

564-10 Protection of the Environment, Public, and Workers.

564-10.1 New Structural Steel: Meet the requirements of 560-4.

564-10.2 Existing Structural Steel: Meet the requirements of 561-10 and 561-11.

Prepare a traffic control plan for each phase of construction activities signed and sealed by the Contractor's Engineer of Record in accordance with the FDOT Design Manual. Do not begin work until the traffic control plan is approved by the Engineer. Maintain traffic in accordance with Section 102.

For work over navigable waters, submit a work plan to the United States Coast Guard including any scheduled restrictions to navigation channels or marine traffic. Obtain Coast Guard approval at least 30 days in advance of any restrictions.

564-11 Method of Measurement.

For new I-Girder and Box or Tub Girder Superstructures and Bent Caps, the quantity for duplex coating to be paid for will be the lump sum quantity, completed and accepted.

For all existing structural steel:

When a lump sum pay item is provided, the quantity to be paid for duplex coating existing structural steel will be the lump sum quantity for the areas shown in the Plans, completed and accepted.

When a square foot item is provided, the quantity to be paid for duplex coating existing structural steel will be the plan quantity in square feet of surface area as shown in the Plans, completed and accepted.

564-12 Basis of Payment.

For new I-Girder and Box or Tub Girder Superstructures and Bent Caps, price and payment will be full compensation for all work specified in this Section, including furnishing and applying all materials to complete the duplex coating for the structural steel.

No separate payment will be made for duplex coating all other new structural steel.

Payment for duplex coating new I-Girder and Box or Tub Girder Superstructures and Bent Caps shall be made under:

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| Item No. 920-564- | Duplex Coating for Structural Steel – lump sum. |
| Payment for duplex coating all existing structural steel will be made under: | |
| Item No. 920-564- | Duplex Coating Existing Structural Steel - lump sum. |
| Item No. 920-564- | Duplex Coating Existing Structural Steel - per square foot. |