

TOWN OF GREENVILLE

154 SW Old Mission Ave, Greenville, FL 32331

SOUTHSIDE FLOODING MITIGATION



BID DOCUMENTS

OCTOBER 2025

Prepared by:

Kimley»»Horn

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BIDDING REQUIREMENTS

ADVERTISEMENT FOR BIDS
TOWN OF GREENVILLE
GREENVILLE, FLORIDA
SOUTHSIDE FLOODING MITIGATION

General Notice

Town of Greenville (Owner) is requesting Bids for the construction of the following Project:

SOUTHSIDE FLOODING MITIGATION
IFB-142840012

Bids for the construction of the Project will be received at the **Greenville Town Hall** located at **154 SW Old Mission Ave, Greenville, FL 32331**, until **Wednesday, October 29, 2025, at 3:00 pm** local time. At that time the Bids received will be publicly opened and read.

The Project includes the following Work:

The project is located approximately 0.5 miles south of downtown Greenville, Florida in Madison County, Florida. The scope of this work includes, but is not limited to:

- Earthwork
- Full-depth pavement removal and reconstruction
- Stormwater pipe and structure installation
- Road milling and resurfacing
- Sodding

Bids are requested for the following Contract: **Southside Flooding Mitigation - IFB-142840012**

Obtaining the Bidding Documents

Information and Bidding Documents for the Project can be obtained by requesting digital copies by e-mail sent to katie.hornnik@kimley-horn.com.

Bidders are urged to e-mail the e-mail address above to register as a plan holder, even if Bidding Documents are obtained from a plan room or source other than the designated website in either electronic or paper format. The plan holders will be updated periodically with addenda, reports, and other information relevant to submitting a Bid for the Project. All official notifications, addenda, and other Bidding Documents will be offered through e-mail to the registered plan holders. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated email.

Pre-bid Conference

A non-mandatory pre-bid conference for the Project will be held on **October 15, 2025 at 2:00pm local time** at **Greenville Town Hall at 154 SW Old Mission Ave, Greenville, FL 32331**. Virtual attendance is acceptable via Microsoft Teams at the link or call-in number below.

Microsoft Teams**[Join the meeting now](#)**

Meeting ID: 278 418 751 162 6
Passcode: Ht3Ky6bP

Dial in by phone

[+1 984-204-1608](tel:+19842041608), [338229033#](tel:+1338229033) United States, Raleigh
[Find a local number](#)
Phone conference ID: 338 229 033#

Instructions to Bidders.

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

Deadline for Contractor Questions

Any questions are to be submitted via email katie.hornnik@kimley-horn.com no later than **Monday, October 20, 2025**. Answers to questions received before the deadline will be released via addendum.

This Advertisement is issued by:

Owner: **Town of Greenville**
By: **Dr. Victoria K. Kingston**
Title: **Town Manager**
Date: **September 29, 2025**

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.05 *Electronic Documents*
- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version [insert version number] or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder must submit the following information:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.
- 3.02 Prospective Bidders must submit required information regarding their qualifications by the bid deadline. Owner will review the submitted information to determine which contractors are qualified to bid on the Work. Owner will issue an Addendum listing those contractors that Owner has determined to be qualified to construct the project. Bids will only be accepted from listed contractors. The information that each prospective Bidder must submit to seek prequalification includes the following:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Prospective Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.
- 3.03 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

- C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.
- 3.04 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.05 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Proposals will not be accepted from Bidders who do not attend the conference. It is each Bidder's responsibility to sign in at the pre-bid conference to verify its participation. Bidders must sign in using the name of the organization that will be submitting a Bid. A list of qualified Bidders that attended the pre-bid conference and are eligible to submit a Bid for this Project will be issued in an Addendum.
- 4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

- 5.01 *Site and Other Areas*
- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.
- 5.02 *Existing Site Conditions*
- A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*
 - 1. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
- 5.03 *Owner's Safety Program*
- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**6.01** *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
 - A. **Katie.hornnik@kimley-horn.com**
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **10%** percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner’s damages in the case of a damages-form bond. Such forfeiture will be Owner’s exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the Work within five days of bid opening.
- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security

of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.

12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.

12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

12.06 A Bid by an individual must show the Bidder’s name and official address.

12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.08 All names must be printed in ink below the signatures.

12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.

- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Lump Sum*

- A. Bidders must submit a Bid on a lump sum basis as set forth in the Bid Form.

13.02 *Unit Price*

- A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

13.03 *Allowances*

- A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 14—SUBMITTAL OF BID

- 14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.
- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents.

If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED."

A mailed Bid must be addressed to the location designated in the Advertisement. If a bid is hand-delivered, the bid must be enclosed in a sealed envelope plainly marked on the outside with the notation "BID ENCLOSED." Bids will be unsealed in-person at the bid opening. There shall be no evidence of tampering with the bid prior to bid opening.

- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

- 16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of

the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

C. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful

Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

- 1.01 This Bid is submitted to: **Town of Greenville, 154 SW Old Mission Ave, Greenville, FL 32331.**
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

- 2.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
 - E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
 - F. Required Bidder Qualification Statement with supporting data; and

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

- 3.01 *Bid Form*
 - A. Bidder will perform the following Work at the indicated unit prices on the Bid Form provided as Attachment A.
 - B. Bidder acknowledges that:
 - 1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
 - 2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—TIME OF COMPLETION

- 4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**5.01 *Bid Acceptance Period***

- A. A bid may not be modified, withdrawn, or canceled by the Bidder during a **sixty (60)** calendar day period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting their bid.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**6.01 *Bidder’s Representations***

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
5. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
6. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
7. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

- c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

ATTACHMENT A – BID FORM

TOWN OF GREENVILLE
FLORIDA
SOUTHSIDE FLOODING MITIGATION
BID FORM

BID SUMMARY

Total Base Bid Amount

_____ \$ _____
Total Base Bid Amount in Words *In Numbers*

Name of Bidder: _____
(Typed or Printed)

Signature of Bidder: _____
(Contractor Authorized Agent)

Title: _____

Date: _____

**TOWN OF GREENVILLE
FLORIDA
SOUTHSIDE FLOODING MITIGATION
BID FORM**

BASE BID

BID ITEM NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	TOTAL AMOUNT PER ITEM (UNIT PRICE TIMES EST. QTY.)
1	101-1	MOBILIZATION	LS	1	\$	\$
2	104-1	TEMPORARY AND PERMANENT EROSION CONTROL	LS	1	\$	\$
3	102-1	MAINTENANCE OF TRAFFIC	LS	1	\$	\$
4	110-1	STRIPPING AND STOCKPILING	SY	310	\$	\$
5	110-2	FULL DEPTH PAVEMENT REMOVAL	SY	155	\$	\$
6	110-3	REMOVE EXISTING STORMWATER PIPE	LF	26	\$	\$
7	120-1	REGULAR EXCAVATION	CY	20	\$	\$
8	120-2	BORROW EXCAVATION	CY	20	\$	\$
9	160-1	STABILIZED SUBGRADE, 12" THICK	SY	155	\$	\$
10	285-1	LIMEROCK BASE COURSE, 6" THICK	SY	155	\$	\$
11	327-1	ASPHALT PAVEMENT MILLING, NOMINAL 1.5" DEPTH	SY	4,100	\$	\$
12	334-1	SUPERPAVE ASPHALTIC CONCRETE, TYPE SP-12.5, TRAFFIC C	TON	367	\$	\$
13	425-1	TYPE C DITCH BOTTOM INLET	EA	1	\$	\$
14	430-1	REINFORCED CONCRETE PIPE, 15"	LF	37	\$	\$
15	430-2	REINFORCED CONCRETE PIPE, 18"	LF	123	\$	\$
16	430-3	REINFORCED CONCRETE PIPE, 24"	LF	138	\$	\$
17	430-4	15" CONCRETE STRAIGHT ENDWALL	EA	1	\$	\$
18	430-5	DUAL 15" CONCRETE STRAIGHT ENDWALL	EA	2	\$	\$
19	430-6	18" MITERED END SECTION	EA	2	\$	\$
20	430-7	DUAL 24" MITERED END SECTION	EA	2	\$	\$
21	530-1	RIPRAP	SY	75	\$	\$
22	570-1	SODDING	SY	452	\$	\$
23	700-1	REMOVE AND RELOCATE GROUND SIGN ASSEMBLY	EA	2	\$	\$
24	700-2	SINGLE COLUMN GROUND SIGN ASSEMBLY	EA	1	\$	\$
25	711-1	THERMOPLASTIC PAVEMENT MARKINGS (WHITE, YELLOW)	SF	1,400	\$	\$

BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: Town of Greenville Address <i>(principal place of business)</i> : 154 SW Old Mission Ave, Greenville, FL 32331	Bid Project <i>(name and location)</i> : Southside Flooding Mitigation SW Main Street, Greenville, FL Bid Due Date: October 29, 2025
Bond Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

QUALIFICATIONS STATEMENT

ARTICLE 1—GENERAL INFORMATION

1.1 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.2 Provide information on the Business's organizational structure:

Form of Business:	☐ Sole Proprietorship ☐ Partnership ☐ Corporation		
☐ Limited Liability Company ☐ Joint Venture comprised of the following companies:			
1.			
2.			
3.			
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?		☐ Yes ☐ No ☐ Pending	

ARTICLE 2—LICENSING

2.1 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.1 Provide information regarding Business's Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
☐ Disadvantaged Business Enterprise		
☐ Minority Business Enterprise		
☐ Woman-Owned Business Enterprise		
☐ Small Business Enterprise		
☐ Disabled Business Enterprise		
☐ Veteran-Owned Business Enterprise		
☐ Service-Disabled Veteran-Owned Business		
☐ HUBZone Business (Historically Underutilized) Business		
☐ Other		
☐ None		

ARTICLE 4—CONSTRUCTION EXPERIENCE

4.1 List a minimum of three and a maximum of six projects completed in the last 5 years to demonstrate the Business's experience with projects similar in type and cost of construction. Separate sheets of paper may be included as needed for additional information.

Project Name _____ Start Date _____ Finish Date _____

Project Name _____ Start Date _____ Finish Date _____

Project Name _____ Start Date _____ Finish Date _____

Project Name _____ Start Date _____ Finish Date _____

Project Name _____ Start Date _____ Finish Date _____

Project Name _____ Start Date _____ Finish Date _____

4.2 Provide Information below on key individuals whom Business intends to assign to the Project. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Separate sheets of paper may be included as needed for additional information.

Name _____ Title _____ Phone _____

Name _____ Title _____ Phone _____

Name _____ Title _____ Phone _____

Name _____ Title _____ Phone _____

Name _____ Title _____ Phone _____

Name _____ Title _____ Phone _____

ARTICLE 5—REQUIRED ATTACHMENTS

5.1 Provide the following information with the Statement of Qualifications:

1. Written evidence establishing bidder's financial responsibility.* This evidence shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar or fiscal year, certified by a public accountant.

**A bidder may submit evidence that they are prequalified with the FDOT and are on the current "bidder's list" as evidence of financial responsibility in lieu of the certified statements or reports specified above.*

2. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
3. Bidder's state or other contractor license number, if applicable.
4. Subcontractor and Supplier qualification information.

This Statement of Qualifications is offered by:

Business:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

CONTRACTING REQUIREMENTS

AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between **Town of Greenville** ("Owner") and _____

("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: **The scope of work generally includes clearing and grubbing, pavement removal and reconstruction, earthwork, installation of pipe culverts and storm structures, asphalt milling and paving, markings, and sodding.**

ARTICLE 2—THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **The project consists of the construction of new stormwater pipe culverts on SW Overstreet Avenue, Church Street, and M L King Street, installation of riprap at pipe crossing on SW Main Street, and mill and overlay on SW Overstreet Avenue and M L King Street.**

ARTICLE 3—ENGINEER

- 3.01 The Owner has retained **Kimley-Horn and Associates, Inc.** ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.
- 3.02 The part of the Project that pertains to the Work has been designed by **Kimley-Horn and Associates, Inc.**

ARTICLE 4—CONTRACT TIMES

- 4.01 *Time is of the Essence*
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02 *Not used*
- 4.03 *Contract Times: Days*
- A. The Work will be substantially complete within **120 Calendar** days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **150 Calendar** days after the date when the Contract Times commence to run.

4.04 *Milestones*

- A. Parts of the Work must be substantially completed on or before the following Milestone(s):
1. Mobilization: **30 Calendar Days**
 2. Substantial Completion of the Work: **90 Calendar Days**
 3. Final Completion of the Work: **30 Calendar Days**

4.05 *Not Used***4.06 *Not Used*****ARTICLE 5—CONTRACT PRICE**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

- A. The owner shall pay the Contractor at the lump sum price stated in the Contractor's Bid (Section C-410), inclusive of all addenda issued, if any.

ARTICLE 6—PAYMENT PROCEDURES**6.01 *Submittal and Processing of Payments***

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **5th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

- a. **90%** percent of the value of the Work completed (with the balance being retainage).

- 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100%** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200%** percent of

Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

- A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Not Used*

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

- A. The Contract Documents consist of all of the following:
1. This Agreement.
 2. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment bond (together with power of attorney).
 3. General Conditions.
 4. Specifications as listed in the table of contents of the project manual.
 6. Drawings (not attached but incorporated by reference) with each sheet bearing the following general title: **Construction Plans for Town of Greenville Southside Flooding Mitigation Project.**
 7. Addenda, if any.
 8. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
 - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**8.01 Contractor's Representations**

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
 7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on **the date signed by the Owner below** (which is the Effective Date of the Contract).

Owner:

TOWN OF GREENVILLE

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name:

(typed or printed)

Title:

(typed or printed)

Attest:

(individual's signature)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

Contractor:

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name:

(typed or printed)

Title:

(typed or printed)

Attest:

(individual's signature)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

License No.:

(where applicable)

State:

PERFORMANCE BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: Town of Greenville Mailing address <i>(principal place of business)</i> : 154 SW Old Mission Ave, Greenville, FL 32331	Contract Description <i>(name and location)</i> : Southside Flooding Mitigation SW Main Street, Greenville, FL Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____	By: _____
<i>(Signature)</i>	<i>(Signature)(Attach Power of Attorney)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____	Attest: _____
<i>(Signature)</i>	<i>(Signature)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

PAYMENT BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: Town of Greenville Mailing address <i>(principal place of business)</i> : 154 SW Old Mission Ave, Greenville, FL 32331	Contract Description <i>(name and location)</i> : Southside Flooding Mitigation SW Main Street, Greenville, FL Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 - 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 - 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 - 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 - 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 - 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 - 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 - 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 - 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 - 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 - 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE**3.01 Intent**

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 Reference Standards

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
 3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 Differing Subsurface or Physical Conditions

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;
- then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

- conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
 - J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
 - K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

- Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**7.01 *Contractor's Means and Methods of Construction***

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 Permits

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 Taxes

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 Laws and Regulations

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 Record Documents

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 1. Observations by Engineer;
 - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. Use or occupancy of the Work or any part thereof by Owner;
 - 5. Any review and approval of a Shop Drawing or Sample submittal;
 - 6. The issuance of a notice of acceptability by Engineer;
 - 7. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**10.01 *Owner's Representative***

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT**11.01 *Amending and Supplementing the Contract***

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
 - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
 - 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
 - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. *Payment Becomes Due*
1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. *Reductions in Payment by Owner*
1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

- submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
 - C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
 - D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
 - E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
 - F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 Limitation of Damages

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 No Waiver

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 Successors and Assigns

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 Headings

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

If the contract is partially or fully funded by federal sources, the contract will include FAA General Requirements, Supplemental Federal Requirements, and FAA General Provisions. Should there be a conflict between this document and the aforementioned documents, the federal documents shall govern.

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No suggested Supplementary Conditions in this Article.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

- B. *Evidence of Contractor's Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- C. *Evidence of Owner's Insurance:* After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

Owner shall furnish to Contractor **one** printed copy of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

- B. *Electronic Documents Protocol*: The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol (“EDP” or “Protocol”) for exchange of electronic transmittals.

1. *Basic Requirements*

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party’s use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

- 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is 10 MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.
 - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
 - c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
 - d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
 - e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
 - f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
 - g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the

Electronic Document or use an alternative delivery method to complete the communication.

- h. The Owner will operate a Project information management system (also referred to in this EDP as “Project Website”) for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:
 - 1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;
 - 2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;
 - 3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and
 - 4) Include any other Project Website attributes that may be pertinent to Contractor’s use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

- 1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
 - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
- 2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
- 3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

- 1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.

2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor ("Request") in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject to the provisions of the Owner's response to the Request, and to the following conditions to which Contractor agrees:
 - a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working document for Engineer's purposes solely, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and acknowledges that the content may not be suitable for Contractor's application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.
 - b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor's sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.
 - c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor's use, adaptation, or distribution of any Electronic Documents provided under the Request.
 - d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor's subcontractors. Contractor warrants that subsequent use by Contractor's subcontractors complies with all terms of the Contract Documents and Owner's response to Request.
3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis (at **\$250** per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

ARTICLE 3— CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE**ARTICLE 4— COMMENCEMENT AND PROGRESS OF THE WORK****4.05 Delays in Contractor's Progress**

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

- a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.
- b. The existence of abnormal weather conditions will be determined on a month-by-month basis in accordance with the following:
 - 1) Every workday on which one or more of the following conditions exist will be considered a “bad weather day”:
 - i) Total precipitation (as rain equivalent) occurring between 7:00 p.m. on the preceding day (regardless of whether such preceding day is a workday) through 7:00 p.m. on the workday in question equals or exceeds **one inch** of precipitation (as rain equivalent, based on the snow/rain conversion indicated in the table entitled Foreseeable Bad Weather Days; such table is hereby incorporated in this SC-4.05.C by reference.
 - ii) Ambient outdoor air temperature at 11:00 a.m. is equal to or less than the following low temperature threshold: **10** degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: **105** degrees Fahrenheit.
 - 2) Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by the closest AWOS, ASOS, or NOAA weather monitoring station.
 - 3) Contractor shall anticipate the number of foreseeable bad weather days per month indicated in the table in Exhibit **B** — Foreseeable Bad Weather Days.
 - 4) In each month, every bad weather day exceeding the number of foreseeable bad weather days established in the table in Exhibit **B** — Foreseeable Bad Weather Days will be considered as “abnormal weather conditions.” The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor’s then-current Progress Schedule’s critical path for the Project.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS**5.03 Subsurface and Physical Conditions**

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

There are no such reports.

Report Title	Date of Report	Technical Data

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

There are no such drawings.

Drawings Title	Date of Drawings	Technical Data

5.06 Hazardous Environmental Conditions

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

There are no such reports.

Report Title	Date of Report	Technical Data

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

There are no such reports.

Drawings Title	Date of Drawings	Technical Data

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.B:

1. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be **1** year after Substantial Completion.
2. After Substantial Completion, Contractor shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of 15 percent of the final Contract Price. The warranty bond period will extend to a date 2 years after Substantial Completion of the Work. Contractor shall deliver the fully executed warranty bond to Owner prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.
3. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- E. *Workers' Compensation and Employer's Liability*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	n/a
Bodily injury by disease—aggregate	n/a
Employer's Liability	
Each accident	\$500,000
Each employee	\$500,000
Policy limit	\$1,000,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	n/a

- F. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must be maintained for three years after final payment.

- b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
 1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
 6. Any limitation or exclusion based on the nature of Contractor's work.
 7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$1,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability*: Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$100,000
Each Accident	\$300,000
Property Damage	
Each Accident	\$100,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$300,000

- K. *Umbrella or Excess Liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	n/a
General Aggregate	n/a

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements*: Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of **\$2,000,000.00** after accounting for partial attribution of its limits to underlying policies, as allowed above.
- M. *Contractor's Pollution Liability Insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor's Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	\$
General Aggregate	\$

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**7.03 Labor; Working Hours**

SC-7.03 Delete Paragraph 7.03.C in its entirety, and insert the following:

- C. In the absence of any Laws or Regulations to the contrary, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

- D. **Contractor** shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

7.10 Taxes

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

- A. Owner is exempt from payment of sales and compensating use taxes of the State of Florida and of cities and counties thereof on all materials to be incorporated into the Work.
 - 1. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

7.13 Safety and Protection

SC-7.13 Insert the following after the second sentence of Paragraph 7.13.G:

The following Owner safety programs are applicable to the Work:

The Construction Safety and Phasing Plan (CSPP)

ARTICLE 8—OTHER WORK AT THE SITE

No suggested Supplementary Conditions in the Article.

ARTICLE 9—OWNER'S RESPONSIBILITIES

No suggested Supplementary Conditions in this Article.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**10.03 Resident Project Representative**

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor.

RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
3. *Liaison*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
4. *Review of Work; Defective Work*
 - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
5. *Inspections and Tests*
 - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
6. *Payment Requests:* Review Applications for Payment with Contractor.
7. *Completion*
 - a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.
 - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
 - d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal” items).
2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

No suggested Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

No suggested Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

15.08 Correction Period

SC-15.08 Add the following new Paragraph 15.08.G:

- G. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be the number of years set forth in SC-6.01.B.1; or if no such revision has been made in SC-6.01.B, then the correction period is hereby specified to be **2** years after Substantial Completion.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES**17.02 Arbitration**

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 Arbitration

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.
- C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.
- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.
- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
 - 1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
 - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
 - 3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
 - 4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

17.03 *Attorneys' Fees*

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02. [Note: If there is no Paragraph 17.02, because neither arbitration nor any other dispute resolution process has been specified here in the Supplementary Conditions, then revise this to state "Add the following new Paragraph immediately after Paragraph 17.01" and revise the numbering accordingly].

17.03 *Attorneys' Fees*

- A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

ARTICLE 18—MISCELLANEOUS

No suggested Supplementary Conditions in this Article.

EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contractors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version [number] or later			
DWG	Autodesk® AutoCAD .dwg format Version 2024			
DOC	Microsoft® Word .docx format Version 2021			
EXC	Microsoft® Excel .xls or .xml format Version 2021			
DB	Microsoft® Access .mdb format Version 2021			

EXHIBIT B—FORESEEABLE BAD WEATHER DAYS

Month	Number of Foreseeable Bad Weather Days in Month Based on Precipitation as Rain Equivalent (inches) (1)	Ambient Outdoor Air Temperature (degrees F)	
		Number of Foreseeable Bad Weather Days in Month Based on Low Temperature (at 11:00 a.m.)	Number of Foreseeable Bad Weather Days in Month Based on High Temperature (at 3:00 p.m.)
January	1	0	0
February	2	0	0
March	1	0	0
April	1	0	0
May	3	0	0
June	1	0	0
July	2	0	2
August	5	0	2
September	2	0	2
October	1	0	0
November	1	0	0
December	4	0	0
Notes:			
1. Two inches of sleet equal one inch of rain. Five inches of wet, heavy snow equal one inch of rain. Fifteen inches of “dry” powder snow equals one inch of rain.			

C-1000 FEDERAL SUPPLEMENTAL SPECIFICATIONS**Contract Provisions for Coronavirus State and Local Fiscal Recovery Funds (SLFRF) Agreements**

The Department, as a Non-Federal Entity as defined by 2 CFR §200.69, shall comply with the following provisions, where applicable. For purposes of this Grant Agreement between the Department and the Grantee, the term “Recipient” shall mean “Grantee.”

Further, the Department, as a pass-through entity, also requires the Grantee to pass on these requirements to all lower tier subrecipients/contractors, and to comply with the provisions of the award, the SLFRF implementing regulation, including applicable provisions of the OMB Uniform Guidance (2 CFR Part 200), and all associated terms and conditions. Therefore, Grantees must include these requirements in all related subcontracts and/or sub-awards. Grantees can include these requirements by incorporating this Attachment in the related subcontract and/or sub-awards, however for all such subcontracts and sub-awards, the Grantee shall assume the role of the Non-Federal Entity and the subrecipients shall assume the role of the Recipient.

2 CFR PART 200 APPENDIX 2 REQUIREMENTS**1. Administrative, Contractual, and Legal Remedies**

The following provision is required if the Agreement is for more than \$150,000. In addition to any of the remedies described elsewhere in the Agreement, if the Recipient materially fails to comply with the terms and conditions of this Contract, including any Federal or State statutes, rules, or regulations, applicable to this Contract, the Non-Federal Entity may take one or more of the following actions.

- A. Temporarily withhold payments pending correction of the deficiency by the Recipient.
- B. Disallow (that is, deny both use of funds and any applicable matching credit for) all or part of the cost of the activity or action not in compliance.
- C. Wholly or partly suspend or terminate this Contract.
- D. Take other remedies that may be legally available.

The remedies identified above, do not preclude the Recipient from being subject to debarment and suspension under Presidential Executive Orders 12549 and 12689. The Non-Federal entity shall have the right to demand a refund, either in whole or part, of the funds provided to the Recipient for noncompliance with the terms of this Agreement.

2. Termination for Cause and Convenience

Termination for Cause and Convenience are addressed elsewhere in the Agreement.

3. Equal Opportunity Clause

The following provision applies if the agreement meets the definition of “federally assisted construction contract” as defined by 41 CFR Part 60-1.3:

During the performance of this Agreement, the Recipient agrees as follows:

- A. The Recipient will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Recipient will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
 - i. 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. The Recipient agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- B. The Recipient will, in all solicitations or advertisements for employees placed by or on behalf of the Recipient, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- C. The Recipient will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's

essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Recipient's legal duty to furnish information.

- D. The Recipient will send to each labor union or representative of workers with which he has a collective bargaining agreement or other Agreement or understanding, a notice to be provided advising the said labor union or workers' representatives of the Recipient's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- E. The Recipient will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- F. The Recipient will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- G. In the event of the Recipient's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the Recipient may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- H. The Recipient will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Recipient will take such action with respect to any subcontractor purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

1. Contract Work Hours and Safety Standards Act

Where applicable, if the Agreement is in excess of \$100,000 and involves the employment of mechanics or laborers, the Recipient must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each Recipient must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

2. Rights to Inventions Made Under Agreement

If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the Non-Federal Entity or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the Non-Federal Entity or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

3. Clean air Act (42 U.S. C. 7401-7671q.), the Federal Water Pollution Control Act (33 U.S.C. 1251- 1387), and EPA Regulations

If the Agreement is in excess of \$100,000, the Recipient shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387), and by the EPA (40 CFR Part 15). Violations must be

reported to the Federal Awarding Agency and the Regional Office of the Environmental Protection Agency (EPA).

- i. The Grantee shall include these requirements for the Clean Air Act and the Federal Water Pollution Act in each subcontract exceeding \$100,000 financed in whole or in part with SLFRF funds.

4. Debarment and Suspension (Executive Orders 12549 and 12689)

The Recipient certifies that it is not listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 and 2 CF 1200 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension."

5. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)

The Recipient certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. If applicable, the Recipient shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award, using form SF-LLL, available at:

https://apply07.grants.gov/apply/forms/sample/SFLLL_1_2_P-V1.2.pdf.

- i. Grantees who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier, up to the recipient.

6. Procurement of Recovered Materials

The Recipient must comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act as described in 2 CFR part 200.322.

7. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

The Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. See Section 889 of Public Law 115-232 (National Defense Authorization Act 2019). Also, see 2 CFR 200.216 and 200.471.

8. Domestic Preferences for Procurement

The Recipients and subrecipients must, to the greatest extent practical, give preference to the purchase, acquisition, or use of goods, products, or materials produced in the United States in accordance with 2 CFR 200.322.

ADMINISTRATIVE

1. General Federal Regulations

Recipients shall comply with the regulations listed in 2 CFR 200, 48 CFR 31, and 40 U.S.C. 1101 *et seq.*

2. Rights to Patents and Inventions Made Under a Contract or Agreement

Rights to inventions made under this assistance agreement are subject to federal patent and licensing regulations, which are codified at Title 37 CFR Part 401 and Title 35 U.S.C. 200 through 212.

3. Compliance with the Trafficking Victims Protection Act of 2000 (2 CFR Part 175)

Recipients, their employees, subrecipients under this award, and subrecipients' employees may not:

- A. Engage in severe forms of trafficking in persons during the period of time that the award is in effect;
- B. Procure a commercial sex act during the period of time that the award is in effect; or
- C. Use forced labor in the performance of the award or subawards under the award.

4. Whistleblower Protection

Recipients shall comply with U.S.C. §4712, Enhancement of Recipient and Subrecipient Employee Whistleblower Protection. This requirement applies to all awards issued after July 1, 2013 and effective December 14, 2016 has been permanently extended (Public Law (P.L.) 114-261).

- A. This award, related subawards, and related contracts over the simplified acquisition threshold and all employees working on this award, related subawards, and related contracts over the simplified acquisition threshold are subject to the whistleblower rights and remedies in the pilot program on award recipient employee whistleblower protections established at 41 U.S.C. 4712 by section 828 of the National Defense Authorization Act for Fiscal Year 2013 (P.L. 112-239).
- B. Recipients, their subrecipients, and their contractors awarded contracts over the simplified acquisition threshold related to this award, shall inform their employees in writing, in the predominant language of the workforce, of the employee whistleblower rights and protections under 41 U.S.C. 4712.
- C. The Recipient shall insert this clause, including this paragraph C, in all subawards and in contracts over the simplified acquisition threshold related to this award; best efforts should be made to include this clause, including this paragraph C in any subawards and contracts awarded prior to the effective date of this provision.

5. Notification of Termination (2 CFR § 200.340)

In accordance with 2 CFR § 200.340, in the event that the Agreement is terminated prior to the end of the period of performance due to the Recipient's or subcontractor's material failure to comply with Federal statutes, regulations or the terms and conditions of this Agreement or the Federal award, the termination shall be reported to the Office of Management and Budget (OMB)-designated integrity and performance system, accessible through System for Award Management (SAM) currently the Federal Awardee Performance and Integrity Information System (FAPIS). The Non-Federal Entity will notify the Recipient of the termination and the Federal requirement to report the termination in FAPIS. See 2 CFR § 200.340 for the requirements of the notice and the Recipient's rights upon termination and following termination.

6. Additional Lobbying Requirements

- A. The Recipient certifies that no funds provided under this Agreement have been used or will be used to engage in the lobbying of the Federal Government or in litigation against the United States unless authorized under existing law.
- B. The Lobbying Disclosure Act of 1995, as amended (2 U.S.C. §1601 et seq.), prohibits any organization described in Section 501(c)(4) of the Internal Revenue Code, from receiving federal funds through an award, grant (and/or subgrant) or loan unless such organization warrants that it does not, and will not engage in lobbying activities prohibited by the Act as a special condition of such an award, grant (and/or subgrant), or loan. This restriction does not apply to loans made pursuant to approved revolving loan programs or to contracts awarded using proper procurement procedures.
- C. Pursuant to 2 CFR §200.450 and 2 CFR §200.454(e), the Recipient is hereby prohibited from using funds provided by this Agreement for membership dues to any entity or organization engaged in lobbying activities.

7. Increasing Seat Belt Use in the United States

Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Grantee is encouraged to adopt and enforce on-the-job seat belt policies and programs for its employees when operating company-owned, rented or personally owned vehicles.

8. Reducing Text Messaging While Driving

Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Grantee is encouraged to adopt and enforce policies that ban text messaging while driving and establish workplace safety policies to decrease accidents caused by distracted drivers.

9. Uniform Relocation Assistance and Real Property Acquisitions Act of 1970

Where applicable, 42 U.S.C. §§ 4601-4655 and implementing regulations apply to this Agreement.

COMPLIANCE WITH ASSURANCES

1. Assurances

Recipients shall comply with all applicable assurances made by the Department or the Recipient to the Federal Government during the Grant application process.

FEDERAL REPORTING REQUIREMENTS

1. FFATA

Grant Recipients awarded a new Federal grant greater than or equal to \$30,000 awarded on or after October 1, 2015, are subject to the FFATA the Federal Funding Accountability and Transparency Act ("FFATA") of 2006. The FFATA legislation requires that information on federal awards (federal financial assistance and expenditures) be made available to the public via a single, searchable website, which is

www.USASpending.gov.

The Grantee agrees to provide the information necessary, within one (1) month of execution, for the Department to comply with this requirement.

DEPARTMENT OF TREASURY-SPECIFIC

1. Civil Rights Compliance

Recipients of Federal financial assistance from the Treasury are required to meet legal requirements relating to nondiscrimination and nondiscriminatory use of Federal funds. Those requirements include ensuring that entities receiving Federal financial assistance from the Treasury do not deny benefits or services or otherwise discriminate on the basis of race, color, national origin, (including limited English proficiency), disability, age, or sex (including sexual orientation and gender identity), in accordance with the following: Title VI of Civil Rights Acts of 1973 (Section 504), Public Law 93-112, as amended by Public Law 93-516, 29 U.S.C. 794; Title IX of the Education Amendments of 1972 (Title IX), 20 U.S.C. 1681 et seq., and the Department's implementing regulations, 31 CFR 28; Age Discrimination Act of 1975, Public Law 94-135, 42 U.S.C. 6101 et seq., and the Department of Treasury implementing regulations at 31 CFR part 23.

The Department of Treasury will request information on recipients' compliance with Title VI of the Civil Rights Act of 1964, as applicable, on an annual basis. This information may include a narrative describing the recipient's compliance with Title VI, along with other questions and assurances.

SLFRF-SPECIFIC

1. Period of Performance

The Department must obligate all funds from SLFRF by December 31, 2024, and all such obligated funds must be expended by December 31, 2026. As such, the Contractor must submit all invoices by September 30, 2026, unless approved in writing by the Department.

2. Equipment and Real Property Management

Any purchase of equipment or real property with SLFRF funds must be consistent with the Uniform Guidance at 2 CFR Part 200, Subpart D. Equipment and real property acquired under this program must be used for the originally authorized purpose. Consistent with 2 CFR 200.311 and 2 CFR 200.313, any equipment or real property acquired using SLFRF funds shall vest in the non-Federal entity. Any acquisition and maintenance of equipment or real property must also be in compliance with relevant laws and regulations.

SLFRF INFRASTRUCTURE PROJECTS

For all infrastructure projects, the Grantee shall provide the following project information on a quarterly basis to the Department:

- i. Projected/actual construction start date (month/year)
- ii. Projected/actual initiation of operation date (month/year)
- iii. Location details

SLFRF INFRASTRUCTURE PROJECTS OVER \$10 MILLION

For infrastructure projects over \$10 million, the following provisions apply:

1. Wage Certification

Grantees may provide a certification that all laborers and mechanics employed by Grantee in the performance of such project are paid wages at the rates not less than those prevailing, as determined by the U.S. Secretary of Labor in accordance with the Davis-Bacon Act, for the corresponding classes of laborers and mechanics employed projected of a character similar to the contract work in the civil subdivision of Florida in which the work is to be performed. If the Grantee does not provide such certification, the Grantee must provide a project employment and local impact report detailing:

- i. The number of employees of contractors and sub-contractors working on the project;
- ii. The number of employees on the project hired directly and hired through a third party;
- iii. The wages and benefits of workers on the project by classification; and
- iv. Whether those wages are at rates less than those prevailing.

Grantee must maintain sufficient records to substantiate this information upon request.

2. Project Labor Agreements

Grantees may provide a certification that the project includes a project labor agreement, meaning a pre-hire

collective bargaining agreement consistent with the section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the Grantee does not provide such certification, the Grantee must provide a project workforce continuity plan, detailing:

- i. How the Grantee will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project;
- ii. How the Grantee will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;
- iii. How the Grantee will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities;
- iv. Whether workers on the project will receive wages and benefits that will secure and appropriately skilled workforce in the context of the local or regional labor market; and
- v. Whether the project has completed a labor agreement.

3. Other Reporting Requirements

Grantees must report whether the project prioritizes local hires and whether the project has Community Benefit Agreement, with a description of any such agreement, if applicable.

SLFRF WATER & SEWER PROJECTS

For water and sewer projects, Grantees shall provide the following information to the Department once the project starts, as applicable:

- i. National Pollutant Discharge Elimination System (NPDES) Permit Number, for projects aligned with the Clean Water State Revolving Fund
- ii. Public Water System (PWS) ID number, for projects aligned with the Drinking Water State Revolving Fund.

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FDOT SPECIFICATIONS

DIVISION I

General Requirements and Covenants

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.

Division III of the Specifications (Materials) is written in the passive voice writing style.

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.

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.”

Article.

The numbered prime subdivision of a Section of these Specifications.

Bidder.

An individual, firm, or corporation 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.

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 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 Claim (Claim).

A written demand submitted to the Department by the Contractor in compliance with 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 for Proposal, 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, Specifications, Plans (including revisions thereto issued during construction), Estimated Quantities Report, Standard Plans, Addenda, 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 supplementary agreements. As used in Section 2 only, Contract Documents also do not include Resolution of Award of Contract, Executed Form of Contract, and Performance and Payment Bond.

Contract Letting.

The date that the Department opened 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.

Contractor’s Engineer of Record.

A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing of components of the permanent structure as part of a redesign or Cost Savings Initiative Proposal, or for repair

designs and details of the permanent work. 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 Engineer may become a Department-approved Specialty Engineer if the individual meets the Professional Engineer experience requirements set forth within the individual work groups in Chapter 14-75, Rules of the Department of Transportation, Florida Administrative Code. Department-approved Specialty Engineers are listed on the State Construction 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, materialmen, suppliers or other agents. This term does not include "extra work".

Department.

State of Florida Department of Transportation.

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.

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 Plans and Specifications. The Engineer of Record may be Departmental in-house staff or a consultant retained by the Department.

The Contractor shall not employ the Engineer of Record as the Contractor’s Engineer of Record or as a 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.

Estimated Quantities Report.

The Estimated Quantities Report contains pay item and quantity information for the project. When the Plans do not adequately describe quantity related information, refer to the Estimated Quantities Report.

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 be 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.

Major Item of Work.

Any item of work having an original Contract value in excess of 5% of the original Contract amount.

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 plans sheets and digital models (2D and 3D) provided as contract documents, including reproductions thereof, showing the location, character, dimensions, and details of the work.

Proposal (Bid, Bid Proposal).

The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

Proposal Form.

The official form or the electronically generated bid item sheets on which the Department requires formal bids to be prepared and submitted for the work.

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 Correction.

A document initiated by the Contractor proposing a method for correction of work that is not in compliance with the Contract Documents. The Request for Correction is submitted to the Engineer for review and disposition.

Request for Information.

A document initiated by the Contractor that is submitted to the Engineer for interpretation of a Contract Document provision, the meaning of which is not clear to the Contractor. The Request for Information is submitted to the Engineer for review and disposition.

Request for Modification.

A document initiated by the Contractor requesting to modify the Contract Documents, that is submitted to the Engineer for review and disposition.

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.

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, other than the Engineer of Record or his subcontracted consultant, 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 Analyses 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 appears 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 Contractor and responsible for the performance of the Contract and for payment of all legal debts pertaining thereto.

Technical Special Provisions.

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 to execute and complete 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.

Except as noted below, prequalify with the Department to be eligible to bid. The Department publishes regulations covering prequalification of Bidders under separate cover.

The Department does not require the Bidder to be a prequalified Contractor if bidding construction contracts of \$250,000 or less, or if constructing buildings. In addition, at its sole discretion, the Department may waive prequalification requirements on contracts of \$500,000 or less.

For construction contracts requiring prequalification, file an application for qualification using the Department's online prequalification application system, giving detailed information with respect to financial resources, equipment, past record, personnel, and experience. For qualified applicants, the Department will issue a certificate fixing the types of work and the aggregate amount of work that the Department allows the prequalified Bidder to have under contract at any one time.

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.

All prequalified Contractors bidding on any Contract must certify their total dollar amount of Work Underway and submit Form 375-020-39 or a spreadsheet in a similar format prior to submitting a bid. This information must be submitted at least once during the month the bid is due via the "Work Underway" link in the Contractor Pre-Qualification System.

2-2 Proposals.

2-2.1 Obtaining Proposal Forms: 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.

Upon advertising, the Department will make the Proposal Forms available for download as an electronic file from the Online Ordering System or provide the Proposal Forms on portable electronic media as stipulated in the Advertisement. This file contains the information to be used by the Bidder, who has ordered and obtained the Proposal Forms, to submit the Proposal.

The Department is not responsible for loss of or damage to the portable electronic media after it has been received by or delivered to the Bidder. If loss or damage occurs, the Bidder may order replacement Proposal Forms.

If the Bidder requests replacement Proposal Forms, the Department will attempt to provide the replacement by overnight delivery or by electronic transmittal of the files. The Department will not be held responsible if the Bidder cannot complete and submit a bid due to failure or incomplete delivery of the files.

Unless otherwise indicated in the Advertisement, the Bidder has the option to submit a bid either as an Internet Bid Submittal in accordance with 2-2.3 or as a Hard Copy Bid Submittal in accordance with 2-2.4. When an Internet bid submittal is used, the hard copy will not be considered.

2-2.2 Department Modifications to Contract Documents: Notification of modifications to any Contract Documents will be posted on the Department's website at the following URL address: https://www.fdot.gov/contracts/Lettings/Letting_Project_Info.shtm and will also be transmitted to the Bidder. The email address provided by the Bidder at the time of registration for Online Ordering will be used to transmit notification of modifications. Follow the instructions provided in the notification of modifications to access the amendment files.

The Bidder shall take responsibility for downloading the revised information per the instructions included in the notification of modifications.

2-2.3 Internet Bid Submittals: Unless otherwise indicated in the Advertisement, the Bidder shall use the Department's bid software to prepare a bid for Internet submittal. The Department will accept, as the official bid, the set of Proposal Forms generated from the Department's bid software along with a complete Proposal package, submitted via the Internet in accordance with 2-5 and 2-8. A Digital ID is required to submit a bid via the Internet. Digital IDs may be obtained as outlined in the Advertisement.

The Department will not be responsible for any communications or machine breakdowns, transmission interruptions, delays, or any other problems that interfere with the receipt of Proposals as required above either at the Bidder's transmitting location, at the Department's receiving location, or anywhere between these locations. Receipt or non-receipt of Proposals will not be considered grounds for a bid protest. The Department will not be held responsible if the Bidder cannot complete or submit a bid due to failure or incomplete delivery of the files submitted via the Internet.

2-2.4 Hard Copy Bid Submittals: Unless otherwise indicated in the Advertisement, the Bidder shall use the Department's bid software to prepare a bid for hard copy submittal.

The Department will accept, as the official bid, this set of Proposal Forms generated from the Department's bid software along with a complete Proposal package, delivered to the Department in hard copy in accordance with the instructions listed below and the requirements of 2-5 and 2-8.

Print and submit bid item sheets generated from the Department's bid software on letter size paper. Ensure that all computer generated sheets are legible. Do not submit computer generated sheets using a font size smaller than 9 point.

Return the Department's bid software generated Proposal as the official bid, with the Proposal labeled with the Bidder's Name, Vendor Number, Letting Date, Revision Date (if applicable) and the Proposal ID.

2-3 Interpretation of Estimated Quantities.

2-3.1 Lump Sum Contracts: 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.

2-3.2 Contracts other than Lump Sum: For those items constructed within authorized plan limits or dimensions, use the quantities shown in the Plans and in the Proposal Form as the basis of the bid. The Department will also use these quantities for final payment as limited by the provisions for the individual items. For those items having variable final pay quantities that are dependent on actual field conditions, use and measurement, the quantities shown in the Plans and in the Proposal Form are approximate and provide only a basis for calculating the bid upon which the Department will award the Contract. Where items are listed for payment as lump sum units and the Plans show estimates of component quantities, the Department is responsible for the accuracy of those quantities limited to the provisions of 9-3.3. Where items are listed for payment as lump sum units and the Plans do not show estimates of component quantities, the Bidder is solely responsible for their own estimates of such quantities.

The Department may increase, decrease, or omit the estimated quantities of work to be done or materials to be furnished.

2-4 Examination of Plans, Specifications, Special Provisions, 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.

The Department does not guarantee the details pertaining to borings, and pavement cores as shown in the Contract Documents, 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 and pavement core 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: Submit Proposals on the Proposal Form described in 2-2. Any pay item that will be provided free or at no cost to the Department shall be indicated as "free" or "\$.00". If the pay item is left blank or n/a is used, the bid may be declared irregular. Show the total of the bid on the face of the Proposal.

2-5.2 Internet Bid Submittals: The Bidder shall execute the Proposal under the Bidder's Digital ID and enter the firm's bidding office street address on the Bidders Information Tab in the Department's bid software. This Digital ID represents the firm as an individual, partnership, corporation, limited liability company, or joint venture. By entering and submitting the Digital ID the authorized parties obligate the firm to the bid. Internet Bid Submittals must acknowledge, 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, by indicating such in the Proposal. The Department will not consider any bid unless such acknowledgment is included.

2-5.3 Hard Copy Bid Submittals: 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 enter 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, the firm name of the partnership, if any, have two or more of the general partners or authorized person sign the Proposal and enter 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, affix the corporate seal and enter 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, have the manager or authorized member sign the Proposal and enter the company's bidding office address. If the Proposal is made by a joint venture, execute the Proposal by setting out the joint venture name, have the authorized parties sign the Proposal and enter the bidding office's street address. File with the Department Form 375-020-08, 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, or if the Bidder submits a Proposal which was not generated using the Department's bid software.

When the Department provides for alternate bids in the Proposal Form, 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 Proposal 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.

2-8.1 Internet Bid Submittals: Unless otherwise indicated in the Advertisement, the Proposal may be submitted via the Internet. The Department will not accept responsibility for Internet bids not meeting the time requirement stipulated in the Advertisement.

2-8.2 Hard Copy Bid Submittals: Unless otherwise indicated in the Advertisement, the Proposal may be submitted via hard copy. Submit the Proposal in a sealed envelope, bearing on

the outside the name of the Bidder, the Bidder's address, and the Proposal ID 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 Advertisement. 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 Advertisement. The Department will not consider Proposals received after the time set for opening bids. The Department will retain these Proposals unopened.

2-9 Withdrawal or Revision of Proposals.

2-9.1 Internet Bid Submittals: A Bidder may withdraw a Proposal any time prior to the bid submittal deadline specified in the Advertisement. The resubmission of any Proposal so withdrawn must be made as a complete Proposal, subject to the provisions of 2-8.

A Bidder may revise a Proposal any time prior to the bid submittal deadline specified in the Advertisement. Revisions may be made via Internet in accordance with 2-8.1 or by fax in accordance with 2-9.2.

The Department will not be responsible for any communications or machine breakdowns, transmission interruptions, delays, or any other problems that interfere with the receipt of revisions to Proposals as required above either at the Bidder's transmitting location, at the Department's receiving location, or anywhere between these locations. Receipt or non-receipt of revisions to a Proposal will not be considered grounds for a bid protest. The Department will not be held responsible if the Bidder cannot complete or submit revisions to a bid due to failure or incomplete delivery of the files submitted via the Internet.

2-9.2 Hard Copy Bid Submittals: A Bidder may withdraw or revise a Proposal after submission, provided the Department receives a written request to withdraw or revise 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) Proposal changes will be accepted if received in full at the fax number listed in the Bid Solicitation Notice by the time Proposals are due on the day of the letting 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 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 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 Proposal change will not be considered grounds for a bid protest.

2-10 Opening of Proposals.

The Department will open and publicly announce Proposals at the time and place indicated in the Advertisement. 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.

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.

For the purpose of award, after opening and reading the Proposals, the Department will consider as the bid the correct summation of each unit bid price multiplied by the estimated quantities shown in the Proposal. 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 determines, in its sole discretion, to be in the best interest of the State.

The Department reserves the right to delete the bid portion of the utility relocation work from the Contract. When the Department deletes utility relocation work from the Contract, the Department will recalculate the Contract bid tabulations based on the remaining project quantities.

In the event that the Department deletes utility relocation work from the Contract, the utility owner will relocate such utilities in accordance with the backup Utility Relocation Schedule contained in the Contract Documents.

3-2 Award of Contract.

3-2.1 General: If the Department decides to award the Contract, the Department will award the Contract to the lowest responsible Bidder whose Proposal complies with all the Contract Document requirements. 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 extend the time period by mutual consent.

Prior to award of the Contract by the Department, the Bidder must provide proof of authorization to conduct business in the State of Florida.

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 two lowest responsible Bidders immediately following the opening and checking of the Proposals. The Department will immediately release the Proposal Guaranty of the two lowest responsible Bidders after the successful Bidder delivers the executed Contract and a satisfactory Contract 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 375-020-27. 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 Contract 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 employees.

3-6 Execution of Contract and Contract Bond.

Within 10 calendar days, excluding Saturdays, Sundays, and State 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 State holidays, of receipt of the Contract award, the Department may annul the award, causing the Contractor to forfeit the Proposal Guaranty to the Department 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 either 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 20.055(5), Florida Statutes, and incorporate in all subcontracts the obligation to comply with Section 20.055(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 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 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.

SECTION 4 SCOPE OF THE WORK

4-1 Intent of Contract.

The intent of the Contract is to provide for the construction and completion in every detail of the work described in the Contract. Furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the Contract Documents.

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 a digital signature certificate.

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 or Special Provisions for the Contract, and all requirements of such Supplemental Specifications or Special Provisions 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, such increases or decreases in quantities, 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 increases, decreases or alterations 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, the same as if it had been a part of the original Contract.

The term “significant change” applies only when:

1. 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, or

2. A major item of work, as defined in 1-3, is increased in excess of 125% or decreased below 75% of the original Contract quantity. The Department will apply any price adjustment for an increase in quantity only to that portion in excess of 125% of the original Contract item quantity in accordance with 4-3.2 below. In the case of a decrease below 75% the Department will only apply a price adjustment for the additional costs that are a direct result of the reduction in quantity.

In (1) above, 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 4-1	
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.
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 4-1,
- 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 EquipmentWatch, 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 = Monthly
Rate/176 x Adjustment Factors x 100%.
- b. Allowable Hourly Operating Cost = Hourly Operating
Cost x 100%.
- c. Allowable Rate Per Hour = Allowable Hourly
Equipment Rate + 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:

$$Ds = \frac{As \times C}{B}$$

Where As = Original Contract Amount minus Original

Subcontract amounts(s)*

B = Original Contract Time

C = 8%

Ds = 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 or Unilateral Payment: A Supplemental Agreement or Unilateral Payment will be used to clarify the Plans and Specifications of the Contract; to provide for unforeseen work, grade changes, or alterations in the Plans which could not reasonably have been contemplated or foreseen in the original Plans and Specifications; to change the limits of construction to meet field conditions; to provide a safe and functional connection to an existing pavement; to settle documented Contract claims; to make the project functionally operational in accordance with the intent of the original Contract and subsequent amendments thereto.

A Supplemental Agreement or Unilateral Payment may be used to expand the physical limits of the project only to the extent necessary to make the project functionally operational in accordance with the intent of the original Contract. The cost of any such agreement extending the physical limits of the project shall not exceed \$100,000 or 10% of the original Contract price, whichever is greater.

Perform no work to be covered by a Supplemental Agreement or Unilateral Payment before written authorization is received from the Engineer. The Engineer's written authorization will set forth sufficient work information to allow the work to begin. The work

activities, terms and conditions will be reduced to written Supplemental Agreement or Unilateral Payment form promptly thereafter. 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 in 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, joint project agreements or utility relocation schedules.

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 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 will be held prior to Contract Time beginning for the Contractor and Department to discuss potential Proposals. This mandatory workshop can only be eliminated if agreed to in writing by both the Contractor and Department. This Subarticle does not, however, apply to any such proposal unless the Contractor identifies it at the time of its submission to the Department as a proposal submitted pursuant to this Subarticle.

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. The Department will not recognize the Contractor's correction of plan errors that result in a cost reduction, as a Proposal. Deletions of work, approved by the Engineer, that are the sole objective of the Proposal will include a cost sharing percentage with the Contractor as defined in Subarticle 4-3.9.7.

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. For potential Proposals not discussed at the Cost Savings Initiative Workshop, a mandatory concept meeting will be held for the Contractor and Department to discuss the potential Proposal prior to development of the 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 and deleted pay items. Identify additional proposed work not covered by pay items within the Contract, by using pay item numbers in the Basis of Estimates Manual. In preparing the estimates, include overhead, profit, and bond within pay items in the Contract. Separate pay item(s) for the cost of overhead, profit, and bond will not be allowed.

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 analyses 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 Contractor's Engineer of Record. Written documentation or drawings will be submitted clearly delineating the responsibility of the Contractor's 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 Proposals 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. In determining the estimated net savings, the Department reserves the right to disregard the Contract bid prices if, in the judgment of the Engineer, such prices do not represent a fair measure of the value of work to be performed or to be deleted.

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 and upon the final quantities. The Department will compute the net savings by subtracting the revised total cost of all bid items affected by the Proposal from the total cost of the same bid items as 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 who is not the originator of the Proposal design, and is pre-qualified by the Department in accordance with Rule 14-75, 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 Contractor's Engineer of Record for the Proposal design. The Department reserves the right to require the Contractor's Engineer of Record to assume responsibility for design of the entire structure.

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, the Contractor shall receive up to 50% of the net reduction in the cost of the performance of the Contract. The net reduction in the cost of the performance of the Contract will be determined by subtracting the reasonable documented engineering costs, incurred by the contractor to design and develop a Proposal, from the gross reduction in the cost of the performance of the Contract. The reasonable documented engineering costs incurred by the contractor will be paid for as part of the negotiated Supplemental Agreement. Engineering costs incurred by the contractor 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 will be limited to 25% of the gross reduction in the cost of the performance of the Contract and shall not include any markup by the Contractor or the costs for engineering services performed by the Contractor.

If the Department determines that the parties identified in 337.11(17) Florida Statutes have contributed to the reduction in the cost of the performance of the contract, the contractor's share may be 45% of the net reduction.

If the Department approves a Proposal where deletions of work are the sole objective of the Proposal, the Contractor shall receive 14.5% of the net reduction in the cost of the performance of the Contract.

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. The Engineer will determine the basis of payment for such an adjustment in a fair and equitable amount.

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. During construction, the Contractor may use materials from existing structures that are required to be removed and that are designated to remain the property of the Department. Do not cut or otherwise damage such material during removal unless the Engineer gives permission to do so. Store material in an accessible location as the Engineer directs. The Department is not responsible for the quality or quantity of any material salvaged.

4-5.2 Ornamental Trees and Shrubs: Take ownership of all ornamental trees or shrubs existing in the right-of-way that are required to be removed for the construction operations and which are not specifically designated in the Plans 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 when the Engineer directs.

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.

5-1.2 Department's 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 sections and general plan view details. Cross sectional views maybe provided or created from provided surface models. 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.

Elevations and B.M. Datum shown are North American Vertical Datum 1988 (NAVD-1988), National Geodetic Vertical Datum of 1929 (NGVD-1929), or other datum as noted in the Plans.

The existing surface is a combination of the following:

1. The natural ground or the original ground line,
2. The bottom of the existing pavement,
3. The bottom of existing features removed by clearing and grubbing,
4. The bottom of the existing base, if the base is to be removed,

The finished graded surface includes the completed grades of side slopes, unpaved shoulders, and the bottom of the base for flexible or rigid pavement.

5-1.3 Alterations in Plans: The Department will issue, in writing, all authorized alterations affecting the requirements and information given on the approved Plans.

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 functioning roadways. Construction Affecting Public Safety may also apply to the construction or 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 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, and 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 the 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. Major and Unusual Structures: Bridges of 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 proprietary pedestrian steel truss spans not satisfying the Category 1 conditions of FDOT Design Manual 266.4.
- f. Concrete segmental, post-tensioned girder bridges and post-tensioned substructures.
- g. Cable stayed, extradosed or suspension bridges.
- h. Arch bridges.
- i. Tunnels.
- j. All movable bridges (including specifically structural, electrical and mechanical components).
- k. Rehabilitation, widening, lengthening or jacking of any of the above structures.

8. Permanent Works: All the permanent structures and parts thereof required of the completed Contract.

9. 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.

10. Scaffolding: An elevated work platform used to support workers, materials and equipment, but not intended to support the structure.

11. Shop Drawings: A shop drawing is 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.

12. Shoring: A component of falsework such as horizontal, vertical or inclined support members. In this Section, this term is interchangeable with falsework.

13. Special Erection Equipment: Includes launching gantries, beam and winch equipment, form travelers, segment lifters, beam shifters, 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.

14. 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 below for shop drawing submittal and review requirements.

Table 5-1 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 Shop Drawing Check prints and disposition stamp by Design EOR
Steel Fabrication Drawings		Originator			Reviewer
Steel Erection Plan			Originator		Reviewer
Geometry Control Manual				Originator	Reviewer
Segmental Erection Manual				Originator	Reviewer
Segmental Shop Drawings					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

**Table 5-1
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 Shop Drawing Check prints and disposition stamp by Design EOR
Temporary Works Affecting Public Safety ₂			Originator		Reviewer
Demolition Plans of Bridges with Continuous Beams or Girders Where One Span Within the Unit is Over Traffic			Originator		Reviewer
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

Table 5-1 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 Shop Drawing Check prints and disposition stamp by Design EOR
Precast Box Culverts			Originator		Reviewer
Non-standard structures and components for drainage, lighting, signalization and signing			Originator		Reviewer
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. Include integration details of the post-tensioning 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, originator may be a licensed Architect. 4. In lieu of the Design Engineer of Record, the reviewer may be the Design Architect of Record.					

5-1.4.3 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, and prior to the submission of any shop drawings.

Coordinate subsequent submittals with construction schedules to allow sufficient time for review, resubmittal 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 in the Plans. Prepare all shop drawings using the same units of measure as those used in the Plans. 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 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 on sheets 11 by 17 inches.

5-1.4.4.2 Other Documents: Submit PDF files of other documents such as trade literature, catalogue information, calculations, and manuals formatted on 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 the same units of measure as the 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 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 items on the Approved Products List used as intended in the relevant Standard Plans and Standard Specifications. For non-prequalified items, determine the submittal path to be followed based upon the identity of the Engineer of Record as shown adjacent to the title block on the structural plan sheets, and on the key sheets of roadway plans, signing, and pavement marking plans, and/or lighting plans. At the preconstruction conference, the Department will notify the Contractor in writing of any changes in the submittal path and whether the Department's or the Consultant's review stamp will signify an officially reviewed shop drawing.

1. When the Florida Department of Transportation is the Engineer of Record, submit shop drawings to the Resident Engineer and to the appropriate Department

Review Office. Include in the submittal other information such as catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating procedures when required by the work. Submit material certifications and material tests to the Resident Engineer.

2. When the Engineer of Record is a consultant hired by the Department, submit shop drawings to the consultant, the Resident Engineer and, when requested, to the appropriate Department Review Office. Include in the submittal other documentation such as catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating manuals when required by the work. Submit material certifications and material tests to the Resident Engineer.

5-1.4.5.2 Building Structures: Submit shop drawings and all correspondence related to building structures, such as Rest Area Pavilions, Office Buildings, and Maintenance Warehouses, to the Architect of Record and the Resident Engineer for review and approval.

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, submit to the Engineer of Record shop drawings and the applicable calculations for the design of special erection equipment, bracing, falsework, scaffolding, etc. The shop drawings and applicable calculations must be signed and sealed by the Specialty Engineer. Submit in accordance with the requirements of 5-1.4.1 through 5-1.4.3, as appropriate.

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 Specialty 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.

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, submit to the Engineer of Record shop drawings and applicable calculations of the falsework system including subsurface conditions and settlement estimates. The shop drawings and applicable calculations must be signed and sealed by the Specialty Engineer. Submit in accordance with the requirements of 5-1.4.1 through 5-1.4.3, 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, Girder and Column Temporary Bracing: The Contractor is solely responsible for ensuring stability of beams, girders and columns during all handling, storage, shipping and erection. Adequately brace beams, girders and columns 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. For all Erection Plans and Erection Manuals refer to Standard Plans, Index 102-600 for construction activities not permitted over traffic. For construction activities 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 applicable calculations will be signed and sealed by the Specialty Engineer. Submit in accordance with the requirements of 5-1.4.1 through 5-1.4.3, 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 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 Plans, clearly state so in the submittal.

Schedule the submission of shop drawings to allow for a 45 calendar day review period for all submittals associated with a category 2 bridge; tolling components identified in the current FDOT General Tolling Requirements (GTR) Part 3; and the tolling-related signing, DMS and ITS infrastructure. Schedule the submission of shop drawings to allow for a 25 calendar day review period for all other items. 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 Engineer of Shop Drawings 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.

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 shop and erection drawings, welding procedures, and other working plans, 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 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 Notice to Proceed, 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 Cost of Shop Drawings: Include the cost of shop drawings submittal in the Contract prices for the work requiring the 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 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 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. 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 by the Specialty Engineer to the Engineer at least four weeks prior to erection commencing. Include, as part of this submittal, signed and sealed calculations and details for any falsework, bracing or other connection 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 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 Request for Correction: 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 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.

5-1.7 Request for Information: Submit Requests for Information in writing to the Engineer to request clarification where a provision, detail or drawing in the Contract Documents seems to have more than one meaning, have an unclear meaning, or have conflicts between Plans and Specifications. A Request for Information is not considered a Notice of Claim. Notices of Claim must be submitted in accordance with 5-12.2.

5-1.8 Request for Modification: 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 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. Major modifications must be submitted as a Cost Savings Initiative Proposal.

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.

The Engineer's decision on the delineation between a minor and a major modification and the disposition 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. All parts of the Contract are complementary and describe and provide for a complete work. In addition to the work and materials specified in the Specifications as being included in any specific pay item, include in such pay items 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 under such pay item and not stipulated as being covered under other pay items.

In cases of discrepancy, the governing order of the documents is as follows:

1. Special Provisions.
 2. Technical Special Provisions.
 3. Plans.
 4. Standard Plans.
 5. Developmental Specifications.
 6. Supplemental Specifications.
 7. Standard Specifications.
- Computed dimensions govern over scaled dimensions.

5-3 Conformity of Work with Contract Documents.

Perform all work and furnish all materials in reasonably close conformity with the lines, grades, models, 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.

Do not take advantage of any apparent error or omission discovered in the Contract Documents, but immediately notify the Engineer in writing of such discovery. The Engineer will then make such corrections and interpretations as necessary to reflect the actual spirit and intent of the Contract Documents.

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.

5-7.1 Control Points Furnished by the Department: The Engineer will provide centerline control points (Begin Project, End Project, PIs, PTs, etc.) and benchmarks at appropriate intervals along the line of the project to facilitate the proper layout of the work. Normally, the Engineer will furnish only one benchmark for water crossings. Preserve all reference points and benchmarks that the Department furnishes.

As an exception to the above, for projects where the Plans do not show a centerline or other survey control line for construction of the work (e.g., resurfacing, safety modifications, etc.) the Engineer will provide only points marking the beginning and ending of the project, and all exceptions.

5-7.2 Furnishing of Stake Materials: Furnish all stakes, templates, and other materials necessary for establishing and maintaining the lines and grades necessary for control and construction of the work.

5-7.3 Layout of Work: Utilizing the control points furnished by the Department in accordance with 5-7.1, establish all horizontal and vertical controls necessary to construct the work in conformity to the Contract Documents. Perform all calculations required, and set all stakes needed such as grade stakes, offset stakes, reference point stakes, slope stakes, and other reference marks or points necessary to provide lines and grades for construction of all roadway, bridge, and miscellaneous items.

When performing utility construction as part of the project, establish all horizontal and vertical controls necessary to carry out such work.

5-7.4 Specific Staking Requirements: When performing new base construction as part of the project, set stakes to establish lines and grades for subgrade, base, curb, and related items at intervals along the line of the work. If Automated Machine Guidance is utilized, set stakes as needed. If Automated Machine Guidance is not utilized, set stakes no greater than 50 feet on tangents and 25 feet on curves. Set grade stakes at locations that the Engineer directs to facilitate checking of subgrade, base, and pavement elevations in crossovers, intersections, and irregular shaped areas.

For bridge construction stakes and other control, set references at sufficiently frequent intervals to ensure construction of all components of a structure in accordance with the lines and grades shown in the Plans.

For projects where the Plans do not show a centerline or other survey control line for construction of the work (resurfacing, safety modifications, etc.), provide only such stakes as necessary for horizontal and vertical control of work items.

For resurfacing and resurfacing-widening type projects, establish horizontal controls adequate to ensure that the asphalt mix added matches with the existing pavement. In tangent sections, set horizontal control points at 100-foot intervals by an instrument survey. In curve sections, set horizontal control points at 25-foot intervals by locating and referencing the centerline of the existing pavement.

Establish by an instrument survey, and mark on the surface of the finished pavement at 25-foot intervals, the points necessary for striping of the finished roadway. As an exception, for resurfacing and resurfacing/widening projects, establish these points in the same manner as used for horizontal control of paving operations. Mark the pavement with white paint. If performing striping, the Engineer may approve an alternate method for layout of striping provided that the Contractor achieves an alignment equal to or better than the alignment that would be achieved using an instrument survey.

For projects that include temporary or permanent striping of “no passing zones”, provide the location and length of these zones as shown in the Plans, except projects where the vertical or horizontal alignment is new or altered from preconstruction alignment. For projects that consist of new or altered vertical or horizontal alignment, the Department will provide the location and length of the “no passing zones” during construction. For these projects, submit written notification to the Engineer not less than 21 calendar days prior to beginning striping.

For all projects, set a station identification stake at each right-of-way line at 100-foot intervals and at all locations where a change in right-of-way width occurs. Mark each of these stakes with painted numerals, of a size readable from the roadway, corresponding to the project station at which it is located. As an exception to the above, for projects where Plans do

not show right-of-way lines, set station identification stakes at locations and intervals appropriate to the type of work being done. For resurfacing and resurfacing/widening projects, set station identification stakes at 200-foot intervals.

5-7.5 Personnel, Equipment, and Record Requirements: Employ only competent personnel and use only suitable equipment in performing layout work. Do not engage the services of any person or persons in the employ of the Department for performance of layout work.

Keep adequate field notes and records while performing as layout work. Make these field notes and records available for the Engineer's review as the work progresses, and submit to the Engineer at the time of completion of the project. The Engineer's inspection, checking, or acceptance of the Contractor's field notes or layout work does not relieve the Contractor of his responsibility to achieve the lines, grades, and dimensions shown in the Contract Documents.

Prior to final acceptance of the project, mark, in a permanent manner on the surface of the completed work, all horizontal control points originally furnished by the Department.

5-7.6 Global Navigation Satellite Systems (GNSS) Work Plan: If used, submit a comprehensive written GNSS Work Plan to the Engineer for Department review and acceptance at the preconstruction conference or at least 30 days before starting work using GNSS. Update the plan as necessary during construction and notify the Department of all changes. The GNSS Work Plan shall describe how GNSS enabled Automated Machine Guidance technology will be integrated into other technologies employed on the project. At a minimum, the GNSS Work Plan will include the following:

1. Designate which portions of the Contract will be done using GNSS enabled Automated Machine Guidance and which portions will be constructed using conventional survey methodology.
2. Describe the manufacturer, model, and software version of the GNSS equipment.
3. Provide information on the qualifications of Contractor staff. Include formal training and field experience. Designate a single staff person as the primary contact for GNSS technology issues.
4. Describe how project control will be established. Include a list and map showing control points enveloping the site.
5. Describe site calibration procedures. Include a map of the control points used for site calibration and control points used to validate the site calibration. Describe the frequency of site calibration and how site calibration will be documented. At a minimum, verify the site calibration twice daily.
6. Describe the Contractor's quality control procedures for verifying mechanical calibration and maintenance of construction and guidance equipment. Include the frequency and type of verification performed to ensure the constructed grades conform to the Contract Documents.

Keep on site and provide upon request, a copy of the project's most up to date GNSS Work Plan at the project site.

5-7.7 Payment: Include the cost of performing layout work as described above in the Contract unit prices for the various items of work that require layout.

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 Section 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, either 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 to a claim in writing 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 pre-judgment 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 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.

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.shtml>. 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 (QPL) appear in the Contract Documents, they will be synonymous with Approved Product List (APL).

Manufacturers seeking to have a product evaluated for the APL must submit an application, available on the Department's website at the following URL:

<https://www.fdot.gov/programmanagement/ProductEvaluation/Default.shtm>. Applications must include the following documentation:

1. Supporting documentation as required by the Specifications, Standard Plans, and APL approval process. A sample may be requested to verify the product, in accordance with the specifications.
2. A photograph displaying the product as shipped with packaging.
3. A list displaying all components within the shipped packaging, if applicable.
4. Installation instructions and materials, if applicable.
5. Product packaging or product labels as required by the Specifications.
6. Construction material percentages and country source of materials.
7. Last two manufacturing steps and country of manufacture.
8. Manufacturer name and material designation (product name, product model/part number/style number, etc.) must be as identified on the product, product packaging, and product labels.
9. Applications must be signed by a legally responsible person employed by the manufacturer of the product.

Required test reports must be conducted by an independent laboratory or other independent testing facility. Required drawings and calculations must be signed and sealed by a Professional Engineer licensed in the State of Florida.

Products that have successfully completed the Department's evaluation process are eligible for inclusion 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, raw material, or manufacturing process modifications. Modification or alteration requests must be submitted along with supporting documentation that the product continues to meet Section 6, the Specification, or Standard Plans requirements. A product sample and additional product testing and documentation 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 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.

6-2 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 an FM 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 addenda 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. Allow for a 45 calendar day review period for all EARs associated with a category 2 bridge; tolling components identified in the current FDOT General Tolling Requirements (GTR) Part 3; and the tolling-related signing, DMS and ITS infrastructure. Allow for a 25 calendar day review period for all other items. 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: Comply with 2 CFR 184 and 2 CFR 200.322, which includes the Buy America Sourcing Preferences of the Build America, Buy America Act (BABA). Domestic compliance for all affected products will be listed on the APL.

6-5.2.1 Steel and Iron: 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 manufacturing process, it becomes foreign source material. When using steel or iron materials 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.

6-5.2.2 Manufactured Products: Use Manufactured Products that are consumed in, incorporated into, or affixed to an infrastructure project that are manufactured in the United States, in accordance with BABA requirements and applicable waivers.

6-5.2.3 Construction Materials: Use non-ferrous metals, plastic and polymer-based products, glass, lumber, and drywall articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project that are manufactured in the United States, in accordance with BABA requirements.

6-5.2.4 Exemptions to Build America, Buy America: Temporary devices, equipment, and other items removed at or before the completion of the project are exempt from BABA funding eligibility requirements. Aggregates, cementitious materials, and aggregate binding agents or additives are exempted from BABA funding eligibility requirements.

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 Part I, Chapter 489, of the Florida Statutes, regardless of exemptions allowed by subsection 489.103, 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 current registrations or certifications issued by the Florida Construction Industry Licensing Board in accordance with Chapter 489, 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/deo11246.pdf>. 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.

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
3029 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 in 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_2.

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.

7-1.5 Occupational Safety and Health Requirements: The Contractor shall 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, <https://www.npirs.org/state/>, approved by 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, as incorporated by Special Provision expanding this Subarticle, if any, 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.

The Department will also acquire any modifications or revisions to an original permit incorporated by Special Provision to this Subarticle when the Contractor requires such

modifications or revisions to complete the construction operations specified in the Plans or Special Provisions 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.

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 the Department to obtain a permit. For such dredge/fill /construction specified in the Plans to be accomplished within the limits of the project, or for any dredge/fill/construction within the limits of Department-furnished borrow areas, the Department will procure the necessary permits prior to advertising for bids.

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 must be PDF files in the same scale as the Plans, formatted on 11 inch by 17 inch sheets, and 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 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 these Specifications or as shown in the Plans, the Department will furnish all rights-of-way necessary for the proper completion of the work at no expense to the Contractor.

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.

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 the storage of equipment and materials for the Project or production of materials or products for the Project.

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 4-4 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.

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 90,000 lbs crossing bridge structures.
 - b. Less than 90,000 lbs 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.

When working on moveable bridges, requests 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, 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.

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 Existing 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 in the Plans, Department owned underground facilities will not be located by the Department nor through notification to "Sunshine 811". Locate all fiber optic cables. Provide a fiber optic cable locator in accordance with Section 633.

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 in 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 Plans 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.

7-11.4.2 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:

<https://www.norfolksouthern.com/en/rail-development-property/public-projects/contacts>.

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 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 for removal, temporary removal, relocation, de-energizing, deactivation or adjustment with the utility facilities owner to protect against damage that might result in expense, loss, disruption of service, or other undue inconvenience to the public or to the owners. The Contractor is solely and directly responsible to the owners and operators of such properties for all damages, injuries, expenses, losses, inconveniences, or delays caused by the Contractor's operations.

Do not request utility removal, temporary removal, relocation, de-energizing, deactivation, or adjustment when work can be accomplished within the utility work schedules. In the event that removal, temporary removal, relocation, de-energizing, deactivation, or adjustment of a utility or a particular sequence of timing in the relocation of a utility is necessary and has not been addressed in a utility work schedule, the Engineer will determine the necessity for any such utility work. 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: Cooperate with the owners of all underground or overhead utility lines in their removal and rearrangement operations 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.

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. The Contractor shall repair all damage to the relocated utilities resulting from his operations at no expense to the Department. The requirements of 7-11.1 and 7-11.5.2 outline the Contractor's responsibility for protecting utility facilities. The Department will include in the Contract the utility authorities who are scheduled to perform utility work on the project.

7-11.5.4 Weekly Meetings: Conduct weekly meetings on the job site with all the affected utility companies and the Engineer in attendance to coordinate project construction and utility relocation. Submit a list of all attendees one week in advance to the Engineer for approval.

Submit the approved Work Progress Schedule and Work Plan for the project, as specified in 8-3.2, to document the schedule and plan for road construction and utility adjustments.

When utility relocations no longer affect construction activities, the Contractor may discontinue the meetings with the Engineer's approval.

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.

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. At the preconstruction conference, 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 Marine General Liability Insurance: When the Contract involves work on bridges over navigable waters, carry Marine General Liability insurance providing continuous coverage for third-party personal injury and property damage caused by vessels used by the contractor in the performance of the work. 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 \$4,000,000 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.

7-14 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 known third parties unless the Contractor has contacted law enforcement within 14 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 guardrail, guardrail transitions and end treatments, and crash cushions 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 guardrail, guardrail transitions and end treatments, and crash cushions installed as part of the work caused by unknown third parties will be reimbursed at 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 guardrail, guardrail transitions and end treatments, and crash cushions installed as part of the work 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 all projects that include Federal-aid participation, the Special Provisions contain requirements with regard to payment of predetermined minimum wages. Predetermined Wage Rate Decisions (U.S. Department of Labor provided Wage Rate Tables) exist for Heavy, Highway, and Building Construction Projects.

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 are 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 Compliance 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% 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 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 Section, 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 Section 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 Section. 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 Section. 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 project(s) 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 when 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,

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 they 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.

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 Submission of Contract Schedule: Within 21 calendar days after Contract award or at the preconstruction conference, whichever is earlier, submit to the Engineer a Contract Schedule for the project. The Engineer will review and respond to the Contractor within 15 calendar days of receipt.

Provide a Contract Schedule that shows the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the project within the Contract Time. Show the order and interdependence of activities and the sequence for accomplishing the work. Describe all activities in sufficient detail so that the Engineer can readily identify the work and measure the progress on of each activity. Show each activity with a beginning work date, a duration, and a monetary value. Include activities for procurement fabrication, and delivery of materials, plant, and equipment, and review time for shop drawings and submittals. Include milestone activities when milestones are required by the Contract Documents. In a project with more than one phase, adequately identify each phase and its completion date, and do not allow activities to span more than one phase.

Conduct sufficient liaison and provide sufficient information to indicate coordination activities with utility owners that have facilities within the limits of construction have been resolved. Incorporate in the Contract Schedule any utility work schedules included in the Contract Documents unless the utility company and the Department mutually agree to changes to the utility schedules shown in the Contract.

Submit a working plan with the Contract Schedule, consisting of a concise written description of the construction plan.

The Engineer will return inadequate Contract Schedules to the Contractor for corrections. Resubmit a corrected schedule within 15 calendar days from the date of the Engineer's return transmittal.

Submit an updated Contract Schedule, for Engineer's acceptance, if there is a significant change in the planned order or duration of an activity. The Engineer will review the corrected schedule and respond within 7 calendar days of receipt.

By acceptance of the Contract Schedule, the Engineer does not endorse or otherwise certify the validity or accuracy of the activity durations or sequencing of activities. The Engineer will use the accepted schedule as the baseline against which to measure the progress.

If the Contractor fails to finalize either the initial or a revised Contract Schedule in the time specified, the Engineer may withhold all Contract payments until the Engineer accepts the schedule.

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.

8-3.3 Beginning Work: Notify the Engineer not less than five days in advance of the planned start day of work. Upon the receipt of such notice, the Engineer may give the Contractor Notice to Proceed and may designate the point or points to start the work. In the Notice to Proceed, the Engineer may waive the five-day advance notice and authorize the Contractor to begin immediately. Notify the Engineer in writing at least two days in advance of the starting date of important features of the work. Do not commence work under the Contract until after the Department has issued the Notice to Proceed. The Department will issue the Notice to Proceed within 20 calendar days, excluding Saturdays, Sundays and Holidays, after execution of the Contract.

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: Immediately after awarding the Contract but before the Contractor begins work, 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.

8-4 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.

Submit a lighting plan at the Preconstruction Conference for review and acceptance by the Engineer. Submit the plan as a PDF file, in the same scale as the Plans, and formatted on 11 inch by 17 inch sheets. Do not start night work prior to the Engineer's acceptance of the lighting plan.

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.

8-4.2 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 on adjacent property, or for protection of pedestrians who are likely to gain access to the project from adjacent property.

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 work necessary to dispose of contaminated material, and the Contract does not include pay items for disposal, 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.

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.

It is prohibited as a conflict of interest for a Contractor to subcontract with a Consultant to perform Contractor Quality Control when the Consultant is under contract with the Department to perform work on any project described in the Contractor's Contract with the Department. Prior to approving a Consultant for Contractor Quality Control, the Contractor shall submit to the Department a Certificate from the proposed Consultant certifying that no conflict of interest exists.

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 calendar 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 Day; Thanksgiving Day; the Friday, Saturday and Sunday immediately following Thanksgiving Day; December 24 through January 2, inclusive; and Special Events noted in the Contract Documents. Contract Time will be charged during these Holiday and Special Event periods. Contract Time will be adjusted in accordance with 8-7.3.2. The Contractor is not entitled to any additional compensation beyond any allowed 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 and Special Event 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.

The Department considers in the computation of the Contract Time the effect that utility relocation and adjustments have on job progress and the scheduling of construction operations required in order to adequately maintain traffic, as detailed in the Plans or as scheduled in the Special Provisions.

8-7.2 Date of Beginning of Contract Time: The date on which Contract Time begins is either the date on which the Contractor actually begins work, or the date for beginning the charging of Contract Time as set forth in the proposal; whichever is earlier.

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 overruns in original Contract items, adds new work items, or provides 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.

When the Department grants a time extension due to rains or other inclement weather, the Contractor shall submit any objection to the additional time in writing within ten calendar days from receipt of written notice from the Engineer. Failure to submit a written appeal within ten calendar days from receipt of the written notice shall constitute a waiver of any and all rights to appeal the Department's decision at a later time.

No additional compensation will be made for delays caused by the effects of inclement weather.

The Department will 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 effect 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.

The Department will consider requests for time extension due to delay in work operations within the limits of the railroad right-of-way, the adjoining 15 feet, or determined by the Railroad or Department to be able to potentially foul the tracks regardless of distance from railroad right-of-way on job progress as the basis for granting a time extension only if all the following criteria are met:

1. Delays are due to a lack of availability of Railroad protective services as required by 7-11.4.

2. Work within the limits of the railroad right-of-way or the adjoining 15 feet actually impacted progress toward completion of controlling work items.

3. The Contractor took all reasonable measures to minimize the effect of work operations within the limits of the railroad right-of-way or the adjoining 15 feet on job progress, including compliance with all provisions of 7-11.4 and 5-12, and cooperative scheduling of the Contractor's operations.

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. 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, Room 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 authority 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
\$299,999 and under.....	\$904
\$300,000 but less than \$2,000,000.....	\$1,685
\$2,000,000 but less than \$5,000,000.....	\$2,667
\$5,000,000 but less than \$10,000,000.....	\$3,813
\$10,000,000 but less than \$20,000,000.....	\$5,021
\$20,000,000 but less than \$40,000,000.....	\$7,442
\$40,000,000 and over.....	\$10,224 plus 0.00005 of any amount over \$40 million (Round to nearest whole dollar)

The Engineer may approve adjustments to the liquidated damages amounts in accordance with the Construction Project Administration Manual (CPAM) provided all contract work is complete.

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 Recovery of 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.

SECTION 9 MEASUREMENT AND PAYMENT

9-1 Measurement of Quantities.

9-1.1 Measurement Standards: The Engineer will measure all work completed under the Contract in accordance with the United States Standard Measures.

9-1.2 Method of Measurements: The Engineer will take all measurements horizontally or vertically.

9-1.3 Determination of Pay Areas:

9-1.3.1 Final Calculation: When measuring items paid for on the basis of area of finished work, where the pay quantity is designated to be determined by calculation, the Engineer will use lengths and widths in the calculations based on the station to station dimensions shown in the Plans; the station to station dimensions actually constructed within the limits designated by the Engineer; or the final dimensions measured along the surface of the completed work within the neat lines shown in the Plans or designated by the Engineer. The Engineer will use the method or combination of methods of measurement that reflect, with reasonable accuracy, the actual surface area of the finished work as the Engineer determines.

9-1.3.2 Plan Quantity: When measuring items paid for on the basis of area of finished work, where the pay quantity is designated to be the plan quantity, the Engineer will determine the final pay quantity based on the plan quantity subject to the provisions of 9-3.2. Generally, the Engineer will calculate the plan quantity using lengths based on station to station dimensions and widths based on neat lines shown in the Plans.

9-1.4 Construction Outside Authorized Limits: The Engineer will not pay for surfaces constructed over a greater area than authorized, or for material that the Contractor has moved from outside of slope stakes and lines shown in the Plans, except where the Engineer provides written instruction for the Contractor to perform such work.

9-1.5 Truck Requirements: Provide all trucks with numbers and certify that all trucks used have a manufacturer's certification or permanent decal showing the truck capacity rounded to the nearest tenth of a cubic yard placed on both sides of the truck. This capacity will include the truck body only and any side boards added will not be included in the certified truck body capacity. Ensure the lettering and numbers are legible for identification purposes at all times.

9-1.6 Ladders and Instrument Stands for Bridge Projects: On bridge projects, in order to facilitate necessary measurements, provide substantial ladders to the tops of piers and bents, and place and move such ladders as the Engineer directs.

For bridge projects crossing water or marshy areas, supply fixed stands for instrument mounting and measurements, in accordance with the details stipulated in the Specifications for the project.

9-2 Scope of Payments.

9-2.1 Items Included in Payment: Accept the compensation as provided in the Contract 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.

For any item of work contained in the proposal, except as might be specifically provided otherwise in the basis of payment clause for the item, include in the Contract unit price (or lump sum price) for the pay item or items the cost of all labor, equipment, materials, tools and incidentals required for the complete item of work, including all requirements of the Section specifying such item of work, except as specifically excluded from such payments.

9-2.1.1 Fuel: The Department will, in the Contract Documents, provide an estimated quantity for fuel requirements for diesel to cover the Work specified in the Contract. Price adjustments will be made only for the amount of diesel fuel estimated by the Department as required to complete the Contract. The requirement of fuel for each pay item is estimated by multiplying the Department's standard fuel factor for that pay item by the quantity of that pay item. 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%.

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 will be available on the Construction Office website before the 15th of each month, at the following URL:

<https://www.fdot.gov/construction/fuel-bit/fuel-bit.shtm>.

Payment will be based on the quantities shown on the progress estimate on all items for which established standard fuel factors are on a file maintained by the Department.

Payment on progress estimates will be adjusted to reflect adjustments in the prices for diesel 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.

Payment will be made on the current progress estimate to reflect the index difference at the time Work was performed.

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, Driveway Asphalt Base, Asphalt Treated Permeable Base, Superpave Asphaltic Concrete, Miscellaneous Asphalt Pavement, Asphalt Concrete Friction Course, and Asphalt Membrane Interlayer pay items. Submit this certification to the Engineer no later than Twelve O'clock noon Monday after the estimate cut-off or as directed by the Engineer, based on the quantity of asphalt produced and accepted on the roadway per Contract. Ensure the certification includes the Contract Number, Financial Project Identification (FPID) Number, Certification Date and Number, the period the certification represents and the tons produced for each asphalt pay item.

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 Construction Office website before the 15th day 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 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.

Payment will be made on the current progress estimate to reflect the index difference at the time work was performed.

For asphalt concrete items payable by the ton or square yard, the number of gallons will be determined assuming a mix design with 6.25% liquid asphalt weighing 8.58 pounds per gallon.

For asphalt concrete items payable by the cubic yard, the number of gallons will be determined assuming a mix design with 3% liquid asphalt weighing 8.58 pounds per gallon.

9-2.2 Non-Duplication of Payment: In cases where the basis of payment clause in these Specifications relating to any unit price in the bid schedule requires that the unit price cover and be considered compensation for certain work or material essential to the item, the Department

will not measure or pay for this same work or material under any other pay item that may appear elsewhere in these Specifications.

9-3 Compensation for Altered Quantities.

9-3.1 General: When alteration in Plans or quantities of work not requiring a supplemental agreement as hereinbefore provided for are offered and performed, the Contractor shall accept payment in full at Contract unit bid prices for the actual quantities of work done, and no allowance will be made for increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor, resulting either directly from such alterations, or indirectly from unbalanced allocation among the Contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

Compensation for alterations in Plans or quantities of work requiring supplemental agreements shall be stipulated in such agreement, except when the Contractor proceeds with the work without change of price being agreed upon, the Contractor shall be paid for such increased or decreased quantities at the Contract unit prices bid in the Proposal for the items of work. If no Contract unit price is provided in the Contract, and the parties cannot agree as to a price for the work, the Contractor agrees to do the work in accordance with 4-3.2.

9-3.2 Payment Based on Plan Quantity:

9-3.2.1 Error in Plan Quantity: As used in this Article, the term “substantial error” is defined as the smaller of (1) or (2) below:

1. a difference between the original plan quantity and final quantity of more than 5%,
2. a change in quantity which causes a change in the amount payable of more than \$5,000.

On multiple job Contracts, changes made to an individual pay item due to substantial errors will be based on the entire Contract quantity for that pay item.

Where the pay quantity for any item is designated to be the original plan quantity, the Department will revise such quantity only in the event that the Department determines it is in substantial error. In general, the Department will determine such revisions by final measurement, plan calculations, or both, as additions to or deductions from plan quantities.

In the event that either the Department or the Contractor contends that the plan quantity for any item is in error and additional or less compensation is thereby due, the claimant shall submit, at their own expense, evidence of such in the form of acceptable and verifiable measurements or calculations. The Department will not revise the plan quantity solely on the basis of a particular method of construction that the Contractor selects. For earthwork items, the claimant must note any differences in the existing surfaces from that shown in the Plans that would result in a substantial error to the plan quantity, and must be properly documented by appropriate verifiable level notes, acceptable to both the Contractor and the Department, prior to disturbance of the existing surface by construction operations. The claimant shall support any claim based upon a substantial error for differences in the existing surface by documentation as provided above.

9-3.2.2 Authorized Changes in Limits of Work: Where the Department designates the pay quantity for any item to be the original plan quantity and authorizes a plan change which results in an increase or decrease in the quantity of that item, the Department will revise the plan quantity accordingly. In general, the Department will determine such revisions by final measurement, plan calculations or both.

9-3.2.3 Specified Adjustments to Pay Quantities: Do not apply the limitations specified in 9-3.2.1 and 9-3.2.2 to the following:

1. Where these Specifications or Special Provisions provide that the Department determines the pay quantity for an item on the basis of area of finished work adjusted in accordance with the ratio of measured thickness to nominal thickness.
2. Where these Specifications provide for a deduction due to test results falling outside of the allowable specified tolerances.
3. To payment for extra length fence posts, as specified in 550-6.3.

9-3.3 Lump Sum Quantities:

9-3.3.1 Error in Lump Sum Quantity: Where the Department designates the pay quantity for an item to be a lump sum and the Plans show an estimated quantity, the Department will adjust the lump sum compensation only in the event that either the Contractor submits satisfactory evidence or the Department determines and furnishes satisfactory evidence that the lump sum quantity shown is in substantial error as defined in 9-3.2.1.

9-3.3.2 Authorized Changes in Work: Where the Department designates the pay quantity for an item to be a lump sum and the Plans show an estimated quantity, the Department will adjust compensation for that item proportionately when an authorized plan change is made which results in an increase or decrease in the quantity of that item. When the Plans do not show an estimated plan quantity or the applicable specifications do not provide adjustments for contingencies, the Department will compensate for any authorized plan change resulting in an increase or decrease in the cost of acceptably completing the item by establishing a new unit price through a supplemental agreement as provided in 4-3.2.

9-3.4 Deviation from Plan Dimensions: If the Contractor fails to construct any item to Plan or to authorized dimensions within the specified tolerances, the Engineer, at his discretion will: require the Contractor to reconstruct the work to acceptable tolerances at no additional cost to the Department; accept the work and provide the Contractor no pay; or accept the work and provide the Contractor a reduced final pay quantity or reduced unit price. The Department will not make reductions to final pay quantities for those items designated to be paid on the basis of original plan quantity or a lump sum quantity under the provisions of this Article unless such reduction results in an aggregate monetary change per item of more than \$100, except that for earthwork items, the aggregate change must exceed \$5,000 or 5% of the original plan quantity, whichever is smaller. If, in the opinion of the Engineer, the Contractor has made a deliberate attempt to take advantage of the construction tolerances as defined in 120-12.1 to increase borrow excavation in fill sections or to decrease the required volume of roadway or lateral ditch excavation or embankment, the Department will take appropriate measurements and will apply reductions in pay quantities. The Department will not use the construction tolerance, as defined in 120-12.1, as a pay tolerance. The construction tolerance is not to be construed as defining a revised authorized template.

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 therein, by making 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 the work.

9-5 Partial Payments.

9-5.1 General: The Engineer will make partial payments on monthly estimates based on the amount of work that the Contractor completes during the month (including delivery of certain materials, as specified herein below). 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 employment opportunity for minorities and females in accordance with the required contract provisions for Federal Aid Construction Contracts, 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 up to the unit price in the Contract.
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 payments for structural steel, ITS and signal components, and precast prestressed items will not exceed 85% of the bid price for the item. Partial payments for all other items will not exceed 75% of the bid price of the item in which the material is to be used.
3. 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.

9-8.1 Acceptance and Final Payment Documents: 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 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 estoppel, 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 items 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.

TECHNICAL SPECIFICATION ERRATA SHEET

The technical specifications listed below are modified from the standard Florida Department of Transportation Specifications for Road and Bridge Construction, FY 2025-2026. All provisions of the *Standard Specifications for Road and Bridge Construction* that are not amended or supplemented remain in full force and effect. The *Standard Specifications for Road and Bridge Construction* are available as an eBook from the Florida Department of Transportation website: <http://www.fdot.gov/programmanagement/Implemented/SpecBooks/default.shtm>.

SECTION 104 – PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

Remove 104-9 Method of Measurement and replace with the following in its entirety:

“109-9 Method of Measurement.

109-9.1 No measurement shall be made for items or materials specified in this Section.”

Remove 104-10 Basis of Payment and replace with the following in its entirety:

“104-10 Basis of Payment.

104-10.1 Prices and payments shall be full compensation for all work specified in this Section and as shown on the Plans, including construction replacement, and routine maintenance of temporary erosion control devices. Price also includes any adjustments required to erosion control measures and devices to facilitate construction phasing. Any costs resulting from compliance with the requirements of this Section shall be included in the lump sum price Temporary Erosion Prevention and Control.

In case of repeated failure on the part of the Contractor to control erosion, pollution, or siltation, the Engineer reserves the right to employ outside assistance or to use the Department’s own forces to provide the necessary corrective measures. Any such costs incurred including engineering costs, will be charged to the Contractor and appropriate deductions made from the monthly progress estimate.

Pay will be made under:

Item 104-1 Temporary Erosion Prevention and Control – lump sum”

SECTION 110 – CLEARING AND GRUBBING

Remove 110-9.2 Burning Debris and replace with the following in its entirety:

“110-9.2 Burning Debris: Burning debris on Owner property shall not be permitted unless authorized by the Owner. Burning debris off Owner property shall be allowed in accordance with the applicable Federal, State and Local rules and regulations. Perform all burning at locations where trees and shrubs adjacent to the cleared area will not be harmed.”

Remove 110-11 and replace with the following in its entirety:

“110-11 Method of Measurement.

110-11.1 Stripping and Stockpiling: This item shall be measured per square yard of land stripped and stockpiled. This item shall include, but is not limited to topsoil stripping, stockpiling in contractor staging area if required, shrub removal, stump and root removal, and miscellaneous debris removal. All labor, materials, and incidental costs required to complete this item shall be included in the contract price.

110-11.2 Full Depth Pavement Removal: This item shall be measured per square yard of full-depth pavement removal. This item shall include removal of pavement and base course.

110-11.3 Remove Stormwater Pipe: This item shall be measured by the linear foot of existing pipe removed. Any earthwork required for removal and restoration shall be considered incidental to the item. It will include proper disposal off-site.

Remove 110-12 and replace with the following in its entirety:

“110-12 Basis of Payment.

Price and payment shall be full compensation for all labor, materials, and incidentals, such as hauling and furnishing of equipment, required to complete the work as defined in this specification.

Payment will be made under:

- 110-1 Stripping and Stockpiling – per square yard
- 110-2 Full-Depth Pavement Removal – per square yard
- 110-3 Remove Stormwater Pipe – per linear foot”

SECTION 120- EXCAVATION AND EMBANKMENT

Remove 120-13 Method of Measurement and replace with the following in its entirety:

“120-13 Method of Measurement.

120-13.1 General: The quantity of Regular Excavation and Borrow Excavation to be paid for under this project is based on the project plan contours and grades and no allowance has been made for material removed, compacted or altered under any other work item. Measurement shall not include the quantity of material placed without authorization beyond normal slopes lines, or the quantity of material used for purposes other than those directed. The Contractor is required to account, when determining project unit bid prices, that some of the existing excavated material will be “lost” during construction or may be unsuitable and will not be available for embankment construction. No allowance for material lost in stripping and stockpiling, unsuitable material not able to be used as embankment, shrinkage of material or other reduction in material quantity has been made. Unless the Contractor makes a detailed pre-construction survey before any stripping and stockpiling or other work begins, and a post-construction survey once all work is completed and supply them to the Engineer, only the plan quantities for regular excavation and offsite borrow will be paid

120-13.2 Regular Excavation: The pay quantity will be the plan quantity compacted in-place provided that the excavation and embankment formation was accomplished in substantial compliance with the plan dimensions and subject to the provisions of 120-9. Regular excavation includes but is not limited to hand digging, off-site disposal of unsuitable material as required, dewatering, hauling, stockpiling, soil shrinkage and swelling, rehandling, formation of embankments and compaction.

120-13.3 Borrow Excavation: The pay quantity will be the plan quantity of the Borrow Excavation material compacted in-place provided that the embankment formation was accomplished in substantial compliance with the plan dimensions. Borrow Excavation includes but is not limited to borrow excavation, furnishing of borrow source, hauling, stockpiling, soil shrinkage and swelling, rehandling, formation of embankments and compaction.

120-13.4 Embankment: The formation of embankment is included in the price for regular excavation and borrow excavation and shall not be measured.”

Remove 120-14 Basis of Payment and replace with the following in its entirety:

“120-14 Basis of Payment.

120-14.1 General: Prices and payments for the various work items included in this Section will be full compensation for all work described herein, including excavating, dredging, pumping, hauling, placing and compacting; dressing the surface of the earthwork; maintaining and protecting the complete earthwork. The Department will not allow extra compensation for any reworking of materials.

120-14.2 Excavation: The quantity of Regular Excavation will be paid for at its respective Contract unit price per cubic yard. Prices and payments will be full compensation for all work described under this Section. Such prices and payments will include hauling; placing embankment; compacting; any reworking that may be necessary; topsoil dressing; and the removal and disposal of unsuitable material.

120-14.3 Borrow Excavation: The quantity of material required for formation of embankments in excess of material supplied by Regular Excavation shall be paid for under Borrow Excavation. Price and payment will include the cost of furnishing the borrow area, any necessary clearing and grubbing thereof, the costs incurred in complying with the provisions of 120-6, excavating the material, hauling, placing embankment, compacting, any reworking that may be necessary, and topsoil dressing.

120-14.5 Payment Items. Payment will be made under:

Item 120-1 Regular Excavation – cubic yard

Item 120-2 Borrow Excavation – cubic yard”

SECTION 285 – OPTIONAL BASE COURSE

Remove 285-8 Method of Measurement and replace with the following in its entirety:

“285-8 Method of Measurement. The quantity of lime rock base course shall be the number of square yards of base material placed, compacted, bonded, and accepted in the completed base course. The quantity of base course material shall be measured in final position by the Contractor’s QC technician.

285-9 Basis of Payment. Payment shall be made at the contract unit price per square yards for lime rock base course. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

The cost of removing cracks and checks including the labor, and the additional lime rock necessary for crack elimination, will not be paid for separately but shall be included in the contract price per square yard for lime rock base course.

Payment will be made under:

Item 285-1 Limerock Base Course, 5” Thick – square yard”

SECTION 327 – MILLING OF EXISTING ASPHALT PAVEMENT

Remove 327-6 Basis of Payment and replace with the following in its entirety:

“327-6 Basis of Payment. Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material.

Payment will be made under:

Item 327-1 Asphalt Pavement Milling, Nominal 1.5” Depth – square yard”

SECTION 334 – SUPERPAVE ASPHALT CONCRETE

Remove “Department” and Replace with “Owner” throughout document.

Remove Section 334-2.2 and Replace with:

“334-2.2 Superpave Asphalt Binder: The asphalt binder grade shall be PG 76-22. With the approval of the Engineer, the Contractor may substitute the binder mixture provided it meets the traffic level and mixture type requirements of the project. The Contractor must formally submit this request in writing.”

Remove Section 334-8.4 and Replace with:

“334-8.4 Payment: Payment will be made under:

Item 334-1 Superpave Asphaltic Concrete, Type SP-12.5, Traffic C – per ton”

SECTION 425 – INLETS, MANHOLES, AND JUNCTION BOXES

Remove Section 425-9.3 Payment Items and Replace with:

“425-9.3 Payment Items: Payment will be made under:

Item 425-1	Type C Ditch Bottom Inlet – per each
Item 425-2	Manhole with Type J 6' X 4' Bottom – per each

SECTION 430 – PIPE CULVERTS

Remove Section 430-12.12 Payment Items and Replace with:

“430-12.12 Payment Items: Payment will be made under:

Item 430-1	Reinforced Concrete Pipe, 15” – per linear foot
Item 430-2	Reinforced Concrete Pipe, 18” – per linear foot
Item 430-3	Reinforced Concrete Pipe, 24” – per linear foot
Item 430-4	15” Concrete Straight Endwall – per each
Item 430-5	Dual 15” Concrete Straight Endwall – per each
Item 430-6	18” Mitered End Section – per each
Item 430-7	Dual 24” Mitered End Section – per each”

SECTION 530 – REVETMENT SYSTEMS

Remove 530-4 Method of Measurement and Replace with:

“530-4 Method of Measurement.

530-4.1 Rip Rap: This item shall be measured per square yard area of rip rap placed, completed, and accepted.”

Remove 530-5 Basis of Payment and Replace with:

“530-5 Basis of Payment

530-5.1 Rip Rap: Price and payment will be full compensation for all work specified in this Section, including all materials, labor, hauling, excavation, and backfilling. Include the cost of dressing and shaping the existing fills for placing riprap.

530-5.2 Payment Items. Payment will be made under:

Item 530-1 Riprap – per square yard.”

SECTION 570 – PERFORMANCE TURF

Remove 570-8 Method of Measurement and replace with the following in its entirety:

“570-8 Method of Measurement.

This item shall be measured per square yard area of sod placed, completed, and accepted.

Remove 570-9 Basis of Payment and replace with the following in its entirety:

“570-9 Basis of Payment.

Prices and payments will be full compensation for all work and materials specified in this Section.

Payment will be made under:

Item 570-1 Sodding – square yard”

SECTION 700 – HIGHWAY SIGNING

Remove 700-10.14 Payment Items and Replace with:

“700-10.14 Payment Items: Payment will be made under:

Item 700-1	Remove and Relocate Ground Sign Assembly – per each
Item 700-2	Single Column Ground Sign Assembly – per each”

SECTION 711 – THERMOPLASTIC PAVEMENT MARKINGS

Remove 710-9 Method of Measurement and replace with the following in its entirety:

“710-9 Method of Measurement.

Pavement markings shall be measured by the square foot of markings applied, completed, and accepted in place. Pavement markings include reflective media as outlined in this specification.”

Remove 710-10 Basis of Payment and replace with the following in its entirety:

“710-10 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item 711-1 Thermoplastic Pavement Markings (White, Yellow) – square foot”

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DIVISION II

Construction Details

GENERAL CONSTRUCTION OPERATIONS

SECTION 100

CONSTRUCTION EQUIPMENT-GENERAL REQUIREMENTS

100-1 General.

Unless restricted to a specific type by the Contract Documents or the Engineer, the Contractor may perform the work using equipment, tools, machinery, etc., of his own choosing. Provide a unique alphanumeric identification number on all equipment (other than small tools) used on the project. This number shall be a minimum of 2 inches high and appear on both sides of the equipment. Place the number in such a manner so as to contrast sharply in color with the background on which it is placed. Ensure that the number, which may be painted or otherwise permanently affixed to the equipment, is clearly legible at all times. Upon submittal of Notice of Intent to Claim or Preliminary Time Extension Request, submit in accordance with 5-12.2, a list showing all equipment (other than small tools) for which the Contractor may request compensation, its identification number with serial number, manufacturer, year manufactured, model and description. Update this list to account for equipment moving to or from the project and submit certification weekly, by close of business on Friday, the equipment, its unique number and the dates and hours that the equipment was assigned to this project for the proceeding week. No compensation will be made for any equipment used during any time period when the said equipment is not listed in the weekly certification. Failure to submit this information in the time specified may result in the Engineer withholding all Contract Payments until receipt of such information. Note that facilities to be constructed under the Contract are adequate to support only their design loads in their completed construction stage. If the Contractor's equipment or procedures during construction damage any part of the facility, the Contractor will replace or repair it as directed by the Engineer at no expense to the Department.

100-2 Equipment Condition and Approval.

100-2.1 Approval: Provide on site and in due time prior to its need, in working condition, all equipment to be used in construction of the project, subject to approval or disapproval by the Engineer. Use only factory recommended exhaust mufflers on internal combustion engines. Remove from the job, alter, or repair equipment which is disapproved by the Engineer. Ensure that the number of units, the sizes, etc., of the equipment on hand are adequate to complete the work within the Contract Time.

100-2.2 Maintenance: Consistent with public interest, safety, and good practice, maintain all equipment, tools, and machinery used in a satisfactory working condition throughout the period they are on the job site. Also, provide adequate equipment maintenance procedures to promote continuous satisfactory working condition and minimize noise pollution caused by construction equipment.

100-2.3 Stationary Equipment: Screen all stationary equipment such as pumps, compressors, generators, etc., from noise sensitive receivers if that equipment is to operate

beyond normal working hours. If it is feasible, screen this equipment during normal working hours to reduce noise impacts.

100-3 Experimental Equipment.

100-3.1 General: To encourage the development and use of new or improved equipment, the Engineer may grant the Contractor permission to use equipment other than that normally used and currently accepted, upon approval of the Contractor's written request for permission to use such equipment in place of the normally used equipment. The Engineer, before considering or granting such request, may require that the Contractor establish, at his own expense, satisfactory evidence that the proposed equipment will produce work equal in quality to that produced by the specified equipment, and meets any applicable local, state or federal noise abatement laws, by-laws, ordinances and regulation in effect.

100-3.2 Conditions of Approval: When the Engineer grants permission for the use of new or improved equipment, understand that the Engineer gives such permission for the purpose of testing the quality of work this equipment actually produces. The Engineer will maintain the right to retract permission for use of the equipment at any time that, in his opinion, the Contractor does not obtain results that are at least equal to the results obtainable with currently accepted equipment. Upon the Engineer's withdrawal of such permission for the use of the equipment, use the equipment currently accepted and normal for the work, and remove and dispose of, or otherwise remedy, at no expense to the Department, any work which the Engineer considers defective or unsatisfactory as a result of the use of such experimental equipment. If the Engineer approved the use of particular equipment on a particular project, the Engineer's approval does not extend to the use of the particular equipment on any other project. Furthermore, the Contractor is fully responsible for producing finished work of the quality required by the Contract Documents.

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 When a Separate Item is Included in the Proposal: When the proposal includes a separate item of payment for this work, the work and incidental costs specified as being covered under this Section will be paid for at the Contract lump sum price for the item of Mobilization.

Payment will be made under:

Item No. 101- 1- Mobilization -lump sum.

101-2.2 Partial Payments: When the proposal includes a separate pay item for Mobilization and the Notice to Proceed has been issued, partial payments will be made in accordance with the following:

For contracts of 120 contract days duration or less, partial payment will be made at 50% of the bid price per month for the first two months. For contracts in excess of 120 contract days duration, partial payment will be made at 25% of the bid price per month for the first four months. In no event shall more than 50% of the bid price be paid prior to commencing construction on the project site.

Total partial payments for Mobilization will be limited to 10% of the original Contract amount. Any remaining amount will be paid at Final Acceptance.

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.

101-2.3 When No Separate Item is Included in the Proposal: When the proposal does not include a separate item for Mobilization, all work and incidental costs specified as being covered under this Section will be included for payment under the several scheduled items of the overall Contract, and no separate payment will be made therefore.

SECTION 102 MAINTENANCE OF TRAFFIC

102-1 Description.

Maintain traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work. Construct and maintain detours. Provide facilities for access to residences, businesses, etc., along the project. Furnish, install and maintain traffic control and safety devices during construction. Furnish and install work zone pavement markings for maintenance of traffic (MOT) in construction areas. Provide any other special requirements for safe and expeditious movement of traffic specified in the Temporary Traffic Control Plans. MOT includes all facilities, devices and operations as required for safety and convenience of the public within the work zone.

Do not maintain traffic over those portions of the project where no work is to be accomplished or where construction operations will not affect existing roads. Do not obstruct or create a hazard to any traffic during the performance of the work, and repair any damage to existing pavement open to traffic.

102-2 Materials.

Meet the following requirements:

Raised Pavement Marker Adhesive*	Section 706
Paint*	Section 710
Pavement Marking Materials*	Section 971
Temporary Raised Pavement Markers*	Section 990
Temporary Traffic Control Device Materials*	Section 990
Retroreflective and Nonreflective Sheeting for Temporary Traffic Control Devices*	Section 994

*Use products listed on the Department's APL.

102-2.1 Temporary Traffic Control Devices: Use only the materials meeting the requirements of Section 990, Section 994, Standard Plans and the Manual on Uniform Traffic Control Devices (MUTCD).

102-2.2 Detour: Provide all materials for the construction and maintenance of all detours.

102-2.3 Commercial Materials for Driveway Maintenance: Provide materials of the type typically used for base, including reclaimed asphalt pavement (RAP) material, and having stability and drainage properties that will provide a firm surface under wet conditions.

102-3 Specific Requirements.

102-3.1 Beginning Date of Contractor's Responsibility: Maintain traffic starting the day work begins on the project or on the first day Contract Time is charged, whichever is earlier.

102-3.2 Worksite Traffic Supervisor (WTS): Provide a WTS who is responsible for initiating, installing, and maintaining all temporary traffic control devices as described in this Section and the Contract Documents. Provide all equipment and materials needed to set up, take down, maintain traffic control, and handle traffic-related situations. Provide the WTS or designee with a tablet or smartphone with internet access for recording information into the Department's lane closure notification system. Use approved alternate WTS when necessary.

The WTS must meet the personnel qualifications specified in Section 105.

The WTS is to perform the following duties:

1. On site direction of all temporary traffic control on the project.
2. Is on site during all set up and take down, and performs a drive through inspection immediately after set up. During operations with lane closures, the WTS or on-site designee shall record lane closure information into the Department's lane closure notification system in accordance with 102-3.3.
3. Is on site during all nighttime operations ensuring proper temporary traffic control.
4. Immediately corrects all safety deficiencies and corrects minor deficiencies that are not immediate safety hazards within 24 hours.
5. Is available on a 24 hour per day basis and present at the site within 45 minutes after notification of an emergency situation and is prepared to respond to maintain temporary traffic control or to provide alternate traffic arrangements.
6. Conducts daily daytime and weekly nighttime inspections of projects with predominately daytime work activities, and daily nighttime and weekly daytime inspections of projects with predominantly nighttime work activities of all traffic control devices, traffic flow, pedestrian, bicyclist, and business accommodations.

Advise the project personnel of the schedule of these inspections and give them the opportunity to join in the inspection as deemed necessary.

The Department may disqualify and remove from the project a WTS who fails to comply with the provisions of this Section. The Department may temporarily suspend all activities, except traffic, erosion control and such other activities that are necessary for project maintenance and safety, for failure to comply with these provisions.

102-3.3 Lane Closures: Approval for all lane closures, mobile operations, and traffic pacing operations is required. Submit routine requests to the Engineer 14 calendar days in advance of planned lane closures, mobile operations, and traffic pacing operations. Requests for planned lane closures are to be submitted through the Department's Lane Closure Notification System (LCNS). For unforeseen events that require cancelling or rescheduling lane closures, mobile operations, and traffic pacing operations, revise the lane closure request as soon as possible.

Record information for lane closures, including but not limited to begin and end lane closure times and locations, into the Department's LCNS. Lane closures are to be activated in the Department's LCNS within 5 minutes of placing the first channelizing device and deactivated within 5 minutes removing the last channelizing device associated with the closure.

At the preconstruction conference, submit a request for access to the Department's LCNS to the Engineer. Include the name, email address, level of access required, and a copy of the individual's certification of training for Contractor personnel requiring access to the Department's LCNS. For change of access requests, submit a request to the Engineer at least ten calendar days in advance of when the change is needed.

102-3.3.1 Traffic Pacing: In addition to dates and locations, include a pacing plan outlining the expected equipment and number of traffic control officers required, the proposed traffic pacing lengths and durations, the available existing egresses in the event of an emergency, and a contingency plan in the event of an equipment failure.

102-3.4 Pedestrian and Bicycle Accommodations: Provide accommodations for pedestrians as shown in the Temporary Traffic Control (TTC) plans or as directed by the

Engineer. Accommodate pedestrians with a safe, accessible travel path around work sites separated from mainline traffic in compliance with the Americans with Disabilities Act (ADA) Standards for Transportation Facilities (i.e., stable, firm, slip-resistant, and free of any obstruction or hazards such as holes, debris, mud, construction equipment, and stored material. When a work operation requires a sidewalk or pedestrian way closure for 60 minutes or greater, provide a pedestrian detour or temporary pedestrian way. Provide and maintain pedestrian detours and temporary pedestrian ways that are ADA-compliant as described above. Provide appropriate signs for advanced notification of sidewalk closures and marked detours. Only approved pedestrian longitudinal channelizing devices may be used to close or delineate a pedestrian walkway.

Provide accommodations for the closure of bicycle facilities (i.e., marked bicycle lanes or paved outside shoulders 4 feet or greater in width on non-limited access roadways) as shown in the TTC plans or as directed by the Engineer.

Existing businesses in work areas are to be provided with adequate entrances for vehicular and pedestrian traffic during business hours.

102-4 Alternative Temporary Traffic Control Plan.

The Contractor may propose an alternative Temporary Traffic Control Plan (TTCP) to the plan presented in the Contract Documents. The Contractor's Engineer of Record must sign and seal the alternative TTCP and submit to the Engineer. Prepare the alternative TTCP in conformance with and in the form outlined in the current version of the FDOT Design Manual. Provide a TTCP for each phase of activities. Take responsibility for identifying and assessing any potential impacts to a utility that may be caused by the alternate TTCP proposed by the Contractor, and notify the Department in writing of any such potential impacts to utilities.

For projects with nighttime lane closure restrictions where paving is expected to extend into the winter months, the Contractor may propose an alternative TTCP allowing for daytime lane closures for friction course paving. The alternative TTCP must be a lane closure analysis based on actual traffic counts and prepared in accordance with the FDOT Design Manual.

The Engineer's approval of the alternate TTCP 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 Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

The Department reserves the right to reject any alternative TTCP. Obtain the Engineer's written approval before beginning work using an alternative TTCP. The Engineer's written approval is required for all modifications to the alternative TTCP. The Engineer will only allow changes to the TTCP in an emergency without the proper documentation.

The Contractor may propose to extend lane closure times up to one hour in advance of the lane closure start times shown in the Plans for the following conditions:

1. Limited Access roadways with a traffic count of less than 1,300 vehicles per hour per lane
2. Arterials and Collector roadways with a traffic count of less than 1,550 vehicles per hour per lane.

To determine traffic count, record the number of vehicles in the direction of the closure during a 15-minute period. Multiply the number of vehicles by four and divide by the number of lanes in the direction of the closure.

102-5 Traffic Control.

102-5.1 MUTCD: Comply with the requirements in Part 6 of the MUTCD.

102-5.2 Temporary Traffic Control Plan: The Temporary Traffic Control Plan (TTCP) is the portion of the Plans describing the measures to be used for conveying road users through the work zone. Use the TTCP to maintain traffic for the duration of the work.

For situations or field conditions not addressed by the TTCP follow the Standard Plans. For all other applications, comply with the MUTCD and Standard Plans, Index 102-600. Device location or the number of devices, may be adjusted as recommended by the Work Zone Traffic Supervisor and approved by the Engineer.

102-5.3 Maintenance of Roadway Surfaces: Maintain all lanes that are being used for the MOT, including those on detours and temporary facilities, under all weather conditions. Keep the lanes reasonably free of dust, potholes and rutting. Provide the lanes with the drainage facilities necessary to maintain a smooth riding surface under all weather conditions.

102-5.4 Number of Traffic Lanes: Maintain one lane of traffic in each direction. Maintain two lanes of traffic in each direction at existing four (or more) lane cross roads, where necessary to avoid undue traffic congestion. Do not allow traffic control and warning devices to encroach on lanes used for MOT.

The Engineer may allow the Contractor to restrict traffic to one-way operation for short periods of time provided that the Contractor employs adequate means of traffic control and does not unreasonably delay traffic. When a construction activity requires restricting traffic to one-way operations, locate the flaggers within view of each other when possible. When visual contact between flaggers is not possible, equip them with 2-way radios, official, or pilot vehicles, or use traffic signals.

102-5.5 Crossings and Intersections: Provide and maintain adequate accommodations for intersecting and crossing traffic. Provide signing for the control of traffic entering and leaving work zones by way of intersecting cross roads to make drivers aware of work zone conditions. Do not block or unduly restrict any median opening, road or street crossing the project unless approved by the Engineer. Before beginning any construction, submit to the Engineer the names and phone numbers of persons that can be contacted when signal operation malfunctions.

102-5.6 Access for Residences and Businesses: Provide continuous access to all residences and all places of business.

102-5.7 Protection of the Work from Damage by Traffic: Where traffic would damage a base course, surface course, or structure constructed as a part of the work, control all traffic to remain outside the limits of such areas until the potential for damage no longer exists.

102-5.8 Flagger: Provide flaggers to control traffic when traffic in both directions must use a single lane and in other situations as required.

102-5.9 Conflicting Pavement Markings: Remove all existing pavement markings (paint, tape, thermoplastic, raised pavement markers, etc.) that conflict with temporary paths of vehicles, bicycles, or pedestrians when the conflict will exceed 24 hours. Use any method, other than paint or sprayed asphalt, approved by the Engineer to remove existing pavement markings. Remove conflicting pavement markings using a method that will not damage the surface texture of the pavement and which will eliminate the previous marking pattern regardless of weather and light conditions.

Remove all pavement markings that will conflict with “the next phase of operation” for vehicle, bicycle, and pedestrian paths as described above, before opening to vehicle or bicycle traffic or use by pedestrians.

102-5.10 Vehicle and Equipment Visibility: Equip all pickups and automobiles used on the project with a minimum of one Class 2 warning light that meets the Society of Automotive Engineers Recommended Practice SAE J595, dated November 1, 2008, or SAE J845, dated December 1, 2007, and incorporated herein by reference. Existing lights that meet SAE J845, dated March, 1992, or SAE J1318, dated April, 1986, may be used to their end of service life. The warning lights must be a high intensity amber or white rotating, flashing, oscillating or strobe light. Lights must be unobstructed by ancillary vehicle equipment such as ladders, racks or booms and be visible 360 degrees around the vehicle. If the light is obstructed, additional lights will be required. The lights must be operating when the vehicle is in a work area where a potential hazard exists, when operating at less than the average speed for the facility while performing work activities, making frequent stops or called for in the Plans or Standard Plans.

Equip all other vehicles and equipment with a minimum of 4 square feet of retroreflective sheeting or warning lights.

102-5.11 No Waiver of Liability: Conduct operations in such a manner that no undue hazard results due to the requirements of this Article. The procedures and policies described herein in no way acts as a waiver of any terms of the liability of the Contractor or his surety.

102-5.12 Work Zone Speed: Use the work zone speed in the TTCP. When field conditions warrant work zone speeds different from those in the TTCP, submit signed and sealed documentation to justify reducing the work zone speed limit to the Engineer for approval, or the Engineer may request the District Traffic Operation Engineer to investigate the need.

Sign work zone speed reductions in accordance with Standard Plans, Index 102-600 and the TTCP.

102-5.13 Limited Access Temporary Openings: When required by the Contract Documents, construct temporary openings in accordance with the Standard Plans. Submit a written request identifying the specific locations within the project limits to the Engineer.

Locate temporary openings in areas with adequate sight distance. Do not locate temporary openings with 1.5 miles of interchanges or within 2,000 feet of the acceleration-deceleration lanes at rest areas, median openings, other access openings, or other highway service areas. Do not remove existing guardrail or barrier for temporary openings.

Use temporary pavement for the acceleration-deceleration lane surface of the temporary opening. Commercial material may be used for the driveway surface of the temporary opening. Install a gate at the limited access fence and keep the gate locked when the temporary opening is not in use.

Do not use temporary openings to transport materials to or from any other project.

Failure to comply with this Section and the Standard Plans, 102 Series shall be cause for the Engineer to terminate usage of the temporary opening. When the temporary opening is no longer needed, remove immediately and restore the area to pre-construction condition.

102-6 Detours.

102-6.1 General: Construct and maintain detour facilities wherever it becomes necessary to divert traffic, including pedestrians and bicyclists, from any existing facility, or wherever construction operations block the flow of traffic.

102-6.2 Construction: Plan, construct, and maintain detours for the safe passage of traffic in all conditions of weather. Provide the detour with all facilities necessary to meet this requirement.

Install detectable warnings on temporary ramps in accordance with Section 522.

When the Plans call for the Department to furnish detour bridge components, construct the pile bents in accordance with the Plans, unless otherwise authorized by the Engineer.

Provide two Contractor representatives, who will be directly involved in the erection of Department-owned temporary bridging, to attend a mandatory one-day training session to be conducted at the Department's storage facility. No bridging will be released to the Contractor prior to the completion of this training.

Submit the following: company name, phone number, office address, project contact person, names of the representatives who will attend the training described above, project number, detour bridge type, bridge length, span length, location and usage time frames, to the Engineer at least 30 calendar days before the intended pick-up date, to obtain the storage facility location and list of components for the project. Upon receipt, the Engineer will, within 10 calendar days submit an approved material list to the Contractor and the appropriate Department storage yard.

Submit the name of the representative with authority to pick up components, to the Engineer at least 10 calendar days before the proposed pick-up date. The Department is not obligated to load the bridge components without this notice. Take responsibility and sign for each item loaded at the time of issuance.

Provide timber dunnage, and transport the bridge components from the designated storage facility to the job site. Unload, erect, and maintain the bridge, then dismantle the bridge and load and return the components to the designated storage facility.

Notify the Engineer in writing at least 10 calendar days before returning the components. Include in this notice the name of the Contractor's representative authorized to sign for return of the bridge components. The yard supervisor is not obligated to unload the bridge components without this notice.

The Department will provide equipment and an operator at the Department's storage facility to assist in loading and unloading the bridge components. Furnish all other labor and equipment required for loading and unloading the components.

The Department's representative will record all bridge components issued or returned on the Detour Bridge Issue and Credit Ticket. The tickets must be signed by a Department and a Contractor representative, after loading or unloading each truck to document the quantity and type of bridging issued or returned.

Bind together all bridge components to be returned in accordance with the instructions given by the storage facility. The yard supervisor will repack components that are not packed in compliance with these instructions. Upon request, written packing instructions will be made available to the Contractor, before dismantling of the bridge for return to the Department's storage facility.

Assume responsibility for any shortage or damage to the bridge components. Monies due the Contractor will be reduced at the rate of \$35.00 per hour plus materials for repacking, repairs or replacement of bridge components.

The skid resistance of open steel grid decking on the detour bridge may decrease gradually after opening the bridge to traffic. The Department will furnish a pneumatic floor

scabbler machine for roughening the roadway surface of the detour bridge decking. Provide an air compressor at the job site with 200 cubic feet per minute capacity, 90 psi air pressure for the power supply of the machine, and an operator. Transport the scabbler machine to and from the Department's structures shop. Repair any damage to the scabbler machine caused by operations at no expense to the Department. Perform scabbling when determined necessary by the Engineer. The Department will pay for the cost of scabbling as Unforeseeable Work in accordance with 4-4.

Return the bridge components to the designated storage facility beginning no later than 10 calendar days after the date the detour bridge is no longer needed, the date the new bridge is placed in service, or the date Contract Time expires, whichever is earliest. Return the detour bridging at an average of not less than 200 feet per week. Upon failure to return the bridge components to the Department within the time specified, compensate the Department for the bridge components not returned at the rate of \$5.00 per 10 feet, per day, per bridge, for single lane; and \$10.00 per 10 feet, per day, per bridge, for dual lane until the bridge components are returned to the Department.

102-6.3 Construction Methods: Select and use construction methods and materials that provide a stable and safe detour facility. Construct the detour facility to have sufficient durability to remain in good condition, supplemented by maintenance, for the entire period that the detour is required.

102-6.4 Removal of Detours: Remove detours when they are no longer needed and before the Contract is completed. Take ownership of all materials from the detour and dispose of them, except for the materials on loan from the Department with the stipulation that they are returned.

102-6.5 Detours Over Existing Roads and Streets: When the Department specifies that traffic be detoured over roads or streets outside the project area, do not maintain such roads or streets. However, maintain all signs and other devices placed for the purpose of the detour.

102-6.6 Operation of Existing Movable Bridges: The Department will maintain and operate existing moveable bridges that are to be removed by the Contractor until such time as they are closed to traffic. During this period, make immediate repairs of any damage to such structures caused by use or operations related to the work at no expense to the Department, but do not provide routine repairs or maintenance. In the event that use or operations result in damage to a bridge requiring repairs, give such repairs top priority to any equipment, material, or labor available.

102-6.7 Special Detour: A special detour is defined as a diversion or lane shift for vehicular traffic that requires temporary pavement.

102-6.8 Pedestrian or Bicycle Special Detour: A pedestrian or bicycle special detour is defined as a temporary pedestrian or bicycle way that requires temporary pavement or other stable, firm, slip-resistant surface.

102-7 Traffic Control Officer.

Provide uniformed law enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic in the work zone when the following types of work is necessary on projects:

1. When directing traffic/overriding the signal in a signalized intersection.
2. When nighttime mobile operations are used on freeway facilities (interstates, toll roads, and expressways) for work within the travel lane.
3. When traffic pacing is called for in the TTCP or approved by the Engineer.

4. When pulling conductor/cable above an open traffic lane on limited access facilities, when called for in the TTCP or approved by the Engineer.
5. When a Temporary Road Closure is used.
6. When performing lane closures during nighttime operations on roadways with posted speed limits 55 mph or greater.

At no additional cost to the Department, traffic control officers may be used for operations other than those listed above.

The Department will not consider any claim arising from the failure of a traffic control officer to be present or available on the project. A noncompensable time extension may be granted when a state or local emergency requires all area law enforcement officers to be on-duty and not available for hire.

102-8 Driveway Maintenance.

102-8.1 General: Ensure that each residence and business has safe, stable, and reasonable access.

102-8.2 Construction Methods: Place, level, manipulate, compact, and maintain the material, to the extent appropriate for the intended use.

As permanent driveway construction is accomplished at a particular location, the Contractor may salvage and reuse previously placed materials that are suitable for reuse on other driveways.

102-9 Temporary Traffic Control Devices.

102-9.1 General: Use only devices that are listed on the APL and use in conformance with the APL drawings. Immediately remove or cover, using any method of covering approved by the Engineer, any existing or temporary devices (e.g., signs) that do not apply to current conditions.

The use of NCHRP Report 350 Recommended Procedures for the Safety Performance Evaluation of Highway Features devices purchased prior to January 1, 2020 is permitted on projects let prior to January 1, 2030. All devices manufactured or purchased on or after January 1, 2020, must be MASH compliant in accordance with Section 990.

The APL number is to be permanently marked on the device at a readily visible location. Sheeting used on devices and pavement markings are exempt from this requirement.

Notify the Engineer in writing of any scheduled operation that will affect traffic patterns or safety sufficiently in advance of commencing such operation to permit review of the plan for the proposed installation of temporary traffic control devices.

Assign an employee the responsibility of maintaining the position and condition of all temporary traffic control devices throughout the duration of the Contract. Keep the Engineer advised at all times of the identification and means of contacting this employee on a 24-hour basis.

Maintain temporary traffic control devices in the correct position, properly oriented, clearly visible and clean, at all times. All applicable temporary traffic control devices must meet the classification category of Acceptable as defined in the American Traffic Safety Services Association (ATSSA) Quality Guidelines for Temporary Traffic Control Devices and Features. Temporary concrete barriers must meet the classification category of Acceptable defined in the Department's Temporary Concrete Barrier Evaluation Guide, which may be viewed at the following URL:

https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/docs/default-source/content-docs/programmanagement/implemented/urlinspecs/files/temporaryconcretebarrierguide.pdf.pdf?sfvrsn=343b4c97_10. Pedestrian Longitudinal Channelizing Devices (LCDs) must meet the classification category of Acceptable as defined in the Pedestrian LCD Evaluation Guide, which may be viewed at the following URL:

https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/lcdevaluationguide.pdf?sfvrsn=166e0f16_2. Immediately repair, replace or clean damaged, defaced or dirty devices. Traffic control devices must not be cleaned while installed/used. Use of warning lights on any temporary traffic control device is prohibited, with the exception of the trailer mounted portable regulatory signs.

Employ an approved independent Channelizing Device Supplier (CDS) to provide and maintain the condition of the following non-fixed channelizing devices: drums, cones, vertical panels, barricades, temporary tubular markers, and pedestrian longitudinal channelizing devices. Cones may be provided and maintained by the Contractor.

The CDS shall not be affiliated with the Contractor and must be approved by the Department. Department approved CDSs are listed on the State Construction Office website. CDSs seeking inclusion on the list must meet the requirements of 102-9.1.1. The CDS shall submit a monthly certification on letterhead that the channelizing devices mentioned above installed/used within the work zone meet classification category of Acceptable as defined in the Pedestrian LCD Evaluation Guide and the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features. The CDS shall submit the monthly certification on letterhead for channelizing devices installed/used within the work zone. The CDS certification shall include the following statement, “I certify that I have provided and maintained the following devices <list devices covered under the certification> in accordance with Pedestrian LCD Evaluation Guide and the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features.” If the Contractor chooses to provide and maintain cones, the Contractor must submit a monthly Contractor certification on letterhead that all cones installed/used within the work zone meet acceptable standards as outlined in the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features. The Contractor certification shall include the following statement, “I certify that I have provided and maintained cones in accordance with the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features.”

102-9.1.1 Approved Independent Channelizing Device Supplier (CDS)

Requirements: Submit the following documents to the State Construction Office for review and approval

1. A letter on company letterhead signed and dated by the owner of the company or company officer with the following information and statements:
 - a. The company’s owners, stockholders, and officers.
 - b. A statement declaring that the company will not perform as a CDS on any project where there is common ownership, directly or indirectly, between the company and the Contractor.
 - c. A statement declaring that the company will furnish and maintain the condition of all channelizing devices with the exception of cones as required in 102-9.1 with its own forces.
 - d. A statement declaring at least five years of experience in providing channelizing device supplier services, with its own inventory of channelizing devices.

e. On a separate sheet, list a sample project history of the company's experience as a channelizing device supplier for the five years declared in item 1(d) above including the following information:

1. Project name and number and a brief description of CDS work performed,
2. Beginning and ending date of CDS project activities,
3. Location of project (city, state),
4. Monetary amount of CDS work on project,
5. Owner of project, contact person and phone number with area code,
6. Name of Contractor (client) that the work was performed for and phone number with area code.

2. A maintenance plan for approval by the Department that outlines the frequency and methods for maintaining the condition of all channelizing devices, except cones owned and maintained by the Contractor, installed/used in the work zone.

102-9.2 Work Zone Signs: Use work zone signs in accordance with the TTCP and Standard Plans.

102-9.2.1 Post Mounted Signs: Meet the requirements of 990-8.

102-9.2.2 Portable Signs: Portable signs may be used when the work zone condition will be in place for 24 hours or less, or as approved by the Engineer.

102-9.2.3 Barrier-Mounted Signs: If post mounting criteria cannot be achieved and a barrier or traffic railing exists, attach work zone signs to barrier or traffic railing in accordance with the Standard Plans. Use Standard Plans, Index 700-012 only when mounting the sign to the top of the barrier or traffic railing places the sign panel closer than two feet from the traveled way.

102-9.3 Business Signs: Use business signs in accordance with the TTCP and Standard Plans. Furnish signs having retroreflective sheeting meeting the requirements of Section 990.

102-9.4 Channelizing Devices: Use channelizing devices in accordance with the TTCP, Standard Plans, and MUTCD.

102-9.4.1 Cones: Use cones in active work zones where workers are present.

Use cone collars at night designed to properly fit the taper of the cone when installed. Collars may be removeable or attached permanently. Place the upper 6-inch collar a uniform 3-1/2 inches distance from the top of the cone and the lower 4-inch collar a uniform 2 inches distance below the bottom of the upper 6-inch collar.

102-9.4.2 Pedestrian Longitudinal Channelizing Devices (LCDs): Use LCDs listed on the APL for pedestrian use and meeting the requirements of Section 990 and the Standard Plans. Pedestrian LCDs must be interlocked except for the stand-alone unit placed perpendicular to a sidewalk. Ballast pedestrian LCDs as shown on the APL.

Ensure that joints on the pedestrian LCDs are free of sharp edges and have a maximum offset of 1/2 inch in any plane.

102-9.5 Temporary Barrier: Use temporary barrier in accordance with the TTCP and Standard Plans. Obtain and use precast temporary concrete barrier from a manufacturing plant that is on the Department's Production Facility Listing. Temporary concrete barrier must meet the material and construction requirements of Section 521 unless noted otherwise in the Standard Plans. Proprietary temporary concrete, steel, or water filled barrier used must be listed on the APL.

The maximum allowable height increase between consecutive temporary barrier units in the direction of traffic is one inch.

Temporary barrier must comply with Standard Plans, Index 102-100 or 102-120. Install temporary barriers as either anchored or freestanding as shown in the TTCP or the Standard Plans. An anchored unit is defined as having at least one stake or bolt into the underlying pavement or bridge deck. All other units, including those with keeper pins, are considered freestanding.

Remove temporary asphalt pads and repair all attachment scars to permanent structures and pavements after barrier removal. Make necessary repairs due to defective material, work, or Contractor operations at no cost to the Department. Restore barrier damaged by the traveling public within 24 hours after notification as authorized by the Engineer.

Trailer mounted barriers listed on the APL may be used in lieu of temporary barriers or positive protection the option of the Contractor. Trailer mounted barriers listed on the APL must have an FHWA eligibility letter and be successfully crash tested in accordance with MASH TL-3 criteria. All trailer mounted barriers must be equipped with an APL listed truck mounted attenuator, an APL listed vehicle mounted arrow board and vehicle warning lights in accordance with this Section.

102-9.5.1 Temporary Barrier Meeting the Requirements of Standard Plans, Index 102-120 and 102-110: Ensure the marking requirements of the respective Index are met.

102-9.5.1.1: Proprietary Precast Temporary Concrete Barrier

Fabricated prior to 2005: Submit a certification stating that all unmarked barrier units meet the requirements of the Specifications and the Standard Plans. Certifications will be project specific and non-transferable.

102-9.5.1.2 Proprietary Precast Temporary Concrete Barrier

Fabricated in 2005 or later: Ensure each barrier unit has permanent clear markings, showing the manufacture date, serial number, manufacturer's name or symbol, and the APL number. Label the markings on a plate, plaque, or cast in the unit. Proprietary barrier fabricated prior to 2016 and marked with the "INDX 521" in lieu of the APL number will be permitted.

102-9.5.1.3 Temporary Concrete Barrier Repair: Before beginning the repair, remove all laitance, loose material, and any other deleterious matter to sound concrete or a minimum depth of one inch. Additionally, when reinforcing bars, inserts or weldments are exposed, remove the concrete to provide a minimum one-inch clearance all around. Fill the repair area with an approved high performance concrete repair material in accordance with 930-5 and the manufacturer's recommendations. Restore surfaces and edges to the original dimensions and shape of the barrier.

Repairs are not allowed on barrier units that have one or more of the following deficiencies: structural cracking or cracks that exist through the entire cross-section; unit-to-unit connection assemblies or anchor slots are broken or no longer in a fixed position.

Do not paint repaired barriers.

102-9.6 Barrier Delineators: Use barrier delineators on top of temporary barriers in accordance with the Standard Plans and the requirements of Section 705.

102-9.7 Temporary Glare Screen: Use temporary glare screens listed on the APL that meet the requirements of Section 990. Use screen systems in conjunction with temporary barrier at locations identified in the Plans.

When glare screen is utilized on temporary barrier, barrier delineators will not be required.

102-9.8 Temporary Crash Cushion (Redirective or Gating): Use temporary crash cushions in accordance with the details and notes shown in the TTCP, Standard Plans, and requirements of the pre-approved alternatives listed on the APL.

Temporary crash cushions can be either new or used functionally sound refurbished devices. Performance of intended function is the only condition for acceptance. All metallic components must be galvanized in accordance with Section 967.

Anchor abutting temporary barrier in accordance the Standard Plans or APL drawings, as required. Bidirectional installations must have a transition panel installed between the crash cushion and the abutting barrier. Delineate the crash cushion in accordance with Section 544. Maintain the crash cushions until their authorized removal. Do not place any materials or equipment within the length of the crash cushion.

Remove temporary asphalt or concrete pads and repair all attachment scars to permanent structures and pavements after crash cushion removal. Make necessary repairs due to defective material, work, or Contractor operations at no cost to the Department. Restore crash cushions damaged by the traveling public within 24 hours after notification as authorized by the Engineer.

102-9.9 Temporary Guardrail: Use temporary guardrail in accordance with the TTCP and Standard Plans. Install the temporary guardrail in accordance with the Section 536.

102-9.10 Trailer Mounted Devices:

102-9.10.1 Arrow Board: Use arrow boards in accordance with the TTCP, Standard Plans, and that meet the requirements of Section 990. Ensure that the arrow board display panel is raised to a fully upright position and is fully visible to motorists. Use Type B arrow boards on roadways with an existing posted speed of 45 MPH or less for maintenance and mobile operations on any speed facility. Use Type C arrow boards for all other operations on roadways with an existing posted speed of 50 MPH or greater, and may be substituted for Type B arrow boards on any speed facility.

102-9.10.2 Portable Changeable Message Sign (PCMS): Use PCMSs or truck mounted changeable message signs in accordance with the TTCP, Standard Plans and Section 990 to supplement other temporary traffic control devices used in work zones. Ensure that the PCMS display panel is raised to a fully upright position and is fully visible to motorists. Reduce the intensity of the flashers when using PCMS at night. Use PCMS with a minimum letter height of 18 inches. For facilities with posted speed limits of 45 mph or less, PCMS with a minimum letter height of 12 inches may be used.

For roadways with speed limits greater than 45 mph, the message displayed on the PCMS must be unobstructed from 800 feet. For roadways with speed limits of 45 mph or less, the message displayed must be unobstructed from 650 feet.

Messages must have no more than two phases. The display time for each phase must be at least two seconds but no more than three seconds. The sum of the display time must be a maximum of six seconds.

102-9.10.3 Portable Regulatory Signs (PRS): Use PRSs in accordance with the TTCP, Standard Plans, and. Section 990. Ensure that the PRS sign panel is raised to a fully upright position and is fully visible to motorists.

Activate portable regulatory signs only during active work activities and deactivate when no work is being performed.

102-9.10.4 Radar Speed Display Unit (RSDU): Use RSDUs in accordance with the TTCP, Standard Plans and Section 990 to inform motorists of the posted speed and their

actual speed. Ensure that the RSDU display panel is mounted in accordance with the manufacturer's recommendations.

Activate the radar speed display unit only during active work activities and deactivate when no work is being performed.

102-9.11 Temporary Signalization and Maintenance: Provide and maintain temporary signals and signalization at existing, temporary, and new intersections including, but not limited to, the following:

1. Installation of temporary poles and span wire assemblies as shown in the TTCP,
2. Temporary portable traffic signals as shown in the TTCP,
3. Adding or shifting signal heads,
4. Trouble calls,
5. Maintaining intersection and coordination timing and preemption devices. Coordination timing will require maintaining functionality of system communications.

Phase and time signals in accordance with the Plans. Obtain approval from the District Traffic Operations Engineer for any timing changes that are either reoccurring or last longer than 24 hours.

Restore any loss of operation within 12 hours after notification. Provide alternate temporary traffic control until the signalization is restored.

Provide temporary pedestrian signalization in accordance with the TTCP, and maintain pedestrian signalization at existing, temporary, and new intersections.

Provide traffic signal equipment that meets the requirements of the Standard Plans and 603-2. The Engineer may approve used signal equipment if it is in acceptable condition. Replacement components for traffic signal cabinet assemblies will be provided by the maintaining agency.

102-9.11.1 Temporary Signals for Lane Closures on Two-Lane, Two-Way Roadways: Temporary signals may be used, at the Contractor's option, as an alternate to flaggers for lane closure operations on two-lane, two-way roadways in accordance with Standard Plans, Index 102-606. The Contractor's Engineer of Record must provide the signal timing for the temporary signals. The District Traffic Operations Engineer must approve the installation and timing of temporary signals prior to beginning work. Adjust timing based on changing field conditions as approved by the Worksite Traffic Supervisor. Submit to the Engineer any timing changes that are reoccurring or last longer than 24 hours for District Traffic Operations Engineer's approval. Temporary signals can either be portable signals or span wire signals and must be listed on the APL. Provide two signal faces for each approach.

102-9.12 Temporary Traffic Detection and Maintenance: Provide and maintain temporary traffic detection at existing, temporary, and new signalized intersections. Ensure that vehicle detectors and systems can detect vehicles in each movement on each approach and call the correct vehicle phase when vehicle demand is present. Ensure adjacent lanes and opposing movements do not place false calls. Provide temporary pedestrian detection in accordance with the TTCP, and maintain pedestrian detection at existing, temporary, and new intersections. Ensure pedestrian detectors call the correct pedestrian phase when pedestrian demand is present.

Provide temporary traffic detection equipment listed on the APL.

Restore any loss of detection within 12 hours. If permanent traffic detection cannot be restored within 12 hours, provide temporary detection. Ensure 90% accuracy per signal phase, measured at the initial installation and after any lane shifts, by comparing sample data collected

from the detection system with ground truth data collected by human observation. Collect the sample and ground truth data for a minimum of five minutes during a peak and five minutes during an off-peak period with a minimum three detections for each signal phase. Perform the test in the presence of the Engineer.

102-9.13 Existing ITS Maintenance: Provide maintenance at existing ITS locations. Diagnose any loss of functionality within 8 hours. Restore any loss of functionality within 24 hours. The Engineer may extend the allowable downtime beyond 24 hours. Configure and install Department furnished equipment as necessary. Ensure that all stand-alone functions of replaced ITS devices are tested as detailed in the Contract Documents and as approved by the Engineer. Perform the test in the presence of the Engineer.

102-9.14 Truck Mounted Attenuators and Trailer Mounted Attenuators: Use truck mounted and trailer mounted attenuators in accordance with the manufacturer's recommendations and Standard Plans.

For existing posted speeds of 50 mph or greater, use either truck mounted attenuators or trailer mounted attenuators that meet TL-3 criteria. For existing posted speeds of 45 mph or less, use either truck mounted attenuators or trailer mounted attenuators that meet TL-2 or TL-3 criteria.

102-9.15 Temporary Raised Rumble Strip Set: Use temporary raised rumble strips per the manufacturer's recommendations and in accordance with Standard Plans, Index 102-603.

The temporary raised rumble strip may be either a removable striping type or a portable type. Use a consistent type and color throughout the work zone.

102-9.16 Automated Flagger Assistance Devices (AFAD): Furnish, install, maintain, remove, and relocate AFADs in accordance with the Plans, Standard Plans, Index 102-603, and APL vendor drawings.

Position AFADs where they are clearly visible to oncoming traffic. AFADs may be placed on the centerline if they have been successfully crash tested in accordance with MASH TL-3 criteria. A gate arm is required in accordance with Section 990 if a single AFAD is used on the shoulder to control one direction of traffic.

The devices may be operated either by a single flagger at one end of the traffic control zone, from a central location, or by a separate flagger near each device location. Use only flaggers trained in accordance with Section 105 and in the operation of the AFAD. When in use, each AFAD must be in view of, and attended at all times by, the flagger operating the device.

Provide two flaggers on-site and use one of the following methods in the deployment of AFADs:

1. Place an AFAD at each end of the temporary traffic control zone, or
2. Place an AFAD at one end of the temporary traffic control zone and a flagger at the opposite end.

A single flagger may simultaneously operate two AFADs as described in (1) or a single AFAD as described in (2) if all of the following conditions are met:

1. The flagger has an unobstructed view of the AFAD(s),
2. The flagger has an unobstructed view of approaching traffic in both directions,

3. In the event of an AFAD malfunction, restore normal flagging operations with flaggers or immediately cease the flagging operation and reopen the roadway.

AFADs may be either a remotely controlled Stop/Slow AFAD mounted on either a trailer or a movable cart system, or a remotely controlled Red/Yellow Lens AFAD.

Illuminate the flagging station when the AFAD is used at night. When the AFAD is not in use, remove or cover signs and move the AFAD device outside the clear zone or shield it with a barrier.

AFADs will not be paid for separately. AFADs may be used as a supplement or an alternate to flaggers in accordance with the Plans, Standard Plans, Index 102-603, and the APL vendor drawings. Include the cost for AFADs in Maintenance of Traffic, Lump Sum.

102-9.17 Temporary Lane Separator: Use temporary lane separators (asphalt or portable) in accordance with the TTCP and Standard Plans.

When using portable temporary lane separators, anchor the portable temporary lane separator with a removable anchor bolt. Use epoxy on bridge decks where anchoring is not allowed. Remove the epoxy from the bridge deck by hydroblasting or other method approved by the Engineer.

Repair any damage to the existing pavement caused by the removal of temporary lane separator.

102-9.18 Type III Barricades: Use type III barricades in accordance with the TTCP and Standard Plans. Ensure stripes are sloping downward in the direction road users are to pass. Mount sign panels in accordance with the manufacturer's instructions. Do not place ballast on any rails, or higher than 13 inches above the driving surface. Do not splice the retroreflective sheeting.

102-10 Work Zone Pavement Marking.

102-10.1 Description: Furnish and install work zone pavement markings for MOT in construction areas and in close conformity with the lines and details shown in the Plans and Standard Plans.

Centerlines, lane lines, edge lines, stop bars, standard crosswalks, and turn arrows will be required in work zones prior to opening the road to traffic.

102.10.2 Painted Pavement Markings:

102-10.2.1 General: Use painted pavement markings meeting the requirements of Section 710. Use standard paint unless otherwise identified in the Plans or approved by the Engineer.

102-10.3 Removable Tape:

102-10.3.1 Application: Apply removable tape with a mechanical applicator to provide pavement lines that are neat, accurate and uniform. Equip the mechanical applicator with a film cut-off device and with measuring devices that automatically and accumulatively measure the length of each line placed within an accuracy tolerance of plus or minus 2%. Ensure removable tape adheres to the road surface. Removable tape may be placed by hand on short sections, 500 feet or less, if it is done in a neat accurate manner.

102-10.3.2 Retroreflectivity: Apply white and yellow removable tape pavement markings that will attain an initial retroreflectivity of not less than 300 mcd/m²/lx for white and not less than 250 mcd/m²/lx for yellow markings. Black portions of contrast tapes and black masking tapes must have a retroreflectance of less than 20 mcd/m²/lx.

Measure, record and certify on the Department approved form and submit to the Engineer, the retroreflectivity of white and yellow removable tape pavement markings in accordance with FM 5-541, Part A.

102-10.3.3 Removability: Provide removable tape capable of being removed from bituminous concrete and portland cement concrete pavement intact or in substantially large

strips after being in place for a minimum of 90 days, either manually or by a mechanical roll-up device, at temperatures above 40°F, without the use of heat, solvents, grinding or blasting.

102-10.4 Temporary Raised Pavement Markers (RPMs): Use Class B RPMs except for work that consists of ground-in rumble strips at centerline locations. For ground-in rumble strips at centerline locations, use temporary RPMs in accordance with Section 710. Install all markers in accordance with the manufacturer's recommendations, the Standard Plans, and Section 706. After initial installation, replace broken or missing temporary RPMs in locations where more than three consecutive temporary RPMs are broken or missing at no expense to the Department.

102-11 Method of Measurement.

102-11.1 General: Devices installed/used on the project on any calendar day or portion thereof, within the Contract Time, including time extensions which may be granted, will be paid for at the Contract unit price for the applicable pay item. Include the cost of any work that is necessary to meet the requirements of the Contract Documents for MOT under Maintenance of Traffic, lump sum when separate payment is not provided.

102-11.2 Traffic Control Officers: The quantity to be paid for traffic control officers will be at the Contract unit price per hour (4 hour minimum) for the actual number of officers certified to be on the project site, including any law enforcement vehicles and all other direct and indirect costs. Payment will be made only for those traffic control officers specified in the Plans and authorized by the Engineer.

102-11.3 Special Detours: When a special detour is shown in the Plans, the work of constructing, maintaining, and subsequently removing such detour facilities will be paid for under Special Detour, lump sum. However, traffic control devices, warning devices, barriers, signing, pavement markings, and restoration to final configuration will be paid for under their respective pay items.

102-11.4 Commercial Material for Driveway Maintenance: The quantity to be paid for will be the certified volume, in cubic yards, of all materials authorized by the Engineer, acceptably placed and maintained for driveway maintenance. The volume, which is authorized to be reused, and which is acceptably salvaged, placed, and maintained in other designated driveways will be included again for payment. Commercial Material used for Temporary Openings will not be included for separate payment.

102-11.5 Work Zone Signs: The number of temporary post-mounted signs (temporary regulatory, warning and guide) certified as installed/used on the project will be paid for at the Contract unit price for work zone signs. When multiple signs are located on single or multiple posts, each sign panel will be paid individually. Signs greater than 20 square feet and detailed in the Plans will be paid for under Maintenance of Traffic, lump sum.

Temporary portable signs (excluding mesh signs) and vehicular mounted signs will be included for payment under work zone signs, only if used in accordance with the Standard Plans.

The number of temporary barrier mounted signs (temporary regulatory, warning and guide) certified as installed/used on the project will be paid for at the Contract unit price for barrier mounted work zone signs.

Work zone signs may be installed fourteen days prior to the start of Contract Time with the approval of the Engineer and at no additional cost to the Department.

102-11.6. Business Signs: The number of business signs certified as installed/used on the project will be paid for at the Contract unit price for business signs.

102-11.7 Channelizing Devices: The number of drums, vertical panels, and Type I, Type II, or direction indicator barricades, certified as installed/used on the project meeting the requirements of Standard Plans, Index 102-600 and have been properly maintained will be paid for at the Contract unit prices for channelizing device.

Payment for drums, vertical panels, and Type I, Type II, and direction indicator barricades will be paid per each per day.

Payment for vehicular LCDs will be paid as the length in feet installed divided by the device spacing for barricades, vertical panels, and drums and certified as installed/used on the project meeting the requirements of Standard Plans, Index 102-600 and have been properly maintained will be paid for at the Contract unit price for channelizing device.

Payment for pedestrian LCDs, certified as installed/used on the project and properly maintained, will be paid per linear foot per day. Placement of pedestrian LCDs at locations not shown in the TTCP, or not authorized by the Engineer, will be at the Contractor's expense. Payment for pedestrian LCD mounted signs will be made under Work Zone Signs.

Payment will not be made for channelizing devices unsatisfactorily maintained, as determined by the Engineer. Payment will be made for each channelizing device that is used to delineate trailer mounted devices. Payment will be made for channelizing devices delineating portable changeable message signs during the period beginning 14 working days before Contract Time begins as authorized by the Engineer.

102-11.8 Temporary Barrier: The quantity to be paid for will be the length, in feet, of freestanding units or anchored units certified as installed/used on the project. The quantity to be paid for relocating barrier will be based on the relocated installation type. No separate payment will be made for the asphalt pad. For freestanding units transitioned to a crash cushion, the cost of anchoring the transition units will be included in the cost of the temporary crash cushion in accordance with 102-11.11.

102-11.9 Barrier Delineators: No separate payment will be made for barrier delineators installed on top of temporary barrier. Include the cost for barrier delineators in the cost of the barrier.

102-11.10 Temporary Glare Screen: The certified quantity to be paid for will be determined by the number of sections times the nominal length of each section.

102-11.11 Temporary Crash Cushions: No separate payment will be made for the concrete or asphalt pad.

102-11.11.1 Redirective: The quantity to be paid for will be the number of temporary crash cushions (redirective) certified as installed/used and maintained on the project, including anchoring of temporary barrier necessary for transition to the crash cushion and delineation.

102-11.11.2 Gating: The quantity to be paid for will be the number of temporary crash cushions (gating) certified as installed/used and maintained on the project, including anchoring of temporary barrier necessary for transition to the crash cushion and delineation.

102-11.12 Temporary Guardrail: The quantity to be paid for will be the length, in feet, of temporary guardrail constructed and certified as installed/used on the project. The length of a run of guardrail will be determined as a multiple of the nominal panel lengths.

102-11.13 Arrow Board: The quantity to be paid at the contract unit price will be for the number of arrow boards certified as installed/used on the project on any calendar day or portion thereof within the Contract Time. Payment will be made for up to two inactive days where the arrow board is used on the two days preceding and following the inactive days as authorized by

the Engineer. Payment for additional days may be authorized by the Engineer due to inclement weather.

102-11.14 Portable Changeable Message Sign: The quantity to be paid at the Contract unit price will be for the number of PCMSs or truck mounted changeable message signs certified as installed/used on the project on any calendar day or portion thereof within the Contract Time. Payment will be made for each portable changeable message sign that is used during the period beginning 14 working days before Contract Time begins as authorized by the Engineer. Payment will be made for up to two inactive days where the portable changeable message sign is used on the two days preceding and following the inactive days as authorized by the Engineer. Payment for additional days may be authorized by the Engineer due to inclement weather.

102-11.15 Portable Regulatory Signs: The quantity to be paid for will be the number of portable regulatory signs certified as installed/used on the project on any calendar day or portion thereof within the Contract Time, will be paid for the Contract unit price for portable regulatory sign. Payment will be made for up to two inactive days where the portable regulatory sign is used on the two days preceding and following the inactive days as authorized by the Engineer. Payment for additional days may be authorized by the Engineer due to inclement weather.

102-11.16 Radar Speed Display Unit: The quantity to be paid for will be the number of radar speed display units certified as installed/used on the project on any calendar day or portion thereof within the Contract Time, will be paid for the Contract unit price for radar speed display unit. Payment will be made for up to two inactive days where the radar speed display unit is used on the two days preceding and following the inactive days as authorized by the Engineer. Payment for additional days may be authorized by the Engineer due to inclement weather.

102-11.17 Temporary Signalization and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the full duration of the Contract. For temporary intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the duration of the temporary intersection. No separate payment will be made for temporary signalization and maintenance at new intersections.

102-11.18 Temporary Traffic Detection and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections per day beginning the day Contract Time begins and ending on the day the permanent detection is operational and the final lane configuration is in place. For temporary and new intersections, the certified quantity to be paid for will be the number of signalized intersections per day beginning the day the temporary detection is functional and ending the day the permanent detection is operational and the final lane configuration is in place for a new intersection; or, when the detection is removed for a temporary intersection.

102-11.19 Existing ITS Maintenance: For existing ITS locations, the certified quantity to be paid for will be the number of calendar days from Contract Time start to Final Acceptance.

102-11.20 Work Zone Pavement Markings: Painted pavement markings will be paid as specified in 710-10. The quantity of removable tape to be paid for solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, and 2'-4' dotted lines will be the length, in gross miles, authorized and acceptably applied under this Section and certified as installed/used on the project. The quantity of removable tape to be paid for transverse lines will be the length, in linear feet, authorized and acceptably applied under this Section and certified as installed/used on the project. The quantity of removable tape to be paid for pavement messages, symbols, and arrows will be per each, authorized and acceptably applied under this Section and certified as installed/used on the project. The quantity of temporary RPMs to be paid will be the number of RPMs authorized and

acceptably applied. Payment for removing conflicting pavement markings (paint, tape, thermoplastic, raised pavement markers, etc.) will be included in Maintenance of Traffic, lump sum.

102-11.21 Temporary Raised Rumble Strips: The quantity to be paid for will be the number of calendar days, or portions thereof, that temporary raised rumble strips are certified as installed/used on the project within the Contract Time. No adjustment will be made to the per day measurement for the number of strips or sets used, or for the number of times the sets are relocated.

102-11.22 Temporary Lane Separator: The quantity to be paid for will be the field measure, in feet, of temporary lane separator certified as installed/used on the project, including drainage gaps, completed and accepted. The cost of any pavement repairs due to removal is included in the cost of Maintenance of Traffic, lump sum.

102-11.23 Temporary Signals for Lane Closures on Two-Lane, Two-Way Roadways: The quantity to be paid for will be the number of temporary signals per day installed/used at the locations shown in the TTCP. Temporary signals installed/used at the Contractor's option as an alternative to flaggers will be included in Maintenance of Traffic, lump sum.

102-11.24 Temporary Highway Lighting: When temporary highway lighting is required by the Plans, the work of constructing, maintaining, and removing the temporary highway lighting, including all materials and any necessary design work, will be paid for under temporary highway lighting, lump sum.

102-11.25 Pedestrian or Bicycle Special Detours: When a pedestrian or bicycle special detour is shown in the Plans, the work of constructing, maintaining, and subsequently removing such detour facilities will be paid for under pedestrian or bicycle special detour, lump sum. However, traffic control devices, warning devices, barriers, signing, pavement markings, and restoration to final configuration will be paid for under their respective pay items.

102-11.26 Type III Barricades: The number of type III barricades certified as installed/used on the project will be paid for at the Contract unit price for type III barricades.

102-11.27 Limited Access Temporary Openings: Include all construction, maintenance, removal, and restoration costs of temporary openings in Maintenance of Traffic, lump sum. No separate payment will be made for commercial material, gates, or fence.

102-12 Submittals.

102-12.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for certified MOT payment items for each project in the Contract. Submit the certification of quantities to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

102-12.2 Contractor's Certification of Quantities: Request payment by submitting a certification of quantities 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 done or completed. Ensure the certification consists of the following:

1. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.
2. The basis for arriving at the amount of the progress certification, less payments previously made and less an amount previously retained or withheld. The basis will include a detail breakdown provided on the certification of items of payment in accordance with the Basis of Payment. After the initial setup of the MOT items and counts, the interval for recording the

counts will be made weekly on the certification sheet unless there is a change. This change will be documented on the day of occurrence. Some items may necessitate a daily interval of recording the counts.

102-13 Basis of Payment.

102-13.1 Maintenance of Traffic (General Work): When an item of work is included in the proposal, price and payment will be full compensation for all work and costs specified under this Section except as may be specifically covered for payment under other items.

102-13.2 Traffic Control Officers: Price and payment will be full compensation for the services of the traffic control officers.

102-13.3 Special Detours: Price and payment will be full compensation for providing all detour facilities shown in the Plans and all costs incurred in carrying out all requirements of this Section for general MOT within the limits of the detour, as shown in the Plans.

102-13.4 Commercial Materials for Driveway Maintenance: Price and payment will be full compensation for all work and materials specified for this item, including specifically all required shaping and maintaining of driveways.

102-13.5 Work Zone Signs: Price and payment will be full compensation for all work and materials for furnishing signs, supports and necessary hardware, installation, relocating, maintaining, covering, and removing signs.

102-13.6. Business Signs: Price and payment will be full compensation for all materials and labor required for furnishing, installing, relocating, maintaining, and removing the signs as well as the cost of installing any logos provided by business owners.

102-13.7 Channelizing Devices: Prices and payment will be full compensation for furnishing, installing, relocating, maintaining and removing the channelizing devices.

102-13.8 Temporary Barrier: Price and payment will be full compensation for furnishing, installing, maintaining, and removing the barrier and asphalt pad. When called for, temporary barrier (relocate) will be full compensation for relocating the barrier.

102-13.9 Temporary Glare Screen: Price and payment will be full compensation for furnishing, installing, maintaining, and removing the glare screen certified as installed/used on the project. When called for, glare screen (relocate) will be full compensation for relocating the glare screen.

102-13.10 Temporary Crash Cushion (Redirective or Gating): Price and payment will be full compensation for furnishing, installing, maintaining, and removing crash cushions, object markers, and concrete or asphalt pads.

102-13.11 Temporary Guardrail: Price and payment will be full compensation for furnishing all materials required for a complete installation, including end anchorage assemblies and any end connections to other structures and for installing, maintaining and removing guardrail.

102-13.12 Arrow Board: Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing arrow boards.

102-13.13 Portable Changeable Message Sign: Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing portable changeable message signs.

102-13.14 Portable Regulatory Signs: Price and payment will be full compensation for furnishing, installing, relocating, operating, maintaining and removing a completely functioning system as described in these Specifications.

Payment will include all labor, materials, incidentals, repairs and any actions necessary to operate and maintain the unit at all times that work is being performed or traffic is being affected by construction and/or MOT operations.

102-13.15 Radar Speed Display Unit: Price and payment will be made only for a completely functioning system as described in these Specifications. Payment will include all labor, hardware, accessories, signs, and incidental items necessary for a complete system. Payment will include any measurements needed to ensure that the unit conforms to all Specification requirements.

Payment will include all labor, materials, incidentals, repairs and any actions necessary to operate and maintain the unit at all times that work is being performed or traffic is being affected by construction and MOT operations. Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing radar speed display unit.

102-13.16 Temporary Signalization and Maintenance: Price and payment will constitute full compensation for furnishing, installing, operating, maintaining and removing temporary traffic control signals including all equipment and components necessary to provide an operable traffic signal. Payment will be withheld for each day at each intersection where the temporary signalization is not operational within 12 hours after notification.

102-13.17 Temporary Traffic Detection and Maintenance: Price and payment will constitute full compensation for furnishing, installing, operating, maintaining and removing temporary traffic detection including all equipment and components necessary to provide an acceptable signalized intersection. Take ownership of all equipment and components. Payment will be withheld for each day at each intersection where the temporary detection is not operational within 12 hours after notification.

102-13.18 Existing ITS Maintenance: Price and payment will constitute full compensation for diagnosing, troubleshooting, configuring, installing, operating, maintaining, and removing existing ITS devices including all auxiliary equipment and device components. Payment will be withheld for each day where the ITS device is not operational within the allowable downtime, beginning at the time of notification. Payment will not be withheld for days of delay when the Department or Maintaining Agency is unable to furnish the replacement ITS device to the Contractor.

102-13.19 Work Zone Pavement Markings: Price and payment will be full compensation for all work specified including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Removable tape or durable paint may be substituted for standard paint at no additional cost to the Department.

Payment for temporary RPMs used to supplement line markings will be paid for under temporary raised pavement markers. Install these RPMs as detailed in the Standard Plans.

102-13.20 Temporary Raised Rumble Strips: Price and payment will be full compensation for all work and materials described in this Section, including all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing, removal, reinstalling and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work.

102-13.21 Temporary Lane Separator: Price and payment will be full compensation for all work specified in this Section.

102-13.22 Temporary Signals for Lane Closures on Two-Lane, Two-Way Roadways: Price and payment will be full compensation for furnishing, installing, operating, maintaining and removing temporary traffic signal including all equipment and components necessary to provide an operable portable traffic signal.

102-13.23 Temporary Highway Lighting: Price and payment will be full compensation for providing all temporary highway lighting shown in the Plans.

102-13.24 Pedestrian or Bicycle Special Detours: Price and payment will be full compensation for providing all pedestrian or bicycle special detours shown in the Plans.

102-13.25 Type III Barricades: Prices and payment will be full compensation for furnishing, installing, relocating, maintaining and removing the type III barricades.

102-13.26 Payment Items: Payment will be made under:

- Item No. 102- 1- Maintenance of Traffic - lump sum.
- Item No. 102- 2- Special Detour - lump sum.
- Item No. 102- 3- Commercial Material for Driveway Maintenance - per cubic yard.
- Item No. 102- 4- Pedestrian or Bicycle Special Detour - lump sum.
- Item No. 102- 14- Traffic Control Officer - per hour.
- Item No. 102- 30- Temporary Highway Lighting - lump sum.
- Item No. 102- 60- Work Zone Sign - per each per day.
- Item No. 102- 61- Business Sign - each.
- Item No. 102- 62- Barrier Mounted Work Zone Sign – per each per day
- Item No. 102- 71- Temporary Barrier - per foot.
- Item No. 102- 75- Temporary Lane Separator - per foot
- Item No. 102- 73- Temporary Guardrail - per foot.
- Item No. 102- 74- Channelizing Devices
- Item No. 102- 76- Arrow Board - per each per day.
- Item No. 102- 78- Temporary Raised Pavement Markers - each.
- Item No. 102- 81- Temporary Crash Cushion, Gating - per location.
- Item No. 102- 89- Temporary Crash Cushion, Redirective - per location.
- Item No. 102- 94- Glare Screen - per foot.
- Item No. 102- 99- Portable Changeable Message Sign - per each per day.
- Item No. 102-104- Temporary Signalization and Maintenance - per intersection per day.
- Item No. 102-107- Temporary Traffic Detection and Maintenance - per intersection per day.

Item No. 102-ABC-	Existing ITS Maintenance – per day
Item No. 102-115-	Type III Barricade - per each per day.
Item No. 102-120-	Temporary Signal for Lane Closures on Two-Lane, Two-Way Roadways – per each per day.
Item No. 102-150-	Portable Regulatory Sign - per each per day.
Item No. 102-150-	Radar Speed Display Unit - per each per day.
Item No. 102-909-	Temporary Raised Rumble Strips - per day.
Item No. 102-913-	Removable Tape.
Item No. 710-	Painted Pavement Markings.
Item No. 711-	Thermoplastic Pavement Markings.

SECTION 104 PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

104-1 Description.

Provide erosion control measures where work is accomplished in conjunction with the project, to prevent erosion, pollution of water, detrimental effects to public or private property adjacent to the project right-of-way and damage to work on the project.

104-2 General.

Coordinate the installation of temporary erosion control devices with the construction of the permanent erosion control devices to ensure economical, effective, and continuous control of erosion and water pollution throughout the life of the Contract.

104-3 Control of Contractor's Operations Which May Result in Water Pollution.

Prevent contaminants, pollutants or hazardous substances, as defined in Section 376.301, Florida Statutes, from migrating from the construction site or from materials and equipment into any surface waters, wetlands, groundwater or property beyond the project limits. Conduct and schedule operations to avoid and minimize pollution or siltation from the project to surface waters, wetlands, groundwater, or property beyond the project limits.

Do not drive in, operate, or place construction equipment or materials in surface waters, wetlands, groundwater, or property beyond the project limits without permitted authority for permanent or temporary impacts. Water crossings or other wetlands impacts must be authorized by permit. Obstructing or impeding the water flow or movement of the water or wildlife must be authorized by permit.

Where pumps are used to remove highly turbid waters from enclosed construction areas such as cofferdams or forms, treat the water by one or more of the following methods prior to discharge from the project: pumping into grassed swales or appropriate upland vegetated areas or constructed sediment basins, or confined by an appropriate enclosure such as turbidity barriers when other methods are not practical. Do not discharge, water that does not meet State water quality standards or does not meet the criteria specified in any applicable permit.

Remove sediment accumulated during construction from all existing or newly constructed stormwater facilities prior to final acceptance. Ensure that all stormwater conveyances and stormwater facilities meet final grade requirements at final acceptance. Remove silt or regrade as necessary to comply with the lines and grades shown in the Plans.

Do not enter onto lands or waters outside the limits of construction as staked, except as authorized by the Engineer. Do not allow water that does not meet state water quality standards or does not meet the permitted criteria to exit the project limits.

Obtain the Engineer's approval for the location and method of operation in borrow pits, material pits, and disposal areas furnished for waste material from the project (other than commercially operated sources) such that erosion during and after completion of the work will not result in detrimental siltation or water pollution.

104-4 Materials for Temporary Erosion Control.

For materials that are part of the permanent work, meet the testing requirements of the applicable permanent materials.

For materials not part of the permanent work, no testing is required; acceptance will be based on visual inspection

Use new or used materials for the construction of temporary silt fence, staked turbidity barriers, and floating turbidity barrier not to be incorporated into the completed project

For geotextile fabrics, use a product on the Approved Product List (APL) meeting the requirements of Section 985.

104-5 Preconstruction Requirements.

Prior to the Preconstruction Conference, submit an Erosion and Sediment Control Plan meeting the requirements or special conditions of all permits authorizing project construction. If no permits are required or the approved permits do not contain special conditions or specifically address erosion and water pollution, the project's Erosion and Sediment Control Plan will be governed by 7-1.1, 7-2.2, 7-8.1, 7-8.2, and Section 104.

When a DEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities permit is issued, the Contractor's Erosion and Sediment Control Plan shall be prepared to accompany the Department's Stormwater Pollution Prevention Plan. Ensure the Erosion and Sediment Control Plan includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-storm water discharges, such as contaminated groundwater or accidental spills. Do not begin any soil disturbing activities before receiving the Engineer's written approval of the Erosion and Sediment Control Plan, including the required signed certification statements.

Failure to sign and submit any required documents or certification statements will be considered a default of the Contract. Any soil disturbing activities performed without the required signed documents or certification statements is considered a violation of the DEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

Prepare a site-specific Erosion and Sediment Control Plan in accordance with the planned sequence of operations and present it in a format acceptable to the Department. The Erosion and Sediment Control Plan shall describe, but not be limited to, the following items or activities:

1. For each phase of construction operations or activities, supply the following information:

- a. Locations of all erosion control devices
- b. Types of all erosion control devices
- c. Estimated time erosion control devices will be in operation
- d. Monitoring schedules for maintenance of erosion control devices
- e. Methods of maintaining erosion control devices
- f. Dewatering plan
- g. Locations of all stored fuel or other containments, pollutants or hazardous waste
- h. Spill prevention and response measures and disposal and removal methods
- i. Submit any changes to the Erosion and Sediment Control Plan within seven calendar days

2. The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.

3. Submit for approval the Erosion and Sediment Control Plans meeting paragraphs 3a, 3b, or 3c below:

a. Projects permitted by the Southwest Florida Water Management District (SWFWMD), require the following:

Submit the Erosion and Sediment Control Plan to the Engineer for review and to the appropriate SWFWMD Office for review and approval. Include the SWFWMD permit number on all submitted data or correspondence.

The Contractor may schedule a meeting with the appropriate SWFWMD Office to discuss the Erosion and Sediment Control Plan in detail, to expedite the review and approval process. Advise the Engineer of the time and place of any meetings scheduled with SWFWMD.

Do not begin construction activities until the Erosion and Sediment Control Plan receives written approval from both SWFWMD and the Engineer.

b. Projects permitted by the South Florida Water Management District or the St. Johns River Water Management District, require the following:

Obtain the Engineer's approval of the Erosion and Sediment Control Plan.

Do not begin construction activities until the Erosion and Sediment Control Plan receives written approval from the Engineer.

c. Projects authorized by permitting agencies other than the Water Management Districts or projects for which no permits are required require the following:

The Engineer will review and approve the Contractor's Erosion and Sediment Erosion Control Plan.

Do not begin construction activities until the Erosion and Sediment Control Plan receives written approval from the Engineer.

104-6 Construction Requirements.

104-6.1 Limitation of Exposure of Erodible Earth: Do not allow the surface area of erodible earth that clearing and grubbing operations, excavation and filling operations, or other earth disturbing activities to exceed 750,000 square feet without specific prior written approval by the Engineer. This limitation applies separately to clearing and grubbing operations and excavation and filling operations.

The Engineer may further limit the surface areas of unprotected erodible earth exposed by the construction operation and may direct the Contractor to provide additional erosion or pollution control measures to prevent contamination of any surface waters, wetlands, or groundwater or to prevent detrimental effects on property outside the project limits or damage to the project.

104-6.2 Incorporation of Erosion and Sediment Control Devices: Incorporate permanent erosion and sediment control devices into the project at the earliest practical time. Complete the installation of temporary erosion and sediment control devices prior to the commencement of any earthwork. Use temporary erosion and sediment control devices found in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (E&SC Manual) to control erosion and sediment generated by construction operations, to correct unforeseen conditions during construction, and to control erosion and sediment prior to the incorporation of permanent erosion and sediment control devices. An electronic version of the E&SC Manual can be found at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/FLERosionSedimentManual.shtm>.

104-6.3 Scheduling of Successive Operations: Schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposure of uncompleted construction to the elements is as short as practicable.

Schedule and perform clearing and grubbing such that grading operations can be incorporated immediately thereafter. Schedule and perform grading operations so that permanent erosion control devices can follow immediately thereafter if conditions on the project permit.

104-6.4 Details for Temporary Erosion and Sediment Control Devices:

104-6.4.1 General: Use temporary erosion, sediment and water pollution control devices found in the E&SC Manual. These devices consist of, but are not limited to, temporary sod, rolled erosion control products, sediment containment systems, runoff control structures, sediment barriers, inlet protection systems, silt fences, turbidity barriers, and chemical treatment. For design details for some of these devices, refer to the E&SC Manual. Perform installation, inspection, maintenance, and removal of all temporary erosion and sediment control devices in accordance with applicable permits, manufacturer's directions, and the Contract Documents.

104-6.4.2 Temporary Sod: The Engineer may designate certain areas of sod constructed in accordance with Section 570, as a temporary erosion control device. Do not use seed as a temporary erosion control device. The Engineer may waive the turf establishment requirements of Section 570 for areas of temporary sod that will not be a part of the permanent construction.

104-6.4.3 Runoff Control Structures: Construct runoff control structures in accordance with the details shown in the Contract Documents.

104-6.4.4 Sediment Containment Systems: Construct sediment containment systems in accordance with the details shown in the Contract Documents. Clean out sediment containment systems as necessary in accordance with the Contract Documents.

104-6.4.5 Sediment Barriers: Provide and install sediment barriers according to details shown in the Contract Documents or, as directed by the Engineer to protect against downstream accumulation of sediment. Sediment Barriers include, but are not limited to synthetic bales, silt fence, fiber logs and geosynthetic barriers. Reusable barriers that have had sediment deposits removed may be reinstalled on the project as approved by the Engineer.

104-6.4.6 Silt Fence:

104-6.4.6.1 General: Furnish, install, maintain, and remove silt fences, in accordance with the applicable permits, the manufacturer's directions, and the Contract Documents.

104-6.4.6.2 Materials and Installation: Use a geotextile fabric made from woven or nonwoven fabric, meeting the physical requirements of Section 985 according to those applications for erosion control.

Choose the type and size of posts and wire mesh reinforcement (if required). Do not use products which have a separate layer of plastic mesh or netting. Provide a durable and effective silt fence that controls sediment in accordance with the Contract Documents.

Erect silt fence at upland locations and at temporary locations shown in the Contract Documents or where continuous construction activities change the natural contour and drainage runoff. Do not attach silt fence to existing trees unless approved by the Engineer.

104-6.4.6.3 Inspection and Maintenance: Inspect all silt fences in accordance with any applicable permit. If the project does not have a permit, inspect within 24 hours after each rain event and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, repair or replace silt fences in accordance with the Contract Documents or as directed by the Engineer.

Remove sediment deposits when the deposit reaches approximately 1/2 the height of the silt fence or as directed by the Engineer. Shape any remaining sediment deposits to conform with the finished grade and prepare the area for turf in accordance with Section 570.

104-6.4.7 Floating Turbidity Barriers and Staked Turbidity Barriers:

Furnish, install, maintain, and remove floating turbidity barriers in accordance with the applicable permits, the manufacturer's directions, and the Contract Documents. The Contractor may need to deploy turbidity barriers around isolated areas of concern (such as, seagrass beds, coral communities) both within as well as outside the project limits. The Engineer will identify such areas. Place the barriers prior to the commencement of any work that could impact the area of concern. Ensure that the type of barrier used and the deployment and maintenance of the barrier will minimize dispersion of turbid waters from the project. The Engineer may approve alternate methods or materials.

Install and maintain turbidity barriers to avoid or minimize the degradation of the water quality of the surrounding waters and minimize damage to areas where the floating barriers are installed.

104-6.4.8 Inlet Protection System: Furnish and install inlet protection systems as shown in the Contract Documents.

104-6.4.9 Rolled Erosion Control Products (RECPs):

104-6.4.9.1 General: Install RECPs in locations where temporary protection from erosion is needed. Two common applications are described below.

1. Use RECPs composed of natural or synthetic fiber mats, plastic sheeting, or netting as protection against erosion, when directed by the Engineer, during temporary pauses in construction caused by inclement weather or other circumstances. Remove the material when construction resumes.

2. Use RECPs as erosion control blankets, at locations shown in the Plans, to facilitate plant growth while permanent grassing is being established. For the purpose described, use non-toxic, biodegradable, natural or synthetic woven fiber mats. Install erosion control blankets capable of sustaining a maximum design velocity of 6.5 ft/sec as determined from tests performed by Utah State University, Texas Transportation Institute or an independent testing laboratory approved by the Department. Submit to the Engineer, certified test reports from the manufacturer showing that the erosion control blankets meet the requirements of this Specification. Certification must be attested, by a person having legal authority to bind the manufacturing company. Also, furnish two 4 by 8 inch samples for product identification. The manufacturers test records shall be made available to the Department upon request. Leave the material in place, as installed, to biodegrade.

104-6.4.10 Chemical Treatment: Provide chemical treatment in accordance with the Contract Documents. Chemical treatment may be used to clarify turbid or sediment laden water that does not meet state water quality standards or to supplement other erosion and

sediment control devices to aid in their performance. The contractor must provide the required toxicity testing information in accordance with the Contract Documents to the Engineer for review and acceptance prior to using any chemical treatment on the project site.

104-6.5 Removal of Temporary Erosion Control Devices: In general, remove or incorporate into the soil any temporary erosion control devices upon incorporation of the permanent erosion control devices into the project. The Engineer may direct that temporary devices be left in place.

104-7 Maintenance of Erosion and Sediment Control Devices.

104-7.1 General: Provide routine maintenance of permanent and temporary erosion and sediment control devices, at no expense to the Department, until the project is complete and accepted. If reconstruction or replacement of erosion and sediment control devices is necessary due to the Contractor's negligence or carelessness or, in the case of temporary erosion and sediment control devices, improper installation, lack of maintenance, excessive wear, design-life exceedance or failure by the Contractor to install permanent erosion control devices as scheduled, the Contractor shall repair or replace such erosion control devices at no expense to the Department. If reconstruction of permanent or temporary erosion and sediment control devices is necessary due to factors beyond the control of the Contractor, the Department will pay for replacement under the appropriate Contract pay item or items.

Inspect all erosion and sediment control devices at least once every seven calendar days and within 24 hours of the end of a storm event that is 0.50 inches or greater. Maintain all erosion and sediment control devices as required in the Stormwater Pollution Prevention Plan, the Contractor's Erosion and Sediment Control Plan, and if applicable, as specified in the State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

104-8 Protection During Suspension of Contract Time.

Initiate stabilization measures within seven calendar days upon suspension of construction activities. If it is necessary to suspend the construction operations for any appreciable length of time, shape the disturbed areas to facilitate stormwater runoff and construct earthen berms along the top edges of embankments to intercept stormwater runoff. Provide temporary slope drains in areas that are highly erodible to avoid pollution of surface waters, wetlands, groundwater, or property beyond the project limits. Locate slope drains at intervals of approximately 500 feet and stabilize by paving or covering with waterproof materials. Should such preventive measures fail, immediately take action as necessary to effectively prevent erosion and siltation. During suspension of operations, the Engineer may direct the Contractor to perform additional erosion and sediment control work as necessary.

104-9 Method of Measurement.

When separate items for temporary erosion control devices are included in the Contract, the quantities to be paid for will be:

1. the area, in square yards, of rolled erosion control products;
2. the length, in feet, of runoff control structures, measured along the surface of the work constructed;
3. the number of sediment containment systems constructed and accepted;
4. the number of sediment containment system cleanouts accomplished and accepted;

5. the length, in feet, of sediment barriers;
6. the length, in feet, of floating turbidity barrier;
7. the length, in feet, of staked turbidity barrier;
8. the number of inlet protection systems, for existing inlets;
9. the area, in square yards, of chemical treatment;
10. the number of floc logs or drums of product for chemical treatment;

Upon acceptance by the Engineer, the quantity of floating turbidity barriers, sediment barriers, staked turbidity barriers, and inlet protection devices will be paid for regardless of whether materials are new, used, or relocated from a previous installation on the project. Protection of newly constructed inlets and drainage systems is incidental to their installation. No separate payment will be made for temporary erosion control devices used to protect newly constructed drainage systems.

104-10 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including construction and routine maintenance of temporary erosion control devices.

Any additional costs resulting from compliance with the requirements of this Section, other than construction, routine maintenance, and removal of temporary erosion control devices, will be included in the Contract unit prices for the item or items to which such costs are related. Temporary sod used as a temporary erosion control device in accordance with 104-6.4.2 will be paid for under Section 570.

Separate payment will not be made for the cost of constructing temporary earth berms along the edges of the roadways to prevent erosion during grading and subsequent operations. The Contractor shall include these costs in the Contract prices for grading items.

In case of repeated failure on the part of the Contractor to control erosion, pollution, or siltation, the Engineer reserves the right to employ outside assistance or to use the Department's own forces to provide the necessary corrective measures. Any such costs incurred, including engineering costs, will be charged to the Contractor and appropriate deductions made from the monthly progress estimate.

Payment will be made under:

Item No. 104- 1-	Artificial Coverings/ Rolled Erosion Control Products - per square yard.
Item No. 104- 6-	Slope Drains (Temporary)/ Runoff Control Structures - per foot.
Item No. 104- 7-	Sediment Basins/ Containment Systems - each.
Item No. 104- 9-	Sediment Basin/ Containment system Cleanouts - each.
Item No. 104- 10-	Sediment Barriers - per foot
Item No. 104- 11-	Floating Turbidity Barrier - per foot.
Item No. 104- 12-	Staked Turbidity Barrier - per foot.
Item No. 104- 18-	Inlet Protection System - each.
Item No. 104- 19-	Chemical Treatment - per square yard.
Item No. 104- 20-	Chemical Treatment (floc logs, drums of product) - each.

CLEARING CONSTRUCTION SITE

SECTION 110 CLEARING AND GRUBBING

110-1 Description.

Clear and grub within the areas shown in the Plans. Remove and dispose of all trees, stumps, roots and other such protruding objects, buildings, structures, appurtenances, existing flexible asphalt pavement, and other facilities necessary to prepare the area for the proposed construction. Remove and dispose of all product and debris not required to be salvaged or not required to complete the construction.

Perform miscellaneous work necessary for the complete preparation of the overall project site as specified in 110-10.

110-2 Standard Clearing and Grubbing.

110-2.1 Work Included: Completely remove and dispose of all buildings, timber, brush, trees, stumps, roots, rubbish, debris, existing flexible pavement and base, drainage structures, culverts, and pipes. Remove all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas.

Perform standard clearing and grubbing within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right-of-way ditches, etc.
2. If constructing over an existing road, remove existing asphalt pavement. If shown in the Contract Documents, remove existing pavement base.
3. All areas where roadway embankments will be constructed.
4. All areas where structures will be constructed, including pipe culverts and other pipe lines.

110-2.2 Depths of Removal of Roots, Stumps, and Other Debris: In all areas where excavation is to be performed, or roadway embankments are to be constructed, remove roots and other debris to a depth of 12 inches below the ground surface. Remove roots and other debris from all excavated material to be used in the construction of roadway embankment or roadway base. Plow the surface to a depth of at least 6 inches, and remove all roots thereby exposed to a depth of at least 12 inches. Completely remove and dispose of all stumps within the roadway right-of-way.

Remove all roots, etc., protruding through or appearing on the surface of the completed excavation within the roadway area and for structures, to a depth of at least 12 inches below the finished excavation surface.

Remove or cut off all stumps, roots, etc., below the surface of the completed excavation in borrow pits, material pits, and lateral ditches.

In borrow and material pits, do not perform any clearing or grubbing within 3 feet inside the right-of-way line.

Within all other areas where standard clearing and grubbing is to be performed, remove roots and other debris projecting through or appearing on the surface of the original ground to a depth of 12 inches below the surface, but do not plow or harrow these areas.

110-2.3 Boulders: Remove any boulders encountered in the roadway excavation (other than as permitted under the provisions of 120-7.2) or found on the surface of the ground. When approved by the Engineer place boulders in neat piles inside the right of way. The Contractor

may stockpile boulders encountered in Department-furnished borrow areas, which are not suitable for use in the embankment construction, within the borrow area.

110-2.4 Asbestos Containing Materials (ACM) Not Identified Prior to the Work:

When encountering or exposing any condition indicating the presence of asbestos, cease operations immediately in the vicinity and notify the Engineer, in accordance with 110-6.5.

110-3 Selective Clearing and Grubbing.

110-3.1 General: Remove and dispose of vegetation, obstructions, etc., as shown in the Plans. Provide acceptable fill material, and grade and compact holes or voids created by the removal of the stumps. Perform all selective clearing and grubbing in accordance with ANSI A300.

No staging, storing, stockpiling, parking or dumping will be allowed in selective clearing and grubbing areas. Only mechanical equipment related to selective clearing and grubbing activities will be allowed in selective clearing and grubbing areas. Protect trees to remain from trunk, branch and root damage.

110-3.2 Protection of Plant Preservation Areas: Areas to remain natural may be designated in the Plans. No clearing and grubbing, staging, storage, stockpiling, parking or dumping is allowed in these areas. Do not bring equipment into these areas.

110-3.3 Tree Protection Barrier: Construct a tree protection barrier in accordance with Standard Plans Index 110-100 and the Plans. Maintain barrier for duration of the Contract.

110-3.4 Tree Root and Branch Pruning: When pruning cuts or root pruning to existing trees are shown in the Plans, work is to be supervised on site by an International Society of Arboriculture (ISA) Certified Arborist and performed in accordance with ANSI A300.

110-3.5 Tree Removal: Remove trees as shown in the Plans.

110-4 Protection of Property Remaining in Place.

Protect property to remain in place in accordance with 7-11.

110-5 Removal of Buildings.

110-5.1 Parts to be Removed: Completely remove all parts of the buildings, including utilities, plumbing, foundations, floors, basements, steps, connecting concrete sidewalks or other pavement, septic tanks, and any other appurtenances, by any practical manner which is not detrimental to other property and improvements.

Remove utilities to the point of connection to the utility authority's cut-in. After removing the sewer connections to the point of cut-in, construct a concrete plug at the cut-in point, as directed by the Engineer, except where the utility owners may elect to perform their own plugging. Contact the appropriate utility companies prior to removal of any part of the building to ensure disconnection of services.

Submit demolition schedule 15 working days before beginning any demolition or renovation of a building.

110-5.2 Removal by Others: Where buildings within the area to be cleared and grubbed are so specified to be removed by others, remove and dispose of any foundations, curtain walls, concrete floors, basements or other foundation parts which might be left in place after such removal of buildings by others.

110-6 Removal of Existing Bridges.

110-6.1 General: The work under this Article includes bridges, as defined in 1-3.

Remove and dispose of the materials from existing bridges. Remove

1. those bridges and approach slabs, or portions of bridges, shown in the Plans to be removed,

2. those bridges and approach slabs, or portions of bridges, found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed,

3. those bridges and approach slabs, or portion of bridges, which are necessary to be removed in order to complete the work, and

4. other appurtenances or obstructions which may be designated in the Contract Documents to be included as an item of payment for the work under this Article.

Submit schedule information and demolition plan for approval 15 working days before beginning any demolition or renovation of any structures.

110-6.2 Method of Removal:

110-6.2.1 General: Remove the structures in such a way so as to leave no obstructions to any proposed new bridge or to any waterways. Pull, cut off, or break off pilings to the requirements of the permit or other Contract Documents, or if not specified, not less than 2 feet below the finished graded surface. In the event that the Plans indicate channel excavation to be done by others, consider the finished graded surface as the limits of such excavation. For materials which are to remain the property of the Department or are to be salvaged for use in temporary bridges, avoid damage to such materials, and entirely remove all bolts, nails, etc. from timbers to be so salvaged. Mark structural steel members for identification as directed.

110-6.2.2 Removal of Steel Members with Hazardous Coatings: Submit to the Engineer for approval the “Contractor’s Lead in Construction Compliance Program”, QP2 certification from the Society for Protective Coatings (SSPC) from the firm actually removing and disposing of these steel members before any members are disturbed.

Vacuum power tool clean any coated steel member to bare metal as defined by SSPC-SP11 a minimum of 4 inches either side of any area to be heated (e.g. torch cutting, sawing, grinding, etc.) in accordance with 29 CFR 1926.354. Abrasive blasting is prohibited.

110-6.3 Partial Removal of Bridges: On concrete bridges to be partially removed and widened, remove concrete by manually or mechanically operated pavement breakers, by concrete saws, by chipping hammers, or by hydro-demolition methods. Do not use explosives. Where concrete is to be removed to neat lines, use concrete saws or hydro-demolition methods capable of providing a reasonably uniform cleavage face. If the equipment used will not provide a uniform cut without surface spalling, first score the outlines of the work with small trenches or grooves. For all demolition methods, submit for review and approval of the Engineer, a demolition plan that describes the method of removal, equipment to be used, types of rebar splices or couplers, and method of straightening or cutting rebar. In addition, for hydro-demolition, describe the method for control of water or slurry runoff and measures for safe containment of concrete fragments that are thrown out by the hydro-demolition machine.

110-6.4 Authority of U.S. Coast Guard: For bridges in navigable waters, when constructing the project under authority of a U.S. Coast Guard permit, the U.S. Coast Guard may inspect and approve the work to remove any existing bridges involved therein, prior to acceptance by the Department.

110-6.5 Asbestos Containing Materials (ACM) Not Identified Prior to the Work: When encountering or exposing any condition indicating the presence of asbestos, cease operations immediately in the vicinity and notify the Engineer.

Make every effort to minimize the disturbance of the ACM. Immediately provide provisions for the health and safety of all jobsite personnel and the public that may be exposed to

any ACM. Provisions shall meet all applicable Federal, State, and Local Rules and Regulations regarding potentially hazardous conditions due to ACM.

The Engineer will notify the District Contamination Impact Coordinator (DCIC) who will engage the services of the Department's Contamination Assessment/Remediation Contractor (CAR). Provide access to the potential contamination area. Preliminary investigation by the CAR Contractor will determine the course of action necessary for site security and the steps necessary to resolve the contamination issue.

The CAR Contractor will perform an asbestos survey to delineate the asbestos areas, and identify any staging or holding areas that will be needed for assessment or abatement of the asbestos material.

The CAR Contractor will maintain jurisdiction over activities within areas contaminated with ACM including staging and holding areas. The CAR Contractor will be responsible for the health and safety of workers within these delineated areas. Provide continuous access to these areas for the CAR Contractor and representatives of regulatory or enforcement agencies having jurisdiction.

Coordinate with the CAR Contractor and Engineer to develop a work plan with projected completion dates for the final resolution of the contamination, in coordination with any regulatory agencies as appropriate. Use the work plan and schedule as a basis for planning the completion of all work efforts. The Engineer may grant Contract Time extensions according to the provisions of 8-7.3.2.

Cooperate with the CAR Contractor to expedite integration of the CAR Contractor's operations into the construction project. Adjustments to quantities or to Contract unit prices will be made according to work additions or reductions on the part of the Prime Contractor in accordance with 4-3.

The Engineer will inform the Prime Contractor when operations may resume in the affected area.

110-7 Removal of Existing Concrete.

Remove and dispose of existing Portland cement concrete pavement, sidewalk, slope pavement, ditch pavement, curb, and curb and gutter, etc., where shown in the Plans.

Remove all gravity walls, noise/sound walls, retaining walls, MSE walls, perimeter walls, and roadway concrete barriers, where shown in the Plans. All ancillary elements of these concrete features being removed including, but not limited to, base, leveling pads, copings, reinforcing steel or straps, footings, edgedrains, etc, are incidental and included in the cost of the removal.

110-8 Ownership of Materials.

Except as may be otherwise specified in the Contract Documents, take ownership of all buildings, structures, appurtenances, and other materials removed and dispose of them in accordance with 110-9.

110-9 Disposal of Materials.

110-9.1 General: Either stack materials designated to remain the property of the Department in neat piles within the right-of-way, load onto the Department's vehicles, or deliver to location designated in the Plans.

Dispose of timber, stumps, brush, roots, rubbish, and other material resulting from clearing and grubbing in areas and by methods meeting the applicable requirements of all Federal, State and Local Rules and Regulations. Do not block waterways by the disposal of debris.

With the approval of the Engineer, wood chips may be evenly distributed to a depth of no more than one inch in designated areas in the Department's right-of-way.

110-9.2 Burning Debris: Where burning of such materials is permitted, perform all such burning in accordance with the applicable Federal, State and Local rules and regulations. Perform all burning at locations where trees and shrubs adjacent to the cleared area will not be harmed.

110-9.3 Timber and Crops: The Contractor may sell any merchantable timber, fruit trees, and crops that are cleared under the operations of clearing and grubbing for his own benefit, subject to the provisions of 7-1.2, which may require that the timber, fruit trees, or crops be burned at or near the site of their removal, as directed by the Engineer. The Contractor is liable for any claims which may arise pursuant to the provisions of this Subarticle.

110-9.4 Disposal of Treated Wood: Treated wood must be handled and disposed of properly during removal. Treated wood should not be cut or otherwise mechanically altered in a manner that would generate dust or particles without proper respiratory and dermal protection. The treated wood must be disposed of in at least a lined solid waste facility or through recycling/reuse. Treated wood shall not be disposed by burning or placement in a construction and demolition (C&D) debris landfill.

110-9.5 Hazardous Materials/Waste: Handle, transport, and dispose of hazardous materials/waste in accordance with all Federal, State, and Local Rules and Regulations including, but not limited to, the following:

1. SSPC Guide 7
2. Federal Water Pollution Control Act, and
3. Resource Conservation and Recover Act (RCRA).

Accept responsibility for the collection, sampling, classification, packaging, labeling, accumulation time, storage, manifesting, transportation, treatment and disposal of hazardous materials/waste, both solid and liquid. Separate all solid and liquid waste and collect all liquids used at hygiene stations and handle as hazardous materials/waste. Obtain written approval from the Engineer for all hazardous materials/waste stabilization methods before implementation.

Obtain an EPA/FDEP Hazardous Waste Identification Number (EPA/FDEP ID Number) before transporting and/or disposal of any hazardous materials/waste.

List the Department as the generator for hazardous materials/waste resulting from removal or demolition of Department materials.

Submit the following for the Engineers' approval before transporting, treatment or disposal of any hazardous materials/waste:

1. Name, address and qualifications of the transporter,
2. Name, address and qualifications of the treatment facility,
3. Proposed treatment and/or disposal of all Hazardous Materials/Waste.
4. EPA/FDEP Hazardous Waste Identification Number Application Form.
5. Manifest forms.

Transport all hazardous materials/waste in accordance with applicable Federal, State, and Local Rules and Regulations including, but not limited to, the 40 CFR 263 Standards.

Submit all final Hazardous Materials/Waste manifest/bills of lading and certificates of disposal to the Engineer within 21 days of each shipment.

110-9.5.1 Steel Members with Hazardous Coating: Dispose of steel members with hazardous coating in one of the following manners:

1. Deliver the steel members and other hazardous waste to a licensed recycling or treatment facility capable of processing steel members with hazardous coating.
2. Deliver the steel members with hazardous coating to a site designated by the Engineer for use as an offshore artificial reef. Deliver any other hazardous materials/waste to a licensed hazardous materials/waste recycling treatment facility.

Dismantle and/or cut steel members to meet the required dimensions of the recycling facility, treatment facility or offshore artificial reef agency.

All compensation for the cost of removal and disposal of hazardous materials/waste will be included in the Cost of Removal of Existing Structures.

110-9.5.2 Certification of Compliance: Submit certification of Compliance from the firm actually removing and disposing of the hazardous materials/waste stipulating, the hazardous materials/waste has been handled, transported and disposed of in accordance with this Specification. The Certification of Compliance shall be attested to by a person having legal authority to bind the company.

Maintain all records required by this Specification and ensure these records are available to the Department upon request.

110-10 Miscellaneous Operations.

110-10.1 Water Wells Required to be Plugged: Fill or plug all water wells within the right-of-way, including areas of borrow pits and lateral ditches, that are not to remain in service, in accordance with applicable Federal, State, and Local Rules and Regulations.

Cut off the casing of cased wells at least 12 inches below the existing surface or 12 inches below the elevation of the finished graded surface, whichever is lower. Water wells, as referred to herein, are defined either as artesian or non-artesian, as follows:

1. An artesian well is an artificial hole in the ground from which water supplies may be obtained and which penetrates any water-bearing rock, the water in which is raised to the surface by natural flow or which rises to an elevation above the top of the water-bearing bed. Artesian wells are further defined to include all holes drilled as a source of water that penetrate any water-bearing beds that are a part of the artesian water system of Florida, as determined by representatives of the applicable Water Management District.
2. A non-artesian (water-table) well is a well in which the source of water is an unconfined aquifer. The water in a non-artesian well does not rise above the source bed.

110-10.2 Leveling Terrain: Within the areas between the limits of construction and the outer limits of clearing and grubbing, fill all holes and other depressions, and cut down all mounds and ridges. Make the area of a sufficient uniform contour so that the Department's subsequent mowing and cutting operations are not hindered by irregularity of terrain. Perform this work regardless of whether the irregularities were the result of construction operations or existed originally.

110-10.3 Mailboxes: When the Contract Documents require furnishing and installing mailboxes, permit each owner to remove the existing mailbox. Work with the Local Postmaster to develop a method of temporary mail service for the period between removal and installation of the new mailboxes. Install the mailboxes in accordance with the Standard Plans.

110-11 Method of Measurement.

110-11.1 Clearing and Grubbing: The quantity to be paid for will be the lump sum quantity.

110-11.2 Selective Clearing and Grubbing: The quantity to be paid will be the plan quantity area in acres designated for Selective Clearing and Grubbing. The quantity to be paid for Tree Protection Barrier will be the linear foot measurement as shown in the Plans. Tree Root, Branch Pruning, and Tree Removal will be paid per each tree. Tree Removal per each will not be used where Clearing and Grubbing or Selective Clearing and Grubbing per acre is used.

110-11.3 Removal of Existing Bridges: The quantity to be paid for will be the lump sum quantity or quantities for the specific structures, or portions of structures to be removed.

110-11.4 Removal of Existing Concrete:

The quantity to be paid for will be the number of square yards of existing concrete elements, acceptably removed and disposed of, as specified. The quantity will be determined by actual measurement along the surface of the element before its removal. Measurements for appurtenances which have irregular surface configurations, such as curb and gutter, steps, and ditch pavement, will be the area as projected to an approximate horizontal plane. Where the removal of pavement areas is necessary only for the construction of box culverts, pipe culverts, storm sewers, inlets, manholes, etc., these areas will not be included in the measurements.

Area measurements for walls will be based on exposed vertical face measurements times the horizontal length of the wall.

110-11.5 Plugging Water Wells: The quantity to be paid for will be the number of water wells plugged, for each type of well (artesian or non-artesian).

110-11.6 Mailboxes: The quantity to be paid for will be the number of mailboxes acceptably furnished and installed.

110-11.7 Delivery of Salvageable Material to the Department The quantity to be paid for will be the Lump Sum quantity for delivery of salvageable materials to the Department, as indicated in the Plans.

110-11.8 General: In each case, except as provided below, where no item of separate payment for such work is included in the proposal, all costs of such work will be included in the various scheduled items in the Contract, or under specific items as specified herein below or elsewhere in the Contract.

110-12 Basis of Payment.

110-12.1 Clearing and Grubbing:

110-12.1.1 Lump Sum Payment: Price and payment will be full compensation for all clearing and grubbing required for the roadway right-of-way and for lateral ditches, channel changes, or other outfall areas, and any other clearing and grubbing indicated, or required for the construction of the entire project, including all necessary hauling, furnishing equipment, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain and the landscaping work of trimming, etc.

Where construction easements are specified in the Plans and the limits of clearing and grubbing for such easements are dependent upon the final construction requirements, no adjustment will be made in the lump sum price and payment, either over or under, for variations from the limits of the easement defined in the Plans.

110-12.1.2 When No Direct Payment is Provided: When no item for clearing and grubbing is included in the proposal, the Contractor shall include the cost of any work of clearing and grubbing which is necessary for the proper construction of the project in the

Contract price for the structure or other item of work for which such clearing and grubbing is required. The Contractor shall include the cost of all clearing and grubbing which might be necessary in pits or areas from which base material is obtained in the Contract price for the base in which such material is used. The clearing and grubbing of areas for obtaining stabilizing materials, where required only for the purpose of obtaining materials for stabilizing, will not be paid for separately.

110-12.2 Selective Clearing and Grubbing: Price and payment will be full compensation for all selective clearing and grubbing, including all necessary hauling, furnishing equipment, Certified Arborist, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain, root pruning and tree protection.

110-12.3 Removal of Existing Bridges: Price and payment will be full compensation for all work of removal and disposal of the designated bridges.

When direct payment for the removal of existing bridges is not provided in the proposal, the Contractor shall include the cost of removing all bridges in the Contract price for clearing and grubbing or, if no item of clearing and grubbing is included, in the compensation for the other items covering the new bridge being constructed.

110-12.4 Removal of Existing Concrete: Price and payment will be full compensation for performing and completing all the work of removal and satisfactory disposal.

When no separate item for this work is included, the Contractor shall include the costs of this work in the Contract price for the item of clearing and grubbing or for the pipe or other structure for which the concrete removal is required.

110-12.5 Plugging Water Wells: Price and payment will be full compensation for each type of well acceptably plugged.

If a water well requiring plugging is encountered and the Contract contains no price for plugging wells of that specific type, the plugging of such well will be paid for as unforeseeable work.

110-12.6 Mailboxes: Price and payment will be full compensation for all work and materials required, including supports and numbers.

110-12.7 Delivery of Salvageable Material to the Department: Price and payment will be full compensation for all work required for delivery of the materials to the Department.

110-12.8 Payment Items: Payment will be made under:

Item No. 110- 1-	Clearing and Grubbing - lump sum.
Item No. 110- 2-	Selective Clearing and Grubbing Area - acre.
Item No. 110- 3-	Removal of Existing Bridges - lump sum.
Item No. 110- 4-	Removal of Existing Concrete - per square yard.
Item No. 110- 5-	Plugging Water Wells (Artesian) - each.
Item No. 110- 6-	Plugging Water Wells (Non-Artesian) - each.
Item No. 110- 7-	Mailbox (Furnish and Install) - each.
Item No. 110- 21	Tree Protection Barrier - per linear foot.
Item No. 110- 22	Tree Root and Branch Pruning - per each tree.
Item No. 110- 23	Tree Removal - per each tree.
Item No. 110- 86-	Delivery of Salvageable Material to FDOT - lump sum.

EARTHWORK AND RELATED OPERATIONS

SECTION 120 EXCAVATION AND EMBANKMENT

120-1 Description.

120-1.1 General: Excavate and construct embankments as required for the roadway, ditches, channel changes and borrow material. Use suitable excavated material or authorized borrow to prepare subgrades and foundations. Construct embankments in accordance with Standard Plans, Index 120-001. Compact and dress excavated areas and embankments.

Meet the requirements of Section 110 for excavation of material for clearing and grubbing and Section 125 for excavation and backfilling of structures and pipe. Material displaced by the storm sewer or drainage structure system is not included in the earthwork quantities shown in the Contract Documents.

The existing surface may be a combination of the following:

1. The original unpaved ground line;
2. The bottom of the existing pavement;
3. The bottom of existing features removed by clearing and grubbing;
4. The bottom of the existing base, if the base is to be removed.

The finished graded surface includes the completed grades of side slopes, unpaved shoulders, and the bottom of the base for flexible or rigid pavement.

120-1.2 Unidentified Areas of Contamination: When encountering or exposing any abnormal condition indicating the presence of contaminated materials, cease operations immediately in the vicinity and notify the Engineer. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal may indicate the presence of contaminated materials and must be treated with extreme caution.

Make every effort to minimize the spread of contamination into uncontaminated areas. Immediately provide for the health and safety of all workers at the job site and make provisions necessary for the health and safety of the public that may be exposed to any potentially hazardous conditions. Ensure provisions adhere to all applicable laws, rules or regulations covering potentially hazardous conditions and will be in a manner commensurate with the gravity of the conditions.

The Engineer will notify the District Contamination Impact Coordinator (DCIC) who will coordinate selecting and tasking the Department's Contamination Assessment/Remediation Contractor (CAR). Provide access to the potentially contaminated area. Preliminary investigation by the CAR Contractor will determine the course of action necessary for site security and the steps necessary under applicable laws, rules, and regulations for additional assessment and/or remediation work to resolve the contamination issue.

The CAR Contractor will delineate the contamination areas, any staging or holding area required; and, in cooperation with the Prime Contractor and Engineer, develop a work plan that will provide the CAR Contractor's operations schedule with projected completion dates for the final resolution of the contamination issue.

The CAR Contractor will maintain jurisdiction over activities inside any outlined contaminated areas and any associated staging holding areas. The CAR Contractor will be responsible for the health and safety of workers within the delineated areas. Provide continuous

access to these areas for the CAR Contractor and representatives of regulatory or enforcement agencies having jurisdiction.

Both Contractors will use the schedule as a basis for planning the completion of both work efforts. The Engineer may grant the Contract Time extensions according to the provisions of 8-7.3.2.

Cooperate with the CAR Contractor to expedite integration of the CAR Contractor's operations into the construction project. The Prime Contractor is not expected to engage in routine construction activities, such as excavating, grading, or any type of soil manipulation, or any construction processes required if handling of contaminated soil, surface water or ground water is involved. All routine construction activities requiring the handling of contaminated soil, surface water or groundwater will be by the CAR Contractor. Adjustments to quantities or to Contract unit prices will be made according to work additions or reductions on the part of the Prime Contractor in accordance with 4-3.

The Engineer will direct the Prime Contractor when operations may resume in the affected area.

120-2 Classifications of Excavation.

120-2.1 General: The Department may classify excavation specified under this Section for payment as any of the following: regular excavation, subsoil excavation, lateral ditch excavation, and channel excavation.

If the proposal does not show subsoil excavation or lateral ditch excavation as separate items of payment, include such excavation under the item of regular excavation.

If the proposal shows lateral ditch excavation as a separate item of payment, but does not show channel excavation as a separate item of payment, include such excavation under the item of lateral ditch excavation. Otherwise, include channel excavation under the item of regular excavation.

120-2.2 Regular Excavation: Regular excavation includes roadway excavation and borrow excavation, as defined below for each.

120-2.2.1 Roadway Excavation: Roadway excavation consists of the excavation and the utilization or disposal of all materials necessary for the construction of the roadway, ditches, channel changes, etc., except for removal of existing pavement as defined in Section 110.

120-2.2.2 Borrow Excavation: Borrow excavation consists of the excavation and utilization of material from authorized borrow pits, including only material that is suitable for the construction of roadway embankments or of other embankments covered by the Contract.

A Cost Savings Initiative Proposal (CSIP) submittal based on using borrow material from within the project limits will not be considered.

120-2.3 Subsoil Excavation: Subsoil excavation consists of the excavation and disposal of muck, clay, rock, or any other material that is unsuitable in its original position and that is excavated below the existing surface. For pond and ditches that identify the placement of a blanket material, the existing surface is template as the bottom of the blanket material. Subsoil excavation also consists of the excavation of all suitable material within the above limits as necessary to excavate the unsuitable material. Consider the limits of subsoil excavation indicated in the Plans as being particularly variable, in accordance with the field conditions actually encountered.

The quantity of material required to replace the excavated material and to raise the elevation of the roadway to the bottom of the template will be paid for under embankment or borrow excavation (Truck Measure).

120-2.4 Lateral Ditch Excavation: Lateral ditch excavation consists of all excavation of inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right-of-way. Dress lateral ditches to the grade and finished graded surface shown in the Plans.

120-2.5 Channel Excavation: Channel excavation consists of the excavation and satisfactory disposal of all materials from within the limits of the channel as shown in the Plans.

120-3 Preliminary Soils Investigations.

When the Plans contain the results of a soil survey, do not assume such data is a guarantee of the depth, extent, or character of material present.

120-4 Removal of Unsuitable Materials and Existing Roads.

120-4.1 Subsoil Excavation: Where muck, rock, clay, or other material within the limits of the roadway is unsuitable in its original position, excavate such material to the depths shown in the Plans as the removal limits or as indicated by the Engineer, and backfill with suitable material. Where the removal of plastic soils is required, meet a construction tolerance, of plus or minus 0.2 foot in depth and plus or minus 6 inches (each side) in width.

120-4.2 Construction over Existing Old Road: Where a new roadway is to be constructed over an old one, completely remove the existing flexible and Portland cement concrete pavement for the entire limits of the width and depth in accordance with Section 110. Compact disturbed material in accordance with Section 120 or 160, whichever material applies. If indicated in the Plans, remove the existing base in accordance with Section 110.

120-5 Disposal of Surplus and Unsuitable Material.

120-5.1 Ownership of Excavated Materials: Dispose of surplus and excavated materials as shown in the Plans or, if the Plans do not indicate the method of disposal, take ownership of the materials and dispose of them outside the right-of-way.

120-5.2 Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.1, when approved by the Engineer, in rural undeveloped areas, the Contractor may place muck (A-8 material) on the slopes, or store it alongside the roadway, provided there is a clear distance of at least 6 feet between the roadway grading limits and the muck, and the Contractor dresses the muck to present a neat appearance. In addition, the Contractor may also dispose of this material by placing it on the slopes in developed areas where, in the opinion of the Engineer, this will result in an aesthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where the Engineer permits the disposal of muck or other unsuitable material inside the right-of-way limits, do not place such material in a manner which will impede the inflow or outfall of any channel or side ditches. The Engineer will determine the limits adjacent to channels within which such materials may be disposed.

120-5.3 Disposal of Paving Materials: Unless otherwise noted, take ownership of paving materials, such as paving brick, asphalt block, concrete slab, sidewalk, curb and gutter, etc., excavated in the removal of existing pavements, and dispose of them outside the right-of-way. If the materials are to remain the property of the Department, place them in neat piles as directed. Existing base materials that are removed may be incorporated in the stabilized portion

of the subgrade in accordance with Section 160. If the construction sequence allows, incorporate all existing base material into the project as allowed by the Contract Documents.

120-5.4 Disposal Areas: Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation.

Provide areas for disposal of removed paving materials out of sight of the project and at least 300 feet from the nearest roadway right-of-way line of any State maintained road. If the materials are buried, disregard the 300-foot limitation.

120-6 Borrow.

120-6.1 Materials for Borrow: Do not open borrow pits until the Engineer has approved their location.

Prior to the purchase or use of any borrow pit materials, provide the Engineer with a written certification of borrow pit compliance meeting the requirements of Section 337.0262, Florida Statutes.

Do not provide borrow materials that are polluted as defined in Chapter 376 of the Florida Statutes (oil of any kind and in any form, gasoline, pesticides, ammonia, chlorine, and derivatives thereof, excluding liquefied petroleum gas) in concentrations above any local, State, or Federal standards.

Prior to placing any borrow material that is the product of soil incineration, provide the Engineer with a copy of the Certificate of Materials Recycling and Post Burn Analysis showing that the material is below all allowable pollutant concentrations.

120-6.2 Furnishing of Borrow Areas: To obtain the Engineer's approval to use an off-site construction activity area that involves excavation such as a borrow pit or local aggregate pit, request in writing, a review for cultural resources involvement. Send the request to the Division of Historical Resources (DHR), Department of State, State Historic Preservation Officer, Tallahassee, FL. As a minimum, include in the request the Project Identification Number, the County, a description of the property with Township, Range, Section, etc., the dimensions of the area to be affected, and a location map. Do not start any work at the off-site construction activity area prior to receiving clearance from the DHR that no additional research is warranted.

For certain locations, the DHR will require a Cultural Resources Assessment (CRA) Survey before approval can be granted. When this is required, secure professional archaeological services to complete an historical and archaeological survey report. Submit the report to the DHR and to the Department. The Engineer will determine final approval or rejection of off-site construction activity areas based on input from the DHR.

Before receiving approval or before use of borrow areas, obtain written clearance from the Engineer concerning compliance with the Federal Endangered Species Act and other Wildlife Regulations as specified in 7-1.4 and Section 4(f) of the USDOT Act as specified in 7-1.8.

The Department will adjust Contract Time in accordance with 8-7 for any suspension of operations required to comply with this Article. The Department will not accept any monetary claims due to delays or loss of off-site construction activity areas.

Except where the Plans specifically call for the use of a particular borrow or dredging area, the Contractor may substitute borrow or dredging areas of his own choosing provided the Engineer determines the materials from such areas meet the Department's standards and other requirements for stability for use in the particular sections of the work in which it is to be placed, and the Contractor absorbs any increase in hauling or other costs. Stake the corners of

the proposed borrow area and provide the necessary equipment along with an operator in order for the Engineer to investigate the borrow area. The Engineer will determine test locations, collect samples, and perform tests to investigate the proposed borrow area based on soil strata and required soil properties. The Engineer will approve use of materials from the proposed area based on test results and project requirements. Final acceptance of materials will be based on Point of Use Test as described in 6-1.2.4.

Before using any borrow material from any substitute areas, obtain the Engineer's approval, in writing, for the use of the particular areas, and, where applicable, ensure that the Engineer has surveyed the surface. Upon such written approval by the Engineer, consider the substitute areas as designated borrow areas.

When furnishing the dredging or borrow areas, supply the Department with evidence that the necessary permits, rights, or waivers for the use of such areas have been secured.

Do not excavate any part of a Contractor furnished borrow area which is less than 300 feet from the right-of-way of the project or any State Road until the Engineer has approved a plan for landscaping and restoring the disturbed area. Perform this landscaping and land restoration at no expense to the Department, prior to final acceptance of the project. Do not provide a borrow area closer than 25 feet to the right-of-way of any state road. In Department furnished borrow pits, do not excavate material within 5 feet of adjacent property lines.

Upon completion of excavation, neatly shape, dress, grass, vegetate, landscape, and drain all exposed areas including haul roads, as necessary so as not to present an objectionable appearance.

Meet the requirements of Section 104 when furnishing borrow areas, regardless of location.

120-6.3 Borrow Material for Shoulder Build-up: When indicated in the Plans, furnish borrow material with a specific minimum bearing value, for building up of existing shoulders. Blend materials as necessary to achieve this specified minimum bearing value prior to placing the materials on the shoulders. Take samples of this borrow material at the pit or blended stockpile. Include all costs of providing a material with the required bearing value in the Contract unit price for borrow material.

120-6.4 Haul Routes for Borrow Pits: Provide and maintain, at no expense to the Department, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.

Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible, and keep noise from hauling operations to a minimum. Advise the Engineer in writing of all proposed haul routes.

120-6.5 Authorization for Use of Borrow: When the item of borrow excavation is included in the Contract, use borrow only when sufficient quantities of suitable material are not available from roadway and drainage excavation, to properly construct the embankment, subgrade, and shoulders, and to complete the backfilling of structures. Do not use borrow material until so ordered by the Engineer, and then only use material from approved borrow pits.

120-7 Materials for Embankment.

120-7.1 Use of Materials Excavated from the Roadway and Appurtenances: Assume responsibility for determining the suitability of excavated material for use on the project in

accordance with the applicable Contract Documents. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

120-7.2 General Requirements for Embankment Materials: Construct embankments of acceptable material including reclaimed asphalt pavement (RAP), recycled concrete aggregate (RCA) and Portland cement concrete rubble, but containing no muck, stumps, roots, brush, vegetable matter, rubbish, reinforcement bar or other material that does not compact into a suitable and enduring roadbed. Do not use RAP or RCA in the top 3 feet of slopes and shoulders that are to be grassed or have other type of vegetation established. Do not use RAP or RCA in stormwater management facility fill slopes or permitted wetland impact areas.

Remove all waste material designated as undesirable. Use material in embankment construction in accordance with Plans or as the Engineer directs.

Complete the embankment using maximum particle sizes (in any dimension) as follows:

1. In top 12 inches: 3-1/2 inches (in any dimension).
2. 12 to 24 inches: 6 inches (in any dimension).
3. In the depth below 24 inches: not to exceed 12 inches (in any dimension) or the compacted thickness of the layer being placed, whichever is less.

Spread all material so that the larger particles are separated from each other to minimize voids between them during compaction. Compact around these rocks in accordance with 120-9.2.

When and where approved by the Engineer, the Contractor may place larger rocks (not to exceed 18 inches in any dimension) outside the 1:2 slope and at least 4 feet or more below the bottom of the base. Compact around these rocks to a firmness equal to that of the supporting soil. Construct grassed embankment areas in accordance with 120-9.2.5. Where constructing embankments adjacent to bridge end bents or abutments, do not place rock larger than 3-1/2 inches in diameter within 3 feet of the location of any end-bent piling.

120-7.3 Materials Used at Pipes, Culverts, etc.: Construct embankments over and around pipes, culverts, and bridge foundations with selected materials.

120-8 Embankment Construction.

120-8.1 General: Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment. Do not construct another LOT over an untested LOT without the Engineer's approval in writing.

For construction of mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts and retaining wall systems, a LOT is defined as a single lift of finished embankment not to exceed 500 feet.

For construction of shoulder-only areas, shared use paths, and sidewalks areas, a LOT is defined as a single lift of finished embankment not to exceed 2000 feet.

Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

120-8.2 Dry Fill Method:

120-8.2.1 General: Construct embankments to meet the compaction requirements in 120-9 and in accordance with the acceptance program requirements in 120-10.

As far as practicable, distribute traffic over the work during the construction of embankments so as to cover the maximum area of the surface of each layer.

Construct embankment using the dry fill method whenever normal dewatering equipment and methods can accomplish the needed dewatering.

120-8.2.1.1 Maximum Compacted Lift Thickness Requirements:

Construct the embankment in successive layers with lifts up to a maximum listed in Table 120-1 below based on the embankment material classification group.

Table 120-1			
Group	AASHTO Soil Class	Maximum Lift Thickness	Thick Lift Control Test Section Requirements
1	A-3	12 inches	Not Needed
	A-2-4 (No. 200 Sieve $\leq$ 15%)		
2	A-1	6 inches without Control Test Section	Maximum of 12 inches per 120-8.2.1.2
	A-2-4 (No. 200 Sieve $>$ 15%)		
	A-2-5, A-2-6, A-2-7, A-4, A-5, A-6		
	A-7 (Liquid Limit $<$ 50)		

120-8.2.1.2 Thick Lift Requirements:

For embankment materials classified as Group 2 in Table 120-1 above, the option to perform thick lift construction in successive layers of not more than 12 inches compacted thickness may be used after meeting the following requirements:

1. Notify the Engineer and obtain approval in writing prior to beginning construction of a test section. Demonstrate the possession and control of compacting equipment sufficient to achieve density required by 120-10.2 for the full depth of a thicker lift.
2. Construct a test section of the length of one full LOT of not less than 500 feet.
3. Perform five Quality Control (QC) tests at random locations within the test section.
 - a. All five QC tests and a Department Verification test must meet the density required by 120-10.2.
 - b. Identify the test section with the compaction effort and soil classification in the Department's Earthwork Records System (ERS).
4. Obtain Engineer's approval in writing for the compaction effort after completing a successful test section.

In case of a change in compaction effort or soil classification, failing QC test or when the QC tests cannot be verified, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time. Construct all layers approximately parallel to the centerline profile of the road.

The Engineer reserves the right to terminate the Contractor's use of thick lift construction. Whenever the Engineer determines that the Contractor is not achieving satisfactory results, revert to the 6-inch compacted lifts.

120-8.2.1.3 Equipment and Methods:

Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

When normal dewatering does not adequately remove the water, the Engineer may require the embankment material to be placed in the water or on low swampy ground in accordance with 120-9.2.3.

120-8.2.2 Placing in Unstable Areas: When depositing fill material in water, or on low swampy ground that will not support the weight of hauling equipment, construct the embankment by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the embankment in layers in accordance with the applicable provisions of 120-9.2.2.

120-8.2.3 Placing on Steep Slopes: When constructing an embankment on a hillside sloping more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut steps into the surface of the existing slope on which the embankment is to be placed.

120-8.2.4 Placing Outside the Standard Minimum Slope: The standard minimum slope is defined as the plane described by a one (vertical) to two (horizontal) slope downward from the roadway shoulder point or the gutter line, in accordance with Standard Plans, Index 120-001 and 120-002. Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard minimum slope, place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material which is suitable for normal embankment, outside such standard minimum slope, in 18 inch layers. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

120-8.3 Hydraulic Method:

120-8.3.1 Method of Placing: When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the embankment by such method. Place and compact any dredged material that is reworked or moved and placed in its final position by any other method, as specified in 120-9.2. Baffles or any other form of construction may be used if the slopes of the embankments are not steeper than indicated in the Plans. Remove all timber used for temporary bulkheads or baffles from the embankment, and fill and thoroughly compact all voids. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

120-8.3.2 Excess Material: Do not use any excess material placed outside the prescribed slopes or below the normal high-water table to raise the fill areas. Remove only the portion of this material required for dressing the slopes.

120-8.3.3 Protection of Openings in Embankment: Maintain openings in the embankments at the bridge sites. Remove any material which invades these openings or existing channels without additional compensation to provide the same existing channel depth as before the construction of the embankment. Do not excavate or dredge any material within 200 feet of the toe of the proposed embankment.

120-8.4 Reclaimed Asphalt Pavement (RAP) Method:

120-8.4.1 General: Use only RAP material stored at facilities with an approved Florida Department of Environmental Protection Stormwater permit or transferred directly from a milling project to the Department project. Certify the source if RAP material is from an identifiable Department project. Do not use RAP material in the following areas: construction areas that are below the seasonal high groundwater table elevation; MSE Wall backfill; underneath MSE Walls or the top 6 inches of embankment.

Prior to placement, submit documentation to the Engineer for his approval, outlining the proposed location of the RAP material.

120-8.4.2 Soil and RAP Mixture: Place the RAP material at the location and spread uniformly, using approved methods to obtain a maximum layer thickness of 4 inches. Mix this 4-inch maximum layer of RAP with a loose soil layer 8 to 10 inches thick. After mixing, meet all embankment utilization requirements of Standard Plans, Index 120-001 for the location used. The total RAP and other embankment material shall not exceed 12 inches per lift after mixing and compaction if the Contractor can demonstrate that the density of the mixture can be achieved. Perform mixing using rotary tillers or other equipment meeting the approval of the Engineer. The Engineer will determine the order in which to spread the two materials. Mix both materials to the full depth. Ensure that the finished layer will have the thickness and shape required by the typical section. Demonstrate the feasibility of this construction method by successfully completing a 500-foot long test section.

120-8.4.3 Alternate Soil and RAP Layer Construction: Construct soil in 6-inch to 12-inch compacted lifts and RAP in alternate layers with 6-inch maximum compacted lifts. Use soil with a minimum LBR value of 40 to prevent failure during compaction of the overlying RAP layer. Demonstrate the feasibility of this construction method by successfully completing a 500-foot long test section.

120-9 Compaction Requirements.

120-9.1 Moisture Content: Compact the materials at a moisture content such that the specified density can be attained. If necessary to attain the specified density, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate.

120-9.2 Compaction of Embankments:

120-9.2.1 General: Uniformly compact each layer, using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

120-9.2.2 Compaction Over Unstable Foundations: Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided in 120-8.2.2), compact the top 6 inches (compacted thickness) of such layer to the density as specified in 120-10.2.

120-9.2.3 Compaction Where Plastic Material Has Been Removed: Where unsuitable material is removed and the remaining surface is of the A-4, A-5, A-6, or A-7 Soil Groups (see AASHTO M 145), as determined by the Engineer, compact the surface of the excavated area by rolling with a sheepsfoot roller exerting a compression of at least 250 psi on the tamper feet, for the full width of the roadbed (subgrade and shoulders). Perform rolling before beginning any backfill and continue until the roller feet do not penetrate the surface more than 1 inch. Do not perform such rolling where the remaining surface is below the normal water table and covered with water. Vary the procedure and equipment required for this operation at the discretion of the Engineer.

120-9.2.4 Compaction of Grassed Shoulder Areas: For the upper 6-inch layer of all shoulders which are to be grassed, since no specific density is required, compact only to the extent needed for planting.

120-9.2.5 Compaction of Grassed Embankment Areas: Do not compact the outer layers of any embankments where plant growth will be established. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting

operations. Do not place RAP or RAP blended material within the top 12 inches of areas to be grassed.

120-9.3 Compaction for Pipes, Culverts, etc.: Compact the backfill of trenches to the densities specified for embankment or subgrade, as applicable, and in accordance with the requirements of 125-9.2.

Thoroughly compact embankments over and around pipes, culverts, and bridges in a manner which will not place undue stress on the structures, and in accordance with the requirements of 125-9.2.

120-9.4 Compaction of Subgrade: If the Plans do not provide for stabilizing, compact the subgrade in both cuts and fills, to the density specified in 120-10.2. For cut areas, determine Standard Proctor Maximum Density in accordance with FM 1-T099 at a frequency of one per mile or when there is a change in soil type, whichever occurs first. For undisturbed soils, do not apply density requirements where constructing paved shoulders 5 feet or less in width.

Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

Maintain the required density until the base or pavement is placed on the subgrade.

120-10 Acceptance Program.

120-10.1 General Requirements:

120-10.1.1 Equipment Comparison: Before initial production, perform an initial three-way density gauge comparison with Verification and Independent Assurance (IA) gauges to validate QC and Verification gauges. When comparing the wet density between two density gauges, three sets of calculations must be performed (IA to QC, IA to Verification, and QC to Verification) within the same test hole and same test depth. Ensure that the difference between any two wet densities does not exceed the tolerances listed in Table 120-2. Repair, calibrate, or replace any gauge that does not compare favorably with the IA gauge.

Table 120-2			
Condition	Comparison Type	Manufacturer	Tolerance
Condition 1: When both gauges in the comparison are Nuclear Density Gauges (NDG)	NDG to NDG	Same Manufacturer	2 lb/ft ³
	NDG to NDG	Different Manufacturer	3 lb/ft ³
Condition 2: When one of the gauges in the comparison is a Low-Activity Nuclear Density Gauge (L-NDG)	L-NDG to L-NDG	Same Manufacturer	2 lb/ft ³
	L-NDG to L-NDG	Different Manufacturer	3 lb/ft ³
	NDG to L-NDG	Same/Different Manufacturer	

Ensure the equipment intended to determine the moisture content of soils by Speedy moisture tester in accordance with FM 5-507 has been calibrated and visually inspected by the Engineer.

To validate additional nuclear density gauges, perform a two-way comparison analysis between the QC nuclear gauge and the Verification nuclear gauge any time a nuclear gauge is first brought to the project or returns from annual calibration/repair. At least one of the nuclear gauges in the two-way comparison analysis must have been previously

validated in a comparison. Repair or replace any QC gauge that does not compare favorably with a validated Verification gauge at any time during the remainder of the project. Calibrate all gauges annually.

120-10.1.2 Initial Production LOT: Before construction of any production LOT, prepare a 500-foot initial control section consisting of one full LOT. Notify the Engineer in writing at least 24 hours prior to production of the initial control section. Perform all QC tests required in 120-10.1.4 with the Engineer present. Do not begin constructing another LOT until successfully completing the initial production LOT.

If the QC test result fails the density requirements of 120-10.2, correct the areas of non-compliance. The QC and Verification tests will then be repeated.

120-10.1.3 Density over 105%: When a QC computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, the Engineer will perform an Independent Verification (IV) density test within 5 feet. If the IV density results in a value greater than 105%, the Engineer will investigate the compaction methods, examine the applicable Standard Proctor Maximum Density and material description. The Engineer may collect and test an IV Standard Proctor Maximum Density sample for acceptance in accordance with the criteria of 120-10.2.

120-10.1.4 Quality Control (QC) Tests:

120-10.1.4.1 Standard Proctor Maximum Density Determination:

Determine the QC standard Proctor maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed in 120-10.2.

120-10.1.4.2 Density Testing Requirements: Ensure compliance to the requirements of 120-10.2 by Nuclear Density testing in accordance with FM 1-T310. Determine the in-place moisture content for each density test in accordance with FM 1-T310, FM 5-507 (Speedy Moisture), or ASTM D-4643 (Microwave Oven), whichever is applicable.

120-10.1.4.3 Soil Classification: Perform soil classification tests on the sample collected in 120-10.1.4.1, in accordance with AASHTO T88, T89, T90, and FM 1-T267. Classify soils in accordance with AASHTO M145 in order to determine compliance with embankment utilization requirements as specified in Standard Plans, Index 120-001.

120-10.1.5 Department Verification: The Engineer will conduct Verification tests in order to accept all materials and work associated with 120-10.1.4. The Engineer will verify the QC results if they meet the Verification Comparison Criteria, otherwise the Engineer will implement Resolution procedures.

The Engineer will select test locations, including Station, Offset, and Lift, using a random number generator, based on the LOTs under consideration. Each Verification test evaluates all work represented by the QC testing completed in those LOTs.

In addition to the Verification testing, the Engineer may perform additional Independent Verification (IV) testing. The Engineer will evaluate and act upon the IV test results in the same manner as Verification test results.

When the project requires less than four QC tests per material type, the Engineer reserves the right to accept the materials and work through visual inspection.

120-10.1.6 Reduced Testing Frequency: Obtain the Engineer's written approval for the option to reduce density testing frequency to one test every two LOTs if Resolution testing was not required for 12 consecutive verified LOTs, or if Resolution testing was required, but the QC test data was upheld and all substantiating tests are recorded in the ERS.

Generate random numbers based on the two LOTs under consideration. When QC test frequency is reduced to one every two LOTs, obtain the Engineer's approval to place more than one LOT over an untested LOT. Assure similar compaction efforts for the untested LOTs. If the Verification test fails, and QC test data is not upheld by Resolution testing, the QC testing will revert to the original frequency of one QC test per LOT. Do not apply reduced testing frequency in construction of shoulder-only areas, shared use paths, sidewalks, and first and last lift.

120-10.1.7 Payment for Resolution Tests: If the Resolution laboratory results compare favorably with the QC results, the Department will pay for Resolution testing. No additional compensation, either monetary or time, will be made for the impacts of any such testing.

If the Resolution laboratory results do not compare favorably with the QC results, the costs of the Resolution testing will be deducted from monthly estimates. No additional time will be granted for the impacts of any such testing.

120-10.2 Acceptance Criteria: Obtain a minimum QC density of 100% of the standard Proctor maximum density as determined by FM 1-T099, with the following exceptions: embankment constructed by the hydraulic method as specified in 120-8.3; material placed outside the standard minimum slope as specified in 120-8.2.4 except when a structure is supported on existing embankment; and other areas specifically excluded herein.

120-10.3 Additional Requirements:

120-10.3.1 Frequency: Conduct QC sampling and testing at a minimum frequency listed in Table 120-3 below. The Engineer will perform Verification sampling and tests at a minimum frequency listed in Table 120-3 below.

Table 120-3			
Test Name	Quality Control	Verification	Verification of Shoulder-Only Areas, Shared Use Paths, and Sidewalks
Standard Proctor Maximum Density	One per soil type	One per soil type	One per soil type
Density	One per LOT	One per four LOTs and for wet conditions, the first lift not affected by water	One per two LOTs
Soil Classification and Organic Content	One per Standard Proctor Maximum Density	One per Standard Proctor Maximum Density	One per Standard Proctor Maximum Density

120-10.3.2 Test Selection and Reporting: Determine test locations including stations and offsets, using the random number generator approved by the Engineer. Record data directly in the ERS section of the Department's database. Do not use notepads or worksheets to record data for later transfer to the ERS. Notify the Engineer upon successful completion of QC testing on each LOT prior to placing another lift on top.

120-10.4 Verification Comparison Criteria and Resolution Procedures:

120-10.4.1 Standard Proctor Maximum Density Determination: The Engineer will verify the QC results if the results compare within 4.5 lb/ft³ of the Verification test result.

Otherwise, the Engineer will take one additional sample of material from the soil type in question. The State Materials Office (SMO) or an AASHTO accredited laboratory designated by the SMO will perform Resolution testing. The material will be sampled and tested in accordance with FM 1-T099.

The Engineer will compare the Resolution test results with the QC test results. If all Resolution test results are within 4.5 lb/ft³ of the corresponding QC test results, the Engineer will use the QC test results for material acceptance purposes for each LOT with that soil type. If the Resolution test result is not within 4.5 lb/ft³ of the Contractor's QC test, the Verification test result will be used for material acceptance purposes.

120-10.4.2 Density Testing: When a Verification or IV density test fails the acceptance criteria, perform an equipment comparison analysis using the same test hole and same test depth in accordance with 120-10.1.1. If the equipment compares favorably, then retest the site within a 5-foot radius of the failing Verification's test. Otherwise, repair, calibrate, or replace density gauge in accordance with 120-10.1.1.

If the QC retest meets the acceptance criteria, the Engineer will accept those LOTs in question. Otherwise, rework and retest the LOT. The Engineer will perform new verification testing. Record the equipment comparison data and the QC test results in the ERS section of the Department's database.

120-10.4.3 Soil Classification: The Engineer will verify the QC test results if the Verification and the QC test results both match the soil utilization symbol listed in Standard Plans, Index 120-001. Otherwise, the Engineer will test the sample retained for Resolution testing. The SMO or an AASHTO accredited laboratory designated by the SMO will perform the Resolution testing. The material will be sampled and tested in accordance with AASHTO T 88, T 89, and T 90, and classified in accordance with AASHTO M 145.

The Engineer will compare the Resolution test results with the QC test results. If the Resolution test matches the QC soil utilization symbol, the Engineer will use the QC soil utilization symbol for material acceptance purposes. If the Resolution test result does not match the Contractor's QC soil utilization symbol, the Verification test results will be used for material acceptance purposes.

120-10.4.4 Organic Content: The Engineer will verify the QC test results if the Verification test results satisfy the organic content test criteria in Standard Plans, Index 120-001. Otherwise, the Engineer will test the sample retained for Resolution testing. The SMO or an AASHTO accredited laboratory designated by the SMO will perform Resolution testing. The material will be sampled and tested in accordance with FM 1-T 267. If the Resolution test results satisfy the required criteria, material of that soil type will be verified and accepted. If the Resolution test results do not meet the required criteria, reject the material and reconstruct with acceptable material.

120-10.5 Disposition of Defective Materials: Assume responsibility for removing and replacing all defective material, as defined in Section 6.

Alternately, submit an Engineering Analysis Scope in accordance with 6-4 to determine the disposition of the material.

120-11 Maintenance and Protection of Work.

While construction is in progress, maintain adequate drainage for the roadbed at all times. Maintain a shoulder at least 3 feet wide adjacent to all pavement or base construction in order to provide support for the edges.

Maintain all earthwork construction throughout the life of the Contract and take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. Repair, at no expense to the Department except as otherwise provided herein, any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Perform maintenance and protection of earthwork construction in accordance with Section 104.

Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines and grades, shown in the Plans, until final acceptance of the project.

120-12 Construction.

120-12.1 Construction Tolerances: Shape the surface of the earthwork to conform to the lines and grades as shown in the Plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the finished graded surface with the following exceptions:

1. Shape the surface of shoulders to within 0.1 foot of the finished graded surface shown in the Plans.
2. Shape the earthwork to match adjacent pavement, curb, sidewalk, structures, etc.
3. Shape the bottom of conveyance ditches so that the ditch impounds no water.
4. When the work does not include construction of base or pavement, shape the entire roadbed (shoulder point to shoulder point) to within 0.1 foot above or below the Plan finished graded surface.
5. When the work includes permitted linear stormwater management facilities, shape the swales and ditch blocks to within 0.1 foot of the finished graded surface shown in the Plans.

Ensure that the shoulder lines do not vary horizontally more than 0.3 foot from the true lines shown in the Plans.

120-12.2 Operations Adjacent to Pavement: Carefully dress areas adjacent to pavement areas to avoid damage to such pavement. Complete grassing of shoulder areas prior to placing the final wearing course. Do not manipulate any embankment material on a pavement surface.

When shoulder dressing is underway adjacent to a pavement lane being used to maintain traffic, exercise extreme care to avoid interference with the safe movement of traffic.

120-13 Method of Measurement.

120-13.1 General: When payment for excavation is on a volumetric basis, the quantity to be paid for will be the volume, in cubic yards. The material will be measured in its original position by field survey or by photogrammetric means as designated by the Engineer, unless otherwise specified under the provisions for individual items.

Where subsoil excavation extends outside the lines shown in the Plans or authorized by the Engineer including allowable tolerances, and the space is backfilled with material obtained in additional authorized roadway or borrow excavation, the net fill, plus shrinkage allowance, will be excluded from the quantity of roadway excavation or borrow excavation to be paid for, as applicable.

The quantity of all material washed, blown, or placed beyond the limits of the finished graded surface will be determined by the Engineer and will be excluded from the quantity of roadway excavation or borrow excavation to be paid for, as applicable.

Subsoil excavation that extends outside the lines shown in the Plans or authorized by the Engineer including allowable tolerances will be excluded from the quantity to be paid for as subsoil excavation.

120-13.2 Roadway Excavation: The measurement will include only the net volume of material excavated between the original ground line or finished graded surface of an existing roadbed, as applicable, and the finished surface of new pavement, except that the measurement will also include all unavoidable slides which may occur in connection with excavation classified as roadway excavation.

The pay quantity will be the plan quantity provided that the excavation was accomplished in substantial compliance with the plan dimensions and subject to the provisions of 9-3.2 and 9-3.4. On designated 3-R Projects, regular excavation will be paid for at the Contract lump sum price provided that the excavation was accomplished in substantial compliance with the plan dimension.

120-13.3 Borrow Excavation: Measurement will be made on a loose volume basis, measured in trucks or other hauling equipment at the point of dumping on the road. If measurement is made in vehicles, level the material to facilitate accurate measurement.

Unsuitable material excavated from borrow pits where truck measurement is provided for and from any borrow pits furnished by the Contractor, will not be included in the quantity of excavation to be paid for.

120-13.4 Lateral Ditch Excavation: The measurement will include only material excavated within the lines and grades indicated in the Plans or as directed by the Engineer. The measurement will include the full length shown in the Plans or directed by the Engineer and acceptably completed. Excavation included for payment under Section 125 will not be included in this measurement.

The pay quantity will be the plan quantity provided that the excavation was accomplished in substantial compliance with the plan dimensions and subject to the provisions of 9-3.2 and 9-3.4.

120-13.5 Channel Excavation: The measurement will include only material excavated within the lines and grades indicated in the Plans or in accordance with authorized Plan changes. The measurement will include the full length shown in the Plans including any authorized changes thereto.

If shoaling occurs subsequent to excavation of a channel and the Engineer authorized the shoaled material to remain in place, the volume of any such material remaining within the limits of channel excavation shown in the Plans will be excluded from the measured quantity of channel excavation.

120-13.6 Subsoil Excavation: The measurement will include only material excavated within the lines and grades indicated in the Plans (including the tolerance permitted therefore) or as directed by the Engineer.

When no item for subsoil excavation is shown in the Contract but subsoil excavation is subsequently determined to be necessary, such unanticipated subsoil excavation will be paid for as provided in Article 4-4.

120-13.7 Embankment: The quantity will be at the plan quantity. Where payment for embankment is not to be included in the payment for the excavation and is to be paid for on a cubic yard basis for the item of embankment, the measurement will include material placed within the limits of the existing surface, to the finished graded surface as shown in the Plans, Standard Plans Index 120-001, or directed by the Engineer. Where embankment is constructed

over an existing road, the embankment measurement will include only the material actually placed up to the finished graded surface. If there are authorized changes in plan dimensions or if errors in plan quantities are detected, plan quantity will be adjusted as provided in 9-3.2.

Any overrun or underrun of plan quantity for subsoil excavation which results in a corresponding increase or decrease in embankment will be considered as an authorized plan change for adjustment purposes as defined in 9-3.2.2.

No payment will be made for embankment material used to replace unsuitable material excavated beyond the lines and grades shown in the Plans or ordered by the Engineer.

In no case will payment be made for material allowed to run out of the embankment on a flatter slope than indicated on the Plans. The Contractor shall make his own estimate on the volume of material actually required to obtain the pay section.

120-14 Basis of Payment.

120-14.1 General: Prices and payments for the various work items included in this Section will be full compensation for all work described herein, including excavating, dredging, pumping, hauling, placing, and compacting; dressing the surface of the earthwork; maintaining and protecting the complete earthwork.

The Department will not allow extra compensation for any reworking of materials. The Department will compensate for the cost of grassing or other permanent erosion control measures directed by the Engineer as provided in the Contract.

120-14.2 Excavation:

120-14.2.1 Items of Payment: When no classification of material is indicated in the Plans, and bids are taken only on regular excavation, the total quantity of all excavation specified under this Section will be paid for at the Contract unit price for regular excavation.

When separate classifications of excavation are shown in the proposal, the quantities of each of the various classes of materials so shown will be paid for at the Contract unit prices per cubic yard for regular excavation, lateral ditch excavation, subsoil excavation, and channel excavation, as applicable, and any of such classifications not so shown will be included under the item of regular excavation (except that if there is a classification for lateral ditch excavation shown and there is no classification for channel excavation, any channel excavation will be included under the item of lateral ditch excavation). As an exception on designated projects, regular excavation will be paid for at the Contract lump sum price.

120-14.2.2 Basic Work Included in Payments: Prices and payments will be full compensation for all work described under this Section, except for any excavation, or embankment which is specified to be included for payment under other items. Such prices and payments will include hauling; any reworking that may be necessary to accomplish final disposal as shown in the Plans; the dressing of shoulders, ditches and slopes; removal of trash, vegetation, etc., from the previously graded roadway where no item for clearing and grubbing is shown in the Plans; and compacting as required.

120-14.2.3 Additional Depth of Subsoil Excavation: Where subsoil excavation is made to a depth of 0 to 5 feet below the depth shown in the Plans, such excavation will be paid for at the unit price bid.

Where subsoil excavation is made to a depth greater than 5 feet, and up to 15 feet, deeper than the depth shown in the Plans, such excavation will be paid for at the unit price bid plus 25% of such unit price. Additional extra depth, more than 15 feet below such plan depth, will be considered as a change in the character of the work and will be paid for as unforeseeable work.

Where no subsoil excavation is shown in a particular location on the original Plans, payment for extra depth of subsoil will begin 5 feet below the lowest elevation on the finished graded surface.

120-14.2.4 Borrow Excavation: When the item of borrow excavation is included in the Contract, price and payment will also include the cost of furnishing the borrow areas and any necessary clearing and grubbing thereof, the removal of unsuitable material that it is necessary to excavate in order to obtain suitable borrow material, and also the costs incurred in complying with the provisions of 120-6.3.

120-14.2.5 Materials Excluded from Payment for the Excavation: No payment for excavation will be made for any excavation covered for payment under the item of embankment.

No payment will be made for the excavation of any materials which is used for purposes other than those shown in the Plans or designated by the Engineer. No payment will be made for materials excavated outside the lines and grades given by the Engineer, unless specifically authorized by the Engineer. As an exception, in operations of roadway excavation, all slides and falls of insecure masses of material beyond the regular slopes that are not due to lack of precaution on the part of the Contractor, will be paid for at the Contract unit price for the material involved. The removal of slides and falls of material classified as lateral ditch excavation or as subsoil excavation will not be paid for separately, but will be included in the Contract unit price for the pay quantity of these materials, measured as provided in 120-14.

120-14.3 Embankment:

120-14.3.1 General: Price and payment will be full compensation for all work specified in this Section, including all material for constructing the embankment, all excavating, dredging, pumping, placing and compacting of material for constructing the embankment complete, dressing of the surface of the roadway, maintenance and protection of the completed earthwork, and the removal of rubbish, vegetation, etc., from the roadway where no clearing and grubbing of the area is specified in the Plans. Also, such price and payment, in each case, will specifically include all costs of any roadway, lateral ditch, or channel excavation, unless such excavation is specifically shown to be paid for separately, regardless of whether the materials are utilized in the embankment.

120-14.3.2 Excluded Material: No payment will be made for the removal of muck or overburden from the dredging or borrow areas. No payment will be made for embankment material used to replace muck or other unsuitable material excavated beyond the lines and grades shown in the Plans or ordered by the Engineer.

120-14.3.3 Clearing and Grubbing: No payment will be made for any clearing and grubbing of the borrow or dredging areas. Where no clearing and grubbing of such areas is specified in the Plans, the cost of any necessary clearing and grubbing will be included in the Contract unit or lump sum price for Embankment.

120-14.3.4 Cost of Permits, Rights, and Waivers: Where the Contractor provides borrow or dredging areas of his own choosing, the cost of securing the necessary permits, rights or waivers will be included in the Contract price for embankment.

120-14.4 Payment Items: Payment will be made under:

Item No. 120- 1-	Regular Excavation - per cubic yard.
Item No. 120- 2-	Borrow Excavation - per cubic yard.
Item No. 120- 3-	Lateral Ditch Excavation - per cubic yard.

Item No. 120- 4-	Subsoil Excavation - per cubic yard.
Item No. 120- 5-	Channel Excavation - per cubic yard.
Item No. 120- 6-	Embankment - per cubic yard.
Item No. 120- 71-	Regular Excavation (3-R Projects) - lump sum.

SECTION 160 STABILIZING

160-1 Description.

Stabilize designated portions of the roadbed to provide a firm and unyielding subgrade, having the required bearing value specified in the Plans.

160-2 Materials.

Use only allowable material specified herein as stabilizing material. Stabilizing material may also be known as stabilizer.

160-2.1 Commercial Material: Commercial material used as stabilizer must meet the requirements of 914-2.1.

160-2.2 Local Material: Local materials as defined in 914-2.2 used as stabilizer must meet the requirement of Section 914. Submit test results to the Engineer at least 14 days prior to the stabilization operation.

160-2.2.1 Local Stabilizing Material: Sample and test material from each source and meet the requirements of Section 914. The Engineer will verify the Quality Control (QC) test results meet the requirements of Section 914. If the QC and Verification results do not compare, the Engineer will take one additional sample of material from the source in question and the State Materials Office (SMO) or an AASHTO accredited laboratory designated by the SMO will perform Resolution testing. If the Resolution test results satisfy the required criteria, material from that source will be verified and accepted. If the Resolution test results do not meet the required criteria, reject the material.

160-2.2.2 Reclaimed Asphalt Pavement (RAP): Obtain the Engineer's approval in writing for the option to use 100% RAP material. Material must be milled and stockpiled without blending or contaminating with any other material.

160-2.2.3 Reclaimed Asphalt Pavement (RAP) Blended Material: RAP blended material is defined as material meeting the requirements of 914-1 and 914-2.2 except for the limits for organic content. If the RAP blended material meets the requirements of 914-1 and 914-2, then the blended material will be classified as local stabilizing material. Provide test results to the Engineer and obtain their approval in writing before using RAP blended material. The Engineer will verify that the QC test results meet the acceptance criteria, otherwise the Engineer will perform Resolution testing procedures specified in 160-2.2.1.

160-2.3 Existing Base: Obtain the Engineer's approval in writing before using existing base. When the material from an existing base is used as all, or a portion, of the stabilizing additives, no further testing is required unless directed by the Engineer.

160-2.4 Granular Subbase Substitution: The Engineer may allow, at no additional cost to the Department, the substitution of 6 inches of granular subbase meeting the requirements of 290-2 and 290-3, only when 12 inches of Type B stabilization requiring a Limerock Bearing Ratio (LBR) value of 40 is specified in accordance with Standard Plans, Index 120-001.

160-3 Construction Methods.

160-3.1 General: Prior to the beginning of stabilizing operations, construct the area to be stabilized to an elevation such that, upon completion of stabilizing operations, the completed stabilized subgrade will conform to the lines and grades shown in the Plans. Prior to spreading

any additive stabilizing material, bring the surface of the roadbed to a plane approximately parallel to the plane of the finished graded surface shown in the Plans.

Construct mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts, retaining wall systems, shoulder-only areas, sidewalk, and shared use path areas meeting the requirements of 120-8.1, except replace “embankment” with “subgrade”.

Isolated mixing operations and isolated compaction operations will be considered as separate LOTs. Curb pads and shoulders compacted separately shall be considered separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

160-3.2 Application and Acceptance of Stabilizing Material: After completing the roadbed grading operations, determine the type and quantity (if any) of stabilizing material necessary for compliance with the bearing value requirements. Before using any Fossil Fuel Combustion Products (FFCPs), submit documentation, at the preconstruction meeting or no later than 30 days prior to delivery of FFCP’s to the project, signed and sealed by the Specialty Engineer that these materials meet the requirements of 403.7047 F. S. Notify the Engineer of the approximate quantity to be added before spreading. When additive stabilizing materials are required, spread the material uniformly over the area to be stabilized.

The Engineer may perform Independent Verification (IV) sampling and testing if variability in the stabilizing material is observed during inspection after spreading on the roadway. If the IV test results do not meet the requirements of Section 914, then remove and replace the failing LOTs with acceptable material. The Engineer reserves the right to reject stabilizing material that contains excessive deleterious substances.

160-3.3 Mixing: Perform mixing using rotary tillers, a plant or other equipment meeting the approval of the Engineer. The subgrade may be mixed in one course if the equipment and method of construction provides uniformity, particle size limitation, compaction and other desired results of 160-4. Thoroughly mix the area to be stabilized throughout the entire depth and width of the stabilizing limits.

Perform the mixing operations, as specified, (either in place or in a plant) regardless of whether the existing soil, or any select soils placed within the limits of the stabilized sections, have the required bearing value without the addition of stabilizing materials.

160-3.4 Mixed Material Requirements: At the completion of the mixing, ensure the gradation of the material within the limits of the area being stabilized is such that 97% will pass a 3-1/2-inch sieve. Break down or remove from the stabilized area materials, including clay lumps or lumps made of clay-size particles (any particle size 2 microns or less), not meeting the gradation requirements. After mixing, remove any existing lumps of clay or clay-sized particles greater than one inch that do not meet the requirements of 160-3.2 or this Section from the stabilized area. The final product must meet the acceptance requirements of 160-4.

160-3.4.1 Classification and Bearing Value: Meet the soil utilization and bearing value requirements for the subgrade in accordance with 160-4.

160-3.4.2 Compaction: After completing the mixing operations and satisfying the requirements for bearing value, uniformity, and particle size, compact the materials at a moisture content permitting the specified compaction in 160-4.2. If the moisture content of the material is improper for attaining the specified density, either add water or allow the material to dry until reaching the proper moisture content for the specified compaction.

160-3.4.3 Finish Grading: Shape the completed stabilized subgrade to conform with the finished graded surface shown in the Plans. Check the subgrade using elevation stakes or other means approved by the Engineer.

160-3.4.4 Condition of Completed Subgrade: After completing the stabilizing and compacting operations, ensure that the subgrade is firm and substantially unyielding to the extent that it will support construction equipment and will have the bearing value required by the Plans.

Remove all soft and yielding material and any other portions of the subgrade which will not compact readily, and replace it with suitable material so that the whole subgrade is brought to line and grade, with proper allowance for subsequent compaction.

160-3.4.5 Maintenance of Completed Subgrade: After completing the subgrade as specified above, maintain it free from ruts, depressions, and any damage resulting from the hauling or handling of materials, equipment, tools, etc. The Contractor is responsible for maintaining the required density until the subsequent base or pavement is in place including any repairs, replacement, etc., of curb and gutter, sidewalk, etc., which might become necessary in order to recompact the subgrade in the event of underwash or other damage occurring to the previously compacted subgrade. Perform any such recompaction at no expense to the Department. Construct and maintain ditches and drains along the completed subgrade section.

160-4 Acceptance Program for Mixed Materials.

160-4.1 General Requirements:

160-4.1.1 Equipment Comparison: Meet the requirements of 120-10.1.1.

160-4.1.2 Density over 105%: Meet the requirements of 120-10.1.2.

160-4.2 Quality Control Tests:

160-4.2.1 Modified Proctor Maximum Density Determination: Collect enough material to split and create three separate samples. Determine test locations, including stations and offsets, using the Random Number generator approved by the Department. Retain the Verification and Resolution samples for the Department until the Engineer accepts the LOTs represented by the samples. Determine modified Proctor maximum density and optimum moisture content by sampling and testing the material in accordance FM 1-T 180.

160-4.2.2 Density Testing Requirements: Determine the in-place wet density by Nuclear Density testing in accordance with FM 1-T 310. Determine the in-place moisture content for each density test in accordance with FM 1-T 310, FM 5-507 (Speedy Moisture), or ASTM D4643 (Microwave Oven), whichever is applicable. Calculate the dry density using the measured in-place wet density and moisture content.

Within the entire limits of the width and depth of the areas to be stabilized, obtain a minimum density at any location of 98% of the Modified Proctor maximum density as determined by FM 1-T 180 except for the upper areas to be grassed not to exceed 6 inches, compact these areas to a reasonably firm condition as directed by the Engineer.

160-4.2.3 Bearing Value Requirements: Test the stabilized subgrade sample collected in 160-4.2.1 to determine the LBR in accordance with FM 5-515. Within the entire limits of the width and depth of the areas to be stabilized, obtain the required minimum bearing value at the frequency in 160-4.7. For any area where the bearing value obtained is deficient from the value indicated in the Plans, in excess of the tolerances established herein, spread and mix additional stabilizing material in accordance with 160-3.3. Perform this reprocessing for the full width of the roadway being stabilized and longitudinally for a distance of 50 feet beyond the limits of the area in which the bearing value is deficient.

Determine the quantity of additional stabilizing material to be used in reprocessing.

160-4.2.3.1 Under-tolerances in Bearing Value Requirements: The under-tolerances are allowed for the following specified Bearing Values:

Table 160-1	
Specified Bearing Value	Under-tolerance
LBR 40	5.0
LBR 35	4.0
LBR 30 (and under)	2.5

160-4.2.3.2 Unsoaked LBR Requirements: If unsoaked LBR is desired, submit request for approval to the Engineer. Upon approval by the Engineer to consider the use of unsoaked LBR, randomly sample and test from three locations in the initial LOT for both soaked and unsoaked LBR in accordance with FM 5-515. Ensure all the tests achieve the LBR value shown in the table below. Continue testing unsoaked LBR at the frequency shown in 160-4.7. Discontinue unsoaked LBR testing if any unsatisfactory QC LBR test result is obtained or resolution determines an unsatisfactory LBR.

The following unsoaked bearing value requirement is based on tests performed on samples obtained after completing mixing operations:

Table 160-2		
Specified Bearing Value	Unsoaked Bearing Value Required	Under-tolerance
LBR 40	LBR 43	0.0

160-4.2.4 Soil Classification and Organic Content Testing: Perform soil classification tests on the sample collected in 160-4.1.2, in accordance with AASHTO T88, AASHTO T89, AASHTO T90, and FM 1-T 267. The Engineer may waive the soil classification and organic content testing requirements for existing base or granular subbase materials. Classify soils in accordance with AASHTO M145 to determine compliance with soil utilization requirements as specified in Standard Plans, Index 120-001. If the stabilizing material used is 100% RAP or RAP blended material, then replace FM 1-T 267 with FM 5-563 (excluding gradation analysis). The following testing requirements must be met.

Table 160-3	
Test Method	Criteria
AASHTO M145	Soil Symbol = S
FM 1-T 267	Average of 3 Organic Content $\leq 2.5\%$
	Individual Organic Content Result $\leq 4.0\%$
AASHTO T89	Liquid Limit ≤ 30
AASHTO T90	Plastic Index ≤ 8
FM 5-563*	Asphalt Content $\leq 4.0\%$
* Replace FM 1-T 267 with FM 5-563 (excluding gradation analysis) for 100% RAP or RAP blended material	

160-4.3 Department Verification: Meet the requirements of 120-10.3 except the Engineer will conduct the Verification tests in order to accept all materials and work associated with 160-4.2.

160-4.4 Reduced Testing Frequency: Meet the requirements of 120-10.4.

160-4.5 Payment for Resolution Tests: Meet the requirements of 120-10.5.

160-4.6 Mixing Depth Requirements: Record and report depth requirements in the Earthwork Records System (ERS) section of the Department's database measured to the nearest 0.25 inch. The difference between the individual measured depth thickness on the roadway and the plan target thickness must not exceed 2 inches. The difference between the LOT average (average of the three individual measured depth thickness) and the plan target thickness must not exceed 1 inch. No under-tolerance of mixing depth is allowed.

As an exception to the above mixing requirements, where the subgrade is of rock, the Engineer may waive the mixing operations (and the work of stabilizing), and the Department will not pay for stabilization for such sections of the roadway.

Meet the required Plan mixing-depths by measuring from the proposed final grade line. Determine test locations, including stations and offsets, using the Random Number generator approved by the Department. Notify the Engineer a minimum of 24 hours before checking mixing depths.

160-4.7 Frequency: Conduct QC sampling and testing at a minimum frequency listed in the table below. The Engineer will perform Verification sampling and tests at a minimum frequency listed in the table below.

Table 160-4			
Test Name	Quality Control	Verification	Verification for Shoulder-Only, Shared Use Path and Sidewalk Construction
Modified Proctor Maximum Density	One per two consecutive LOTs	One per eight consecutive LOTs	One per four LOTs
LBR			
Gradation, LL/PI, and Soil Classification			
Organic Content			
Asphalt Content*	One per LOT	One per four LOTs	One per two LOTs
Density			
Stabilizing Mixing Depth	Three per 500 feet	Witness QC	Witness QC

*Replace organic content with asphalt content for 100% RAP or RAP blended material only.

160-4.8 Verification Comparison Criteria and Resolution Procedures: The Engineer will randomly select one of the retained split samples referenced in 160-4.2.1 except for density testing requirement of 160-4.8.3.

160-4.8.1 Bearing Value: The Engineer will test the stabilized subgrade for determination of the LBR in accordance with FM 5-515.

160-4.8.1.1 Unsoaked LBR: The Engineer will sample and test the initial LOT for one soaked and one unsoaked LBR if consideration of the unsoaked LBR has been approved.

160-4.8.1.2 Resolution Procedure: If the Department's Verification test meets the requirements of 160-4.2.3, the Engineer will accept the corresponding LOTs. Otherwise, the Engineer will collect the Resolution split sample corresponding to the Verification sample tested. SMO or an AASHTO accredited laboratory designated by SMO will perform Resolution testing on the additional sample. The material will be sampled and tested in accordance with FM 5-515.

If the resolution testing results meet the requirements of 160-4.2.3, then the Engineer will accept the LOTs in question. Otherwise reprocess the corresponding LOTs in accordance with 160-3 and retest in accordance with 160-4.2.3.

160-4.8.2 Modified Proctor Maximum Density Determination: The Engineer will compare the Verification test results to the corresponding Quality Control (QC) test results. If the test result is within 4.5 lb/ft³ of the QC test result, the LOTs will be verified. Otherwise, the Engineer will collect the Resolution split sample corresponding to the Verification sample tested. The State Materials Office or an AASHTO accredited laboratory designated by the State Materials Office will perform Resolution testing. The material will be sampled and tested in accordance with FM 1-T 180.

The Engineer will compare the Resolution Test (RT) results with the QC test results. If the RT result is within 4.5 lb/ft³ of the corresponding QC test result, the Engineer will use the QC test results for material acceptance purposes for each corresponding pair of LOTs. If the RT result is not within 4.5 lb/ft³ of the corresponding QC test, the Engineer will collect and test the remaining Verification split samples for the LOTs in question. Verification test results will be used for material acceptance purposes for the remaining LOTs in question.

160-4.8.3 Density Testing: Meet the requirement of 120-10.6.2

160-4.8.4 Soil Classification: Meet the requirements of 120-10.6.3 with the exception that the limits will be in accordance with 160-4.2.4.

160-4.8.5 Organic Content: Meet the requirements of 120-10.6.4 with the exception that the limits will be in accordance with 160-4.2.4.

160-4.8.6 Asphalt Content: If the stabilizing material used for subgrade contains 100% RAP or RAP blended material, meet the requirement of 120-10.6.4, except replace FM 1-T 267 with FM 5-563 (exclude gradation analysis) and meet the limits of 160-4.2.4.

160-4.8.7 Mixing Depth: The Engineer will witness the Contractor's mixing depth checks to ensure compliance with 160-4.6. The Engineer will select test locations, including stations and offsets, using a Random Number generator. The Department will witness the mixing depth checks.

1. If the depth checks meet the requirements of 160-4.6, the Engineer will accept that 500-foot section.

2. If the depth checks confirm shallow depth, re-mix the 500-foot section to an appropriate depth and re-measure in accordance with 160-4.6. The Engineer will repeat the witness process.

3. If the depth checks confirm extra deep mixing, conduct an additional QC density test after compaction for the bottom 12 inches of the subgrade for that 500-foot section in addition to a QC density test for the top 12 inches. The additional density test must meet the requirements 160-4.2.2.

160-4.9 Disposition of Defective Materials: Meet the requirements of 120-10.7.

160-5 Method of Measurement.

The quantity to be paid for will be the plan quantity, in square yards, completed and accepted.

160-6 Basis of Payment.

Price and payment will constitute full compensation for all work and materials specified in this Section, including furnishing, spreading and mixing of all stabilizing material required and any reprocessing of stabilization areas necessary to attain the specified bearing value. The Department will make full payment for any areas where the existing subgrade materials meet the design bearing value requirements without the addition of stabilizing additives, as well as areas where the Contractor may elect to place select high-bearing materials from other sources within the limits of the stabilizing.

If the item of borrow excavation is included in the Contract, any stabilizing materials obtained from designated borrow areas will be included in the pay quantity for borrow excavation.

Payment will be made under:

Item No. 160- 4- Stabilization - per square yard.

SECTION 285 OPTIONAL BASE COURSE

285-1 Description.

Construct a base course composed of one of the optional materials shown on the typical sections.

285-2 Materials.

Meet the material requirements as specified in the Section covering the particular type of base to be constructed.

Graded Aggregate	Section 204
Asphalt	Section 234
Reclaimed Asphalt Pavement (RAP)*	Section 283
Limerock	Section 911
Shell Base.....	Section 911
Shell-Rock.....	Section 911
Cemented Coquina.....	Section 911
Recycled Concrete Aggregate (RCA)**	Section 911

*Only for use on non-limited access paved shoulders, shared use paths, or other non-traffic bearing applications.

**Do not use on interstate roadways.

285-3 Selection of Base Option.

The Plans will include typical sections indicating the various types of base construction (material and thickness) allowable.

When base options are specified in the Plans, use only those options. When base options are not specified, select one base option as allowed for each typical section shown in the Plans. Only one base option is permitted for each typical section. See Tables 285-1 and 285-2 for optional base materials, thickness and additional restrictions.

Notify the Engineer in writing of the base option selected for each typical section at least 45 calendar days prior to beginning placement of base material.

Table 285-1 Optional Base Groups 1 through 7							
Base Materials	Base Group (Base Group Pay Item)						
	1 (701)	2 (702)	3 (703)	4 (704)	5 (705)	6 (706)	7 (707)
Limerock, LBR 100	4"	5"	5-1/2"	6"	7"	8"	8-1/2"
Cemented Coquina, LBR 100	4"	5"	5-1/2"	6"	7"	8"	8-1/2"
Shell Rock, LBR 100	4"	5"	5-1/2"	6"	7"	8"	8-1/2"
Bank Run Shell, LBR 100	4"	5"	5-1/2"	6"	7"	8"	8-1/2"
Recycled Concrete Aggregate, LBR 150 ⁽¹⁾	4"	5"	5-1/2"	6"	7"	8"	8-1/2"
Graded Aggregate Base, LBR 100	4-1/2"	5-1/2"	6-1/2"	7-1/2"	8-1/2"	9"	10"
Type B-12.5	4" ⁽³⁾	4" ⁽³⁾	4" ⁽³⁾	4" ⁽³⁾	4-1/2"	5"	5-1/2"
B-12.5 and 4" Granular Subbase, LBR 100 ⁽²⁾	-	-	-	-	-	-	-
RAP Base ⁽⁴⁾	5" ⁽⁴⁾	-	-	-	-	-	-
(1) Do not use on interstate roadways. (2) The construction of both the subbase and Type B-12.5 will be bid and used as Optional Base. Granular subbases include limerock, cemented coquina, shell rock, bank run shell, recycled concrete aggregate and graded aggregate base. All subbase thicknesses are 4" minimum prior to adding the required prime coat. (3) Based on minimum practical thickness. (4) Only for use on non-limited access paved shoulders, shared use paths, or other non-traffic bearing applications. (5) To be used for widening, three feet or less.							

Table 285-1(continued) Optional Base Groups 8 through 15								
Base Materials	Base Group (Base Group Pay Item)							
	8 (708)	9 (709)	10 (710)	11 (711)	12 (712)	13 (713)	14 (714)	15 (715)
Limerock, LBR 100	9-1/2"	10"	11"	12"	12-1/2"	13-1/2" ⁽⁵⁾	14" ⁽⁵⁾	-
Cemented Coquina, LBR 100	9-1/2"	10"	11"	12"	12-1/2"	13-1/2" ⁽⁵⁾	14" ⁽⁵⁾	-
Shell Rock, LBR 100	9-1/2"	10"	11"	12"	12-1/2"	13-1/2" ⁽⁵⁾	14" ⁽⁵⁾	-
Bank Run Shell, LBR 100	9-1/2"	10"	11"	12"	12-1/2"	13-1/2" ⁽⁵⁾	14 ⁽⁵⁾	-
Recycled Concrete Aggregate, LBR 150 ⁽¹⁾	9-1/2"	10"	11"	12"	12-1/2"	13-1/2" ⁽⁵⁾	14" ⁽⁵⁾	-
Graded Aggregate Base, LBR 100	11"	12"	13"	14"	-	-	-	-
Type B-12.5	5-1/2"	6"	6-1/2"	7"	7-1/2"	8"	8-1/2"	9"
B-12.5 and 4" Granular Subbase, LBR 100 ⁽²⁾	-	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"

Table 285-1(continued) Optional Base Groups 8 through 15								
Base Materials	Base Group (Base Group Pay Item)							
	8 (708)	9 (709)	10 (710)	11 (711)	12 (712)	13 (713)	14 (714)	15 (715)
RAP Base ⁽⁴⁾	-	-	-	-	-	-	-	-
(1) Do not use on interstate roadways. (2) The construction of both the subbase and Type B-12.5 will be bid and used as Optional Base. Granular subbases include limerock, cemented coquina, shell rock, bank run shell, recycled concrete aggregate and graded aggregate base. All subbase thicknesses are 4" minimum prior to adding the required prime coat. (3) Based on minimum practical thickness. (4) Only for use on non-limited access paved shoulders, shared use paths, or other non-traffic bearing applications. (5) To be used for widening, three feet or less.								

Table 285-2: Limited Use Optional Base Groups ⁽¹⁾								
Base Materials	Base Group (Base Group Pay Item)							
	101 (701)	102 (702)	103 (703)	104 (704)	105 (705)	106 (706)	107 (707)	108 (708)
Limerock Stabilized, LBR 70	5"	6-1/2"	8"	9"	10"	11"	12-1/2"	-
Shell, LBR 70	5"	6-1/2"	8"	9"	10"	11"	12-1/2"	-
Shell Stabilized, LBR 70	7"	8-1/2"	9-1/2"	10-1/2"	12"	-	-	-
Sand-Clay, LBR 75	5"	6-1/2"	8"	9"	10"	11"	12-1/2"	-
Soil Cement (300 psi) (Plant Mixed)	5"	5-1/2"	6-1/2"	7-1/2"	8-1/2"	9"	10"	11"
Soil Cement (300 psi) (Road Mixed)	5"	5-1/2"	6-1/2"	7-1/2"	8-1/2"	-	-	-
Soil Cement (500 psi) (Plant Mixed)	4" ⁽²⁾	4"	5"	5-1/2"	6"	7"	7-1/2"	8-1/2"
(1) Use only when specified in the Plans. (2) Based on minimum practical thicknesses.								

285-4 Construction Requirements.

Construct the base in accordance with the Section covering the particular type of base to be constructed.

Graded Aggregate	Section 204
Asphalt	Section 234
Reclaimed Asphalt Pavement (RAP)*	Section 283
Limerock	Section 200
Shell Base.....	Section 200
Shell Rock.....	Section 200
Cemented Coquina.....	Section 200
Recycled Concrete Aggregate (RCA)**	Section 200

*Only for use on non-limited access paved shoulders, shared use paths, or other non-traffic

**Do not use on interstate roadways.

285-5 Variation in Earthwork Quantities.

The Plans will identify the optional materials used by the Department for determining the earthwork quantities (Roadway Excavation, Borrow Excavation, Subsoil Excavation, Subsoil Earthwork, or Embankment). The Department will not revise the quantities, for those items having final pay based on plan quantity, to reflect any volumetric change caused by the Contractor's selection of a different optional material.

285-6 Thickness Requirements.

285-6.1 Measurements: For non-asphalt bases, meet the requirements of 200-7.3.1.2.

For subbases, meet the thickness requirements of 290-4.

The Engineer will determine the thickness of asphalt base courses in accordance with 234-8.1.

285-6.2 Correction of Deficient Areas: For non-asphalt bases, correct all areas of the completed base having a deficiency in thickness in excess of 1/2 inch by scarifying and adding additional base material. As an exception, if authorized by the Engineer, such areas may be left in place without correction and with no payment.

For asphalt bases, correct all areas of deficient thickness in accordance with 234-8.

285-7 Calculation of Average Thickness of Base.

For bases that are not mixed in place, the Engineer will determine the average thickness from the measurements specified in 285-6.1, calculated as follows:

1. When the measured thickness is more than 1/2 inch greater than the design thickness shown on the typical section in the Plans, it will be considered as the design thickness plus 1/2 inch.
2. Average thickness will be calculated per typical section for the entire job as a unit.
3. Any areas of base left in place with no payment will not be included in the calculations.
4. Where it is not possible through borings to distinguish the base materials from the underlying materials, the thickness of the base used in the measurement will be the design thickness.
5. For Superpave asphalt base course, the average spread rate of each course shall be constructed in compliance with 234-8.

285-8 Method of Measurement.

The quantity to be paid for will be the plan quantity area in square yards, omitting any areas where under-thickness is in excess of the allowable tolerance as specified in 285-6. The pay area will be the surface area, determined as provided above, adjusted in accordance with the following formula:

$$\text{Pay Area} = \text{Surface Area} \left(\frac{\text{Calculated Average Thickness per 285-7}}{\text{Plan Thickness}} \right)$$

SECTION 334 SUPERPAVE ASPHALT CONCRETE

334-1 Description.

334-1.1 General: Construct a Superpave Asphalt Concrete pavement with the type of mixture specified in the Contract Documents, or when offered as alternates, as selected. Superpave mixes are identified as Type SP-9.5, Type SP-12.5 or Type SP-19.0.

Obtain Superpave Asphalt Concrete from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105. Producers must meet the requirements of Section 320 for plant and equipment and the general construction requirements of Section 330.

334-1.2 Traffic Levels: The requirements for Type SP Asphalt Concrete mixtures are based on the design traffic level of the project. The traffic levels for the project are as specified in the Contract Documents.

334-1.3 Gradation Classification: The Superpave mixes are classified as fine and are defined in 334-3.2.2.

The equivalent AASHTO nominal maximum aggregate size Superpave mixes are as follows:

Type SP-9.5.....	9.5 mm
Type SP-12.5.....	12.5 mm
Type SP-19.0.....	19.0 mm

334-1.4 Thickness: The total thickness of the Type SP asphalt layers will be the plan thickness as shown in the Contract Documents. Before paving, propose a thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan thickness. For construction purposes, the plan thickness and individual layer thickness will be converted to spread rate based on the maximum specific gravity of the asphalt mix being used, as well as the minimum density level, as shown in the following equation:

$$\text{Spread rate (lb/yd}^2\text{)} = t \times G_{mm} \times 43.3$$

Where: t = Thickness (in.) (plan thickness or individual layer thickness)

G_{mm} = Maximum specific gravity from the verified mix design

The weight of the mixture shall be determined as provided in 320-3.2. For target purposes only, spread rate calculations should be rounded to the nearest whole number.

Note: Plan quantities are based on a G_{mm} of 2.540, corresponding to a spread rate of 110 lb/yd²-in. Pay quantities will be based on the actual maximum specific gravity of the mix being used.

334-1.4.1 Layer Thicknesses: The allowable layer thicknesses for Type SP Asphalt Concrete mixtures are as follows:

Type SP-9.5.....	1 to 1-1/2 inches
Type SP-12.5.....	1-1/2 to 3 inches
Type SP-19.0.....	2 to 4 inches

In addition to the minimum and maximum thickness requirements, the following restrictions are placed on mixes when used as a structural course:

Type SP-9.5 - Limited to the top two structural layers, two layers maximum.

Type SP-9.5 - Do not place less than 1-1/2 inches thick for Traffic Level E applications.

Type SP-19.0 - Do not use for the final (top) structural layer below FC-5 mixtures. Type SP-19.0 mixtures are permissible for the layer directly below FC-9.5 and FC-12.5 mixtures. Do not use for the final (top) layer of shoulders.

334-1.4.2 Additional Requirements: The following requirements also apply to Type SP Asphalt Concrete mixtures:

1. A minimum 1-1/2 inch initial lift is required over an Asphalt Membrane Interlayer (AMI).

2. When construction includes the paving of adjacent shoulders (less than or equal to 5 feet wide), the layer thickness for the upper pavement layer and shoulder must be the same and paved in a single pass, unless called for differently in the Contract Documents.

3. All overbuild layers must be Type SP Asphalt Concrete designed at the traffic level as stated in the Contract Documents. Use the minimum and maximum layer thicknesses as specified above unless called for differently in the Contract Documents. On variable thickness overbuild layers, the minimum and maximum allowable thicknesses will be as specified below, unless called for differently in the Contract Documents.

Type SP-9.5..... 3/8 to 2 inches

Type SP-12.5..... 1/2 to 3 inches

Type SP-19.0..... 1-1/2 to 4 inches

4. Variable thickness overbuild layers constructed using a Type SP-9.5 or SP-12.5 mixtures may be tapered to zero thickness provided the contract documents require a minimum of 1-1/2 inches of dense-graded mix placed over the variable thickness overbuild layer.

334-2 Materials.

334-2.1 General Requirements: Meet the following requirements:

Superpave PG Asphalt Binder* Section 916

Coarse Aggregate.....Section 901

Fine Aggregate.....Section 902

*Use products on the Department's Approved Product List (APL).

334-2.2 Superpave Asphalt Binder: Unless specified otherwise in the Contract Documents, use an asphalt binder grade as determined from Table 334-2.

High polymer binder mixtures may be used in lieu of mixtures with other specified binders at no additional cost to the Department, provided they meet the traffic level and mixture type requirements of the project.

High polymer binder may be substituted in a mixture at no additional cost to the Department when the mix design contains a maximum of 20% RAP.

334-2.3 Reclaimed Asphalt Pavement (RAP) Material:

334-2.3.1 General requirements: RAP may be used as a component of the asphalt mixture subject to the following requirements:

1. When using a PG 76-22 asphalt binder in friction course mixtures, limit the amount of RAP material used in the mix to a maximum of 20% by weight of total aggregate. As an exception, amounts greater than 20% RAP by weight of total aggregate can be used if no

more than 20% by weight of the total asphalt binder comes from the RAP material. When using a PG 76-22 asphalt binder in structural course mixtures, refer to 334-2.3.6. RAP is not allowed in mixtures containing High Polymer asphalt binder. High Polymer asphalt is defined in Section 916.

2. Assume full responsibility for the design, production and construction of asphalt mixes which incorporate RAP as a component material.

3. Use RAP from a Department approved stockpile or millings from a Department project.

4. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.

5. Provide RAP material having a minimum average asphalt binder content of 4.0% by weight of RAP. As an exception, when using fractionated RAP, the minimum average asphalt binder content for the coarse portion of the RAP shall be 2.5% by weight of the coarse portion of the RAP. The coarse portion of the RAP shall be the portion of the RAP retained on the No. 4 sieve. The Engineer may sample the stockpiles to verify that this requirement is met.

334-2.3.2 Material Characterization for Mix Design: Assume responsibility for establishing the asphalt binder content, gradation, and bulk specific gravity (G_{sb}) of the RAP material based on a representative sampling of the material by roadway cores or stockpile samples. For roadway core samples, assume responsibility for the degradation that will occur during the milling operation.

334-2.3.3 RAP Stockpile Approval: Prior to the incorporation of RAP into the asphalt mixture, stockpile the RAP material and obtain approval for the stockpile by one of the following methods:

1. Continuous stockpile: When RAP is obtained from one or multiple sources and is either processed, blended, or fractionated, and stockpiled in a continuous manner, assure an adequate number of test results are obtained for stockpile approval. Test the RAP material for gradation and asphalt content at a minimum frequency of one sample per 1,000 tons with a minimum of six test results. Test the RAP material for G_{mm} (for G_{sb} determination) at a minimum frequency of one sample per 5,000 tons with a minimum of two test results. Based on visual inspection and a review of the test data, the Engineer will determine the suitability of the stockpiled material. In addition, address the details and specifics of the processing, sampling, testing and actions to be taken in the Producer Quality Control (QC) Plan.

When RAP is added to the continuous stockpile after original approval of the stockpile as described above, test the RAP material for gradation and asphalt content at a minimum frequency of one sample per 1,000 tons with a minimum of six test results. Test the RAP material for G_{mm} (for G_{sb} determination) at a minimum frequency of one sample per 5,000 tons with a minimum of two test results. Monitor test results during crushing operations for conformance to the requirements of Table 334-1. After the minimum frequency of tests have been performed, the Engineer will review the test data and visually inspect the stockpiled material. The average gradation and G_{mm} of the added material shall be within the allowable ranges shown in Table 334-1 from the originally approved stockpile values. If the added RAP material does not meet the conditions of Table 334-1, then the Contractor must create a new stockpile when resuming crushing operations and the stockpile will receive a new number designation from the Department. The previously crushed material, which was added to

the continuous stockpile and did not meet the conditions of Table 334-1, may remain and that stockpile used until depleted.

Table 334-1 Allowable Ranges for Continuous RAP Stockpile Properties	
Characteristic	Limit from Original Approved Stockpile Gradation
No. 8 sieve and coarser	± 6.0%
No. 16 sieve	± 5.0%
No. 30 sieve	± 5.0%
No. 50 sieve	± 4.0%
No. 100 sieve	± 4.0%
No. 200 sieve	± 2.0%
G_{mm}	± 0.040

2. Non-continuous single stockpile: When an individual stockpile is being constructed, obtain representative samples at random locations and test the RAP material for gradation and asphalt content at a minimum frequency of one sample per 1,000 tons with a minimum of six test results. Test the RAP material for G_{mm} (for G_{sb} determination) at a minimum frequency of one sample per 5,000 tons with a minimum of two test results. Based on visual inspection and a review of the test data, the Engineer will determine the suitability of the stockpiled material. If the properties of the new stockpile compare with the properties of an existing stockpile within the ranges provided in Table 334-1, the RAP in the new stockpile may be added to the existing stockpile. Once the RAP stockpile has been approved, do not add additional material without prior approval of the Engineer.

Determine the asphalt binder content and gradation of the RAP material in accordance with FM 5-563 and FM 1-T 030, respectively. Establish the G_{sb} of the RAP material by using one of the following methods:

a. Calculate the G_{sb} value based upon the effective specific gravity (G_{se}) of the RAP material, determined on the basis of the asphalt binder content and maximum specific gravity (G_{mm}) of the RAP material. The Engineer will approve the estimated asphalt binder absorption value used in the calculation.

b. Measure the G_{sb} of the RAP aggregate, in accordance with FM 1-T 084 and FM 1-T 085. Obtain the aggregate by using a solvent extraction method.

334-2.3.4 Pavement Coring Report: When the Contract includes milling of the existing asphalt pavement, the Pavement Coring Report may be available on the Department's website.

334-2.3.5 Asphalt Binder for Mixes with RAP: Select the appropriate asphalt binder grade based on Table 334-2. The Engineer reserves the right to change the asphalt binder grade at design based on the characteristics of the RAP asphalt binder, and reserves the right to make changes during production.

Table 334-2 Asphalt Binder Grade for Mixes Containing RAP	
Percent RAP	Asphalt Binder Grade
0 - 15	PG 67-22
16 - 30	PG 58-22
>30	PG 52-28

334-2.3.6 Allowable RAP Percentages for Type SP Structural Mixtures with PG 76-22 Asphalt Binder: For Type SP structural mixtures using PG 76-22 asphalt binder, select the percentage of RAP material based on Table 334-3.

Table 334-3 Allowable RAP Percentages ¹ in Type SP Structural Mixtures with PG 76-22 Asphalt Binder				
		Coarse RAP	Intermediate RAP	Fine RAP
Gradation % Passing #16 Sieve ²		≤ 40%	> 40% to ≤ 50%	> 50%
PG _{HT} ³ > 100.0° C	Allowable RAP Percentage	≤ 25%	≤ 20%	≤ 20%
PG _{HT} ³ ≤ 100.0° C		≤ 30%	≤ 25%	
Notes: 1. RAP aggregate by weight of total aggregate or RAP binder by weight of total binder. 2. RAP gradations based on ignition oven extraction of RAP material in accordance with FM 5-563. 3. PG _{HT} : asphalt binder high temperature continuous performance grade of RAP in accordance with Section 916.				

334-2.4 Recycled Crushed Glass: Recycled crushed glass may be used as a component of the asphalt mixture subject to the following requirements:

1. Consider the recycled crushed glass a local material and meet all requirements specified in 902-6.
2. Limit the amount of recycled crushed glass to a maximum of 15% by weight of total aggregate.
3. Use an asphalt binder that contains an anti-stripping agent listed on the Approved Product List (APL). The anti-strip additive shall be introduced into the asphalt binder by the supplier during loading.
4. Do not use recycled crushed glass in friction course mixtures or in structural course mixtures which are to be used as the final wearing surface.

334-3 General Composition of Mixture.

334-3.1 General: Compose the asphalt mixture using a combination of aggregate (coarse, fine or mixtures thereof), mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

334-3.2 Mix Design:

334-3.2.1 General: Design the asphalt mixture in accordance with AASHTO R 35, except as noted herein. Prior to the production of any asphalt mixture, submit the proposed mix design with supporting test data indicating compliance with all mix design criteria to the Engineer. For all mix designs, include representative samples of all component materials, including asphalt binder. Allow the Director of the Office of Materials a maximum of four weeks to either conditionally verify or reject the mix as designed.

At no additional cost to the Department, for a Type SP mix the following Traffic Level substitutions are allowed:

- Traffic Level E can be substituted for Traffic Level C.
- Traffic Level C can be substituted for Traffic Level B.

The same traffic level and binder type that is used for the mainline traffic lanes may be placed in the shoulder at no additional cost to the Department, even if the conditions stated above are not met for the shoulder.

Warm mix technologies (additives, foaming techniques, etc.) listed on the Department's website may be used in the production of the mix. The URL for obtaining this information, if available, is: <https://www.fdot.gov/materials/laboratory/asphalt/index.shtm>.

When warm mix technologies are used, for mixtures containing a PG 52-28, PG 58-22, or PG 67-22 binder, a mixture will be considered a warm mix asphalt design if the mixing temperature is 285°F or less. For mixtures containing a PG 76-22 or High Polymer binder, a mixture will be considered a warm mix asphalt design if the mixing temperature is 305°F or less.

The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and the Engineer will no longer allow the use of the mix design.

334-3.2.2 Mixture Gradation Requirements: Combine the coarse and fine aggregate in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements at design as defined in AASHTO M 323. Aggregates from various sources may be combined.

334-3.2.2.1 Mixture Gradation Classification: Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M 323, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M 323. Fine mixes are defined as having a gradation that passes above the primary control sieve control point and above the maximum density line for all sieve sizes smaller than the primary control sieve and larger than the No. 30 sieve.

334-3.2.3 Aggregate Consensus Properties: For Traffic Level C and E mixtures, meet the following consensus properties at design for the aggregate blend. Aggregate consensus properties do not apply to Traffic Level B mixtures.

334-3.2.3.1 Coarse Aggregate Angularity: When tested in accordance with ASTM D5821, meet the percentage of fractured faces requirements specified in AASHTO M 323.

334-3.2.3.2 Fine Aggregate Angularity: When tested in accordance with AASHTO T 304, Method A, meet the uncompacted void content of fine aggregate specified in AASHTO M 323. For Traffic Level C and E base and structural course mixtures, a fine aggregate angularity value less than 45.0 and greater than or equal to 42.0 is allowable provided testing parameters of AASHTO T 340-10 (2019) meet the following requirements:

1. Rutting tests are performed on two gyratory specimens compacted to N_{des} level of gyrations with a height of 115 ± 5 mm and a diameter of 150 mm.
2. The air void (V_a) content of each gyratory specimen after compacting to N_{des} shall be within the following range: $3.0 \leq V_a \leq 4.8$.
3. Rutting tests are performed at 64.0 C.
4. The average rut depth for two specimens shall not exceed 4.5 mm.

334-3.2.3.3 Flat and Elongated Particles: When tested in accordance with ASTM D4791, (with the exception that the material passing the 3/8-inch sieve and retained on the No. 4 sieve shall be included), meet the requirements specified in AASHTO M 323.

Measure the aggregate using the ratio of 5:1, comparing the length (longest dimension) to the thickness (shortest dimension) of the aggregate particles.

334-3.2.3.4 Sand Equivalent: When tested in accordance with AASHTO T 176, meet the sand equivalent requirements specified in AASHTO M 323.

334-3.2.4 Gyratory Compaction: Compact the design mixture in accordance with AASHTO T 312, with the following exception: use the number of gyrations at N_{design} as defined in Table 334-4. Measure the inside diameter of gyratory molds in accordance with AASHTO T 312.

Table 334-4 Gyratory Compaction Requirements	
Traffic Level	N_{design} Number of Gyrations
B	65
C	75
E	100

334-3.2.5 Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M 323, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M 323. N_{initial} and N_{maximum} requirements are not applicable.

334-3.2.6 Moisture Susceptibility:

1. For all traffic levels, use a liquid anti-strip agent listed on the APL at the specified dosage rate. Hydrated lime may be used instead of the liquid anti-strip agent.
2. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi in accordance with FM 1-T 283.

334-3.2.7 Additional Information: In addition to the requirements listed above, provide the following information with each proposed mix design submitted for verification:

1. The design traffic level and the design number of gyrations (N_{design}).
2. The source and description of the materials to be used.
3. The Department source number and the Department product code of the aggregate components furnished from a Department approved source.
4. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.
5. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.
6. The bulk specific gravity (G_{sb}) value for each individual aggregate and RAP component, as identified in the Department's aggregate control program.
7. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.
8. A target temperature for the mixture at the plant (mixing temperature) and a target temperature for the mixture at the roadway (compaction temperature) in accordance with 320-6.3. Do not exceed a target temperature of 340°F for High Polymer asphalt binders, 330°F for PG 76-22 asphalt binders, and 315°F for unmodified asphalt binders.

9. Provide the physical properties at the optimum asphalt content, which must conform to all specified requirements.
10. The name of the Construction Training Qualification Program (CTQP) Qualified Mix Designer.
11. The ignition oven and maximum specific gravity (G_{mm}) calibration factors.
12. The warm mix technology, if used.

334-3.3 Mix Design Revisions: During production, the Contractor may request a target value revision to a mix design, subject to meeting the following requirements: the target change falls within the limits defined in Table 334-5, appropriate data exists demonstrating that the mix complies with production air voids specification criteria, and the mixture gradation meets the basic gradation requirements defined in 334-3.2.2.

Table 334-5 Limits for Potential Adjustments to Mix Design Target Values	
Characteristic	Limit from Original Mix Design
Asphalt Binder Content ⁽¹⁾	±0.3%
Gradation and Aggregate Component ⁽²⁾	
No. 8 sieve and Coarser	± 5.0%
No. 16 sieve	± 4.0%
No. 30 sieve	± 4.0%
No. 50 sieve	± 3.0%
No. 100 sieve	± 3.0%
No. 200 sieve	± 1.0%
Each Component of Aggregate Blend	± 5.0 %
⁽¹⁾ Reductions to the asphalt binder content will not be permitted if the VMA during production is lower than 1.0% below the design criteria.	
⁽²⁾ The Engineer may waive the limits for the individual sieves and component of the aggregate blend contingent upon the quality of the production data for the mixture. Revisions to FC-5 mixtures to be determined by the Engineer.	

Submit all requests for revisions to mix designs, along with supporting documentation, to the Engineer. In order to expedite the revision process, the request for revision or discussions on the possibility of a revision may be made verbally, but must be followed up by a written request. The verified mix design will remain in effect until the Engineer authorizes a change. In no case will the effective date of the revision be established earlier than the date of the first communication between the Contractor and the Engineer regarding the revision.

A new design mix will be required if aggregate sources change, or for any substitution of an aggregate product with a different aggregate code, unless approved by the Engineer.

334-4 Producer Process Control (PC).

Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times. Perform any tests necessary at the plant and roadway for process control purposes. Enter all PC test data into the Department's database. The Engineer will not use these test results in the acceptance payment decision.

Address in the Producer QC Plan how PC failures will be handled. When a PC failure occurs, investigate, at a minimum, the production process, testing equipment and/or sampling

methods to determine the cause of the failure, and make any necessary changes to assure compliance with these Specifications. Obtain a follow up sample immediately after corrective actions are taken to assess the adequacy of the corrections. In the event the follow-up PC sample also fails to meet Specification requirements, cease production of the asphalt mixture until the problem is adequately resolved to the satisfaction of the QC Manager.

334-5 Acceptance of the Mixture.

334-5.1 General: The mixture will be accepted at the plant with respect to gradation ($P_{.8}$ and $P_{.200}$), asphalt content (P_b), and volumetrics (volumetrics is defined as air voids at N_{design}). The mixture will be accepted on the roadway with respect to density of roadway cores. Acceptance will be on a LOT by LOT basis (for each mix design) based on tests of random samples obtained within each subplot taken at a frequency of one set of samples per subplot. A roadway LOT and a plant production LOT shall be the same. Acceptance of the mixture will be based on Contractor QC test results that have been verified by the Department.

334-5.1.1 Sampling and Testing Requirements: Obtain the samples in accordance with FM 1-T 168. Obtain samples at the plant of a sufficient quantity to be split into three smaller samples; one for QC, one for Verification testing and one for Resolution testing. Obtain each split sample of a sufficient quantity, approximately 40 pounds, for all required testing. The split samples for Verification testing and Resolution testing shall be reduced in size and stored in three boxes each. The approximate size of each box must be 12 inches x 8 inches x 4 inches. Provide, label, and safely store sample boxes in a manner agreed upon by the Engineer for future testing.

The asphalt content of the mixture will be determined in accordance with FM 5-563. The gradation of the recovered aggregate will be determined in accordance with FM 1-T 030. Volumetric testing will be in accordance with AASHTO T 312 and FM 1-T 209. Prior to testing volumetric samples, condition the test-sized sample for one hour, plus or minus five minutes, at the target roadway compaction temperature in a shallow, flat pan, such that the mixture temperature at the end of the one-hour conditioning period is within plus or minus 20°F of the roadway compaction temperature.

If one of the QC gyratory specimens is damaged, make an additional gyratory specimen.

For situations where two properly prepared gyratory specimens do not meet single-operator precision requirements for G_{mb} as provided in FM 1-T 166:

1. Retest both gyratory specimens in accordance FM 1-T 166.
2. Following the retest, if the newly measured G_{mb} values do not meet single-operator precision requirements, QC shall prepare a third gyratory specimen in accordance with AASHTO T 312 and test in accordance with FM 1-T 166. All three test results shall be input into MAC. The average G_{mb} will be determined by MAC after performing an outlier check in accordance with ASTM E178.

Test for roadway density in accordance with FM 1-T 166.

334-5.1.2 Acceptance Testing Exceptions: When the total combined quantity of hot mix asphalt for the project, as indicated in the Plans for Type B-12.5, Type SP and Type FC mixtures only, is less than 2,000 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may require the Contractor to run process control tests for informational purposes, as defined in 334-4, or may run independent verification tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, open-graded friction courses, variable thickness overbuild courses, leveling courses, any SP-9.5 or SP-12.5 asphalt layer placed on subgrade with a layer thickness less than or equal to 3 inches, miscellaneous asphalt pavement, shared use paths, crossovers, gore areas, raised crosswalks, speed tables, or any course with a specified thickness less than 1 inch or a specified spread rate that converts to less than 1 inch as described in 334-1.4. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs; compact these courses in static mode only per the requirements of 330-7.7. In addition, density testing for acceptance will not be performed on the following areas when they are less than 500 feet (continuous) in length: turning lanes, acceleration lanes, deceleration lanes, shoulders, parallel parking lanes, ramps, or unsignalized side streets with less than four travel lanes and speed limits less than 35 mph. Do not perform density testing for acceptance in situations where the areas requiring density testing is less than 50 tons within a subplot.

Density testing for acceptance will not be performed in intersections. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets. A random core location that occurs within the intersection shall be moved forward or backward from the intersection at the direction of the Engineer.

Where density testing for acceptance is not required, compact these courses (with the exception of open-graded friction courses) in accordance with the rolling procedure (equipment and pattern) as approved by the Engineer or with Standard Rolling Procedure as specified in 330-7.2. In the event that the rolling procedure deviates from the procedure approved by the Engineer, or the Standard Rolling Procedure, placement of the mix shall be stopped.

The density pay factor (as defined in 334-8.2) for areas not requiring density testing for acceptance will be paid at the same density pay factor as for the areas requiring density testing within the same LOT. If the entire LOT does not require density testing for acceptance, the LOT will be paid at a density pay factor of 1.00.

334-5.2 Full LOTs: Each LOT will be defined (as selected by the Contractor prior to the start of the LOT) as either (1) 2,000 tons, with each LOT subdivided into four equal sublots of 500 tons each, or (2) 4,000 tons, with each LOT subdivided into four equal sublots of 1,000 tons each. As an exception to this, the initial LOT of all new mix designs shall be defined as 2,000 tons, subdivided into four equal sublots of 500 tons each. Before the beginning of a LOT, the Engineer will develop a random sampling plan for each subplot and direct the Contractor on sample points, based on tonnage, for each subplot during construction.

334-5.3 Partial LOTs: A partial LOT is defined as a LOT size that is less than a full LOT. A partial LOT may occur due to the following:

1. The completion of a given mix type or mix design on a project.
2. Closure of the LOT due to time. LOTs will be closed 30 calendar days after the start of the LOT. Time periods other than 30 calendar days may be used if agreed to by both the Engineer and the Contractor, but under no circumstances shall the LOT be left open longer than 90 days.
3. A LOT is terminated per 334-5.4.4.

All partial LOTs will be evaluated based on the number of tests available, and will not be redefined. If a LOT is closed before the first plant random sample is obtained, then the LOT will be visually accepted by the Engineer and the LOT pay factor will be 1.00.

334-5.4 QC Sampling and Testing: Obtain all samples randomly as directed by the Engineer.

Should the Engineer determine that the QC requirements are not being met or that unsatisfactory results are being obtained, or should any instances of falsification of test data occur, acceptance of the Producer's QC Plan will be suspended and production will be stopped.

334-5.4.1 Lost or Missing Verification/Resolution Samples: In the event that any of the Verification and/or Resolution asphalt mixture samples that are in the custody of the Contractor are lost, damaged, destroyed, or are otherwise unavailable for testing, the minimum possible pay factor for each quality characteristic as described in 334-8.2 will be applied to the entire LOT in question, unless called for otherwise by the Engineer. Specifically, if the LOT in question has more than two sublots, the pay factor for each quality characteristic will be 0.55. If the LOT has two or less sublots, the pay factor for each quality characteristic will be 0.80. If only the roadway cores are lost, damaged, destroyed, or are otherwise unavailable for testing, then the minimum possible pay factor for density will be applied to the entire LOT in question. In either event, the material in question will also be evaluated in accordance with 334-5.9.5.

If any of the Verification and/or Resolution samples that are in the custody of the Department are lost, damaged, destroyed or are otherwise unavailable for testing, the corresponding QC test result will be considered verified, and payment will be based upon the Contractor's data.

334-5.4.2 Plant Sampling and Testing Requirements: Obtain one random sample of mix per subplot in accordance with 334-5.1.1 as directed by the Engineer. Test the QC split sample for gradation, asphalt binder content and volumetrics in accordance with 334-5.1.1. Complete all QC testing within one working day from the time the samples were obtained.

334-5.4.3 Roadway Sampling and Testing Requirements: Obtain five 6 inch diameter roadway cores within 24 hours of placement at random locations as directed by the Engineer within each subplot. Test these QC samples for density (G_{mb}) in accordance with 334-5.1.1. Obtain a minimum of three cores per subplot at random locations as identified by the Engineer in situations where the subplot/LOT was closed or terminated before the random numbers were reached or where it is impractical to cut five cores per subplot. Do not obtain cores any closer than 12 inches from an unsupported edge. The Engineer may adjust randomly generated core locations for safety purposes or as the Engineer deems necessary. Do not perform density testing for acceptance in a subplot if the plant random sample for that subplot has not been obtained. Maintain traffic during the coring operation; core the roadway, patch the core holes (within three days of coring); and trim the cores to the proper thickness prior to density testing.

Density for the subplot shall be based on the average value for the cores cut from the subplot with the target density being a percentage of the maximum specific gravity (G_{mm}) of the subplot, as defined in the Contract. Once the average density of a subplot has been determined, do not retest the samples unless approved by the Engineer. Ensure proper handling and storage of all cores until the LOT in question has been accepted.

334-5.4.4 Individual Test Tolerances for QC Testing: Terminate the LOT if any of the following QC failures occur:

1. An individual test result of a subplot for air voids does not meet the requirements of Table 334-6,
2. The average subplot density does not meet the requirements of Table 334-6,

3. Two consecutive test results within the same LOT for gradation or asphalt binder content do not meet the requirements of Table 334-6,

When a LOT is terminated due to a QC failure, stop production of the mixture until the problem is resolved to the satisfaction of the QC Manager and/or Asphalt Plant Level II technician responsible for the decision to resume production after a QC failure, as identified in Section 105. In the event that it can be demonstrated that the problem can immediately be or already has been resolved, it will not be necessary to stop production. When a LOT is terminated, make all necessary changes to correct the problem. Do not resume production until appropriate corrections have been made. Prior to resuming production, inform the Engineer of the problem and corrections made to correct the problem. After resuming production, sample and test the material to verify that the changes have corrected the problem. Summarize this information and provide it to the Engineer prior to the end of the work shift when production resumes.

In the event that a QC failure is not addressed as defined above, the Engineer's approval will be required prior to resuming production after any future QC failures.

Address any material represented by a failing test result, as defined above in this subarticle, in accordance with 334-5.9.5. Any LOT terminated under this subarticle will be limited to a maximum Pay Factor of 1.00 (as defined in 334-8.2) for all quality characteristics and will include all material placed up to the point when the LOT was terminated.

In the event that a G_{mm} test result differs by more than 0.040 from the mix design G_{mm} , investigate the causes of the discrepancy and report the findings and proposed actions to the Engineer.

Table 334-6 Master Production Range	
Characteristic	Tolerance ⁽¹⁾
Asphalt Binder Content (%)	Target ± 0.55
Passing No. 200 Sieve (%)	Target ± 1.50
Air Voids (%)	2.30 – 6.00
Density (minimum % G_{mm}) ⁽²⁾	89.50
(1) Tolerances for sample size of $n = 1$ from the verified mix design	
(2) Based on an average of three to five randomly located cores	

334-5.5 Verification Testing: In order to determine the validity of the Contractor's QC test results prior to their use in the Acceptance decision, the Engineer will run verification tests.

334-5.5.1 Plant Testing: At the completion of each LOT, the Engineer will test a minimum of one Verification split sample randomly selected from the LOT. Results of the testing and analysis for the LOT will be made available to the Contractor within one working day from the time the LOT is completed. Verification samples shall be reheated at the target roadway compaction temperature for 1-1/2 hours, plus or minus 5 minutes, reduced to the appropriate testing size, and conditioned and tested as described in 334-5.1.1. In lieu of the 1-1/2 hours reheating procedure, the mixture may be reheated to within plus or minus 20°F of the roadway compaction temperature using a microwave oven. Stir the mixture as necessary during the reheating process to maintain temperature uniformity. Subsequently, condition and test the mixture as described in 334-5.1.1.

The Verification test results will be compared with the QC test results based on the between-laboratory precision values shown in Table 334-7.

Table 334-7 Between-Laboratory Precision Values	
Property	Maximum Difference
G_{mm}	0.016
G_{mb} (gyratory compacted samples)	0.022
G_{mb} (roadway cores)	0.014
P_b	0.44%
P_{-200}	FM 1-T 030 (Figure 2)
P_{-8}	FM 1-T 030 (Figure 2)

If all of the specified mix characteristics compare favorably, then the LOT will be accepted, with payment based on the Contractor's QC test data for the LOT.

If any of the results do not compare favorably, then the Resolution samples from the LOT will be sent to the Resolution laboratory for testing, as described in 334-5.6.

334-5.5.2 Roadway Testing: At the completion of each LOT, the Engineer will determine the density (G_{mb}) of each core (previously tested by QC) as described in 334-5.1.1 from the same subplot as the plant samples. For situations where roadway density is not required for the random subplot chosen, then another subplot shall be randomly chosen for roadway density cores only. Results of the testing and analysis for the LOT will be made available to the Contractor within one working day from the time the LOT is completed.

The individual Verification test results will be compared with individual QC test results by the Engineer based on the between-laboratory precision values given in Table 334-7.

If each of the core test results compare favorably, then the LOT will be accepted with respect to density, with payment based on the Contractor's QC test data for the LOT.

If any of the results do not compare favorably, then the core samples from the LOT will be sent to the Resolution laboratory for testing as specified in 334-5.6.

334-5.6 Resolution System:

334-5.6.1 Plant Samples: In the event of an unfavorable comparison between the Contractor's QC test results and the Engineer's Verification test results on any of the properties identified in Table 334-7, the Resolution laboratory will test all of the split samples from the LOT for only the property (or properties) in question. Resolution samples shall be reheated at the target roadway compaction temperature for 1-1/2 hours, plus or minus 5 minutes, reduced to the appropriate testing size, and conditioned and tested as described in 334-5.1.1. In lieu of the 1-1/2 hours reheating procedure, the mixture may be reheated to within plus or minus 20°F of the roadway compaction temperature using a microwave oven. Stir the mixture as necessary during the reheating process to maintain temperature uniformity. Subsequently, condition and test the mixture as described in 334-5.1.1.

334-5.6.2 Roadway Samples: In the event of an unfavorable comparison between the Contractor's QC test data and the Engineer's Verification test data on the density results, the Resolution laboratory will test all of the cores from the LOT. Testing will be as described in 334-5.1.1.

334-5.6.3 Resolution Determination: The Resolution test results (for the property or properties in question) will be compared with the QC test results based on the between-laboratory precision values shown in Table 334-7.

If the Resolution test results compare favorably with all of the QC results, then acceptance and payment for the LOT will be based on the QC results, and the Department will bear the costs associated with Resolution testing. No additional compensation, either monetary or time, will be made for the impacts of any such testing.

If the Resolution test results do not compare favorably with all of the QC results, then acceptance and payment for the LOT will be based on the Resolution test data for the LOT, and the costs of the Resolution testing will be deducted from monthly estimates. No additional time will be granted for the impacts of any such testing.

In addition, the material failure requirements of 334-5.4.4 apply to the Resolution test data. Address any material represented by the failing test results in accordance with 334-5.9.5. For this situation, the LOT will be limited to a maximum Pay Factor of 1.00 (as defined in 334-8.2) for all quality characteristics.

In the event of an unfavorable comparison between the Resolution test results and QC test results, make the necessary adjustments to assure that future comparisons are favorable.

334-5.7 Independent Verification (IV) Testing:

334-5.7.1 Plant: The Contractor shall provide sample boxes and take samples as directed by the Engineer for IV testing. Obtain enough material for three complete sets of tests (two samples for IV testing by the Engineer and one sample for testing by the Contractor). If agreed upon by both the Engineer and the Contractor, only one sample for IV testing by the Engineer may be obtained. IV samples will be reheated at the target roadway compaction temperature for 1-1/2 hours, plus or minus 5 minutes, reduced to the appropriate testing size, and conditioned and tested as described in 334-5.1.1. The Contractor's split sample, if tested immediately after sampling, shall be reduced to the appropriate testing size, and conditioned and tested as described in 334-5.1.1. If the Contractor's sample is not tested immediately after sampling, then the sample shall be reheated at the target roadway compaction temperature for 1-1/2 hours, plus or minus 5 minutes, reduced to the appropriate testing size, and conditioned and tested as described in 334-5.1.1. For the IV and Contractor's samples, in lieu of the 1-1/2 hours reheating procedure, the mixture may be reheated to within plus or minus 20°F of the roadway compaction temperature using a microwave oven. Stir the mixture as necessary during the reheating process to maintain temperature uniformity. Subsequently, condition and test the mixture as described in 334-5.1.1. The Contractor's test results shall be provided to the Engineer within one working day from the time the sample was obtained.

If any of the IV test results do not meet the requirements of Table 334-6, then a comparison of the IV test results and the Contractor's test results, if available, will be made. If a comparison of the IV test results and the Contractor's test results meets the precision values of Table 334-7 for the material properties in question, or if the Contractor's test results are not available, then the IV test results are considered verified and the Contractor shall cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Address any material represented by the failing test results in accordance with 334-5.9.5.

If a comparison of the IV test results and the Contractor's test results does not meet the precision values of Table 334-7 for the material properties in question, then the second IV sample shall be tested by the Engineer for the material properties in question. If a comparison between the first and second IV test results does not meet the precision values of Table 334-7 for the material properties in question, then the first IV test results are considered unverified for the material properties in question and no action shall be taken, with the following exception: if the first and second IV test results do not meet the precision values of Table 334-7 and the first IV test result and Contractor's test result do not meet the precision values of Table 334-7, yet all three test results do not meet the requirements of Table 334-6, then address any material represented by the failing test results in accordance with 334-5.9.5.

If a comparison between the first and second IV test results meets the precision values of Table 334-7 for the material properties in question, then the first IV sample is considered verified and the Contractor shall cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Address any material represented by the failing test results in accordance with 334-5.9.5.

The Engineer has the option to use the IV sample for comparison testing as specified in 334-6.

334-5.7.1.1 Asphalt Binder and Mixture Sampling for Determination of Asphalt Binder Quality: At the Department's request, obtain an asphalt binder sample from the asphalt plant storage tank and a corresponding asphalt mixture sample using binder from the same storage tank. Samples of asphalt binder and mixture shall be sampled the same day. The asphalt binder from the storage tank and the asphalt binder recovered from the asphalt mixture will be tested by the Department for compliance with Contract Documents.

334-5.7.2 Roadway: Obtain five 6-inch diameter roadway cores within 24 hours of placement, as directed by the Engineer, for IV testing. In situations where it is impractical to cut five cores per subplot, obtain a minimum of three cores per subplot at random locations, as identified by the Engineer. These independent cores will be obtained from the same LOTs and sublots as the Independent Verification Plant samples, or as directed by the Engineer. The density of these cores will be obtained as described in 334-5.1.1. If the average of the results for the subplot does not meet the requirements of Table 334-6 for density, then a comparison of the IV G_{mm} test results and the Contractor's G_{mm} test results, if available, will be made in accordance with the procedure provided in 334-5.7.1. Address any material represented by the failing test results in accordance with 334-5.9.5.

334-5.8 Surface Tolerance: The asphalt mixture will be accepted on the roadway with respect to surface tolerance in accordance with the applicable requirements of 330-9.

334-5.9 Minimum Acceptable Quality Levels:

334-5.9.1 PFs Below 0.90: In the event that an individual pay factor for any quality characteristic of a LOT falls below 0.90, take steps to correct the situation and report the actions to the Engineer. In the event that the pay factor for the same quality characteristic for two consecutive LOTs is below 0.90, cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Actions taken must be approved by the Engineer before production resumes.

334-5.9.2 CPFs Less Than 0.90 and Greater Than or Equal to 0.80: If the composite pay factor for the LOT is less than 0.90 and greater than or equal to 0.80, cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Actions taken must be approved by the Engineer before production resumes.

334-5.9.3 CPFs Less Than 0.80 and Greater Than or Equal to 0.75: If the CPF for the LOT is less than 0.80 and greater than or equal to 0.75, address the defective material in accordance with 334-5.9.5.

334-5.9.4 CPFs Less Than 0.75: If the CPF for the LOT is less than 0.75, remove and replace the defective LOT at no cost to the Department, or as approved by the Engineer.

334-5.9.5 Defective Material: Assume responsibility for removing and replacing all defective material placed on the project, at no cost to the Department.

As an exception to the above and upon approval of the Engineer, obtain an engineering analysis in accordance with Section 6 by an independent laboratory (as approved by the Engineer) to determine the disposition of the material. The engineering analysis must be signed and sealed by a Professional Engineer licensed in the State of Florida.

The Engineer may determine that an engineering analysis is not necessary or may perform an engineering analysis to determine the disposition of the material.

Any material that remains in place will be accepted with a CPF as determined by 334-8, or as determined by the Engineer.

If the defective material is due to a high air void failure, gradation, asphalt binder content or density failure, upon the approval of the Engineer the Contractor may perform delineation tests on roadway cores in lieu of an engineering analysis to determine the limits of the defective material that may require removal and replacement. Prior to any delineation testing, all sampling locations shall be approved by the Engineer. All delineation sampling and testing shall be monitored and verified by the Engineer. For materials that are defective due to low air voids, an engineering analysis is required.

When evaluating defective material by engineering analysis or delineation testing, at a minimum, evaluate all material located between passing QC, PC or IV test results. Any additional PC samples obtained in the same work shift after an IV sample has been obtained shall include enough material for three complete sets of tests (PC, IV and IV check samples) in the event the Contractor requests using the PC test results for engineering analysis or delineation. These additional PC samples must compare with verified IV test results as determined by the comparison process of 334-5.7.1 in order to be used for engineering analysis or delineation. Exceptions to this requirement shall be approved by the Engineer.

334-6 Comparison Testing.

At the start of the project (unless waived by the Engineer) and at other times as determined necessary by the Engineer, provide split samples for comparison testing with the Engineer. The purpose of these tests is to verify that the testing equipment is functioning properly and that the testing procedures are being performed correctly. In the event that the Engineer determines that there is a problem with the Contractor's testing equipment and/or testing procedures, immediately correct the problem to the Engineer's satisfaction. In the event that the problem is not immediately corrected, cease production of the asphalt mixture until the problem is adequately resolved to the satisfaction of the Engineer.

If so agreed to by both the Contractor and the Engineer, the split sample used for comparison testing may also be used for the QC sample. The split sample used for comparison testing must also meet the requirements for IV testing described in 334-5.7.

334-7 Method of Measurement.

For the work specified under this Section (including the pertinent provisions of Sections 320 and 330), the quantity to be paid for will be the weight of the mixture, in tons. For each pay item, excluding overbuild, the pay quantity will be based on the quantity placed on the project, limited to 110% of the adjusted plan quantity for the pay item. The adjusted plan quantity will be determined by dividing the pay item's original plan quantity (including any Engineer approved quantity revisions) by the design G_{mm} stated in 334-1.4, then multiplying it by the tonnage-weighted average G_{mm} of the mixes used for the pay item.

The bid price for the asphalt mix will include the cost of the liquid asphalt and the tack coat application as directed in 300-8. There will be no separate payment or unit price adjustment for the asphalt binder material in the asphalt mix. For the calculation of unit price adjustments of bituminous material, the average asphalt content will be based on the percentage specified in 9-2.1.2. The weight will be determined as provided in 320-3.2 (including the provisions for the automatic recordation system).

Prepare and submit a Certification of Quantities to the Engineer in accordance with 9-2.1.2.

334-8 Basis of Payment.

334-8.1 General: Price and payment will be full compensation for all the work specified under this Section (including the applicable requirements of Sections 320 and 330).

For materials accepted in accordance with 334-5, based upon the quality of the material, a pay adjustment will be applied to the bid price of the material as determined on a LOT by LOT basis. The pay adjustment will be assessed by calculating a Pay Factor for the following individual quality characteristics: pavement density, air voids, asphalt binder content, and the percentage passing the No. 200 and No. 8 sieves. The pay adjustment will be computed by multiplying a Composite Pay Factor (CPF) for the LOT by the bid price per ton.

334-8.2 Pay Factors:

334-8.2.1 Partial LOTs: For Partial LOTs where no random sample is obtained due to insufficient tonnage, a CPF of 1.00 shall be applied.

334-8.2.2 Two or Less Sublot Test Results: In the event that two or less sublot test results are available for a LOT, Pay Factors will be determined based on Table 334-8, using the average of the accumulated deviations from the target value. (Except for density, deviations are absolute values with no plus or minus signs.) Use the 1-Test column when there is only one sublot test result and use the 2-Tests column when there are two sublots.

Table 334-8 Small Quantity Pay Table		
Pay Factor	1 Sublot Test Deviation	2 Sublot Test Average Deviation
Asphalt Binder Content		
1.05	0.00-0.23	0.00-0.16
1.00	0.24-0.45	0.17-0.32
0.90	0.46-0.55	0.33-0.39
0.80	>0.55	>0.39
No. 8 Sieve		
1.05	0.00-2.25	0.00-1.59
1.00	2.26-4.50	1.60-3.18
0.90	4.51-5.50	3.19-3.89
0.80	>5.50	>3.89
No. 200 Sieve		
1.05	0.00-0.55	0.00-0.39
1.00	0.56-1.10	0.40-0.78
0.90	1.11-1.50	0.79-1.06
0.80	>1.50	>1.06
Air Voids		
1.05	0.00-0.50	0.00-0.35
1.00	0.51-1.00	0.36-0.71
0.90	1.01-1.70	0.72-1.20
0.80	1.71-2.00	1.21-1.41
0.70	2.01-2.50	1.42-1.77
0.55	>2.50	>1.77
Density ⁽¹⁾ Target = 93.00 percent of G_{mm}		
1.05	+ (0.00-3.50), - (0.00-0.50)	+ (0.00-3.25), - (0.00-0.35)
1.00	+ (3.51-4.50), - (0.51-1.00)	+ (3.26-4.25), - (0.36-0.71)
0.95	+ (4.51-5.00), - (1.01-2.00)	+ (4.26-4.75), - (0.72-1.41)
0.90	+ (5.01-5.50), - (2.01-3.00)	+ (4.76-5.25), - (1.42-2.12)
0.80	+ (>5.50), - (>3.00)	+ (>5.25), - (>2.12)
Density ⁽¹⁾ Target = 92.00 percent of G_{mm}		
1.05	+ (0.00-4.50), - (0.00-0.50)	+ (0.00-4.25), - (0.00-0.35)
1.00	+ (4.51-5.50), - (0.51-1.00)	+ (4.26-5.25), - (0.36-0.71)
0.95	+ (5.51-6.00), - (1.01-1.50)	+ (5.26-5.75), - (0.72-1.41)
0.90	+ (6.01-6.50), - (1.51-2.00)	+ (5.76-6.25), - (1.42-2.12)
0.80	+ (>6.50), - (>2.00)	+ (>6.25), - (>2.12)
(1). Each density test result is the average of three to five randomly located cores. The target density is 93.00 percent of G_{mm} (92.00 percent when compaction is limited to the static mode or for layers specified to be one inch thick). When compaction is limited to the static mode, no vibratory mode in the vertical direction will be allowed. Other vibratory modes will be allowed, if approved by the Engineer. In this case, the target density is 92.00 percent of G_{mm} .		

334-8.2.3 Three or More Sublot Test Results: When three or more sublot test results are available for a LOT, the variability-unknown, standard deviation method will be used to determine the estimated percentage of the LOT that is within the specification limits. The

number of significant figures used in the calculations will be in accordance with requirements of AASHTO R 11/ASTM E29, Absolute Method.

334-8.2.3.1 Percent Within Limits: The percent within limits (PWL) and Pay Factors for the LOT will be calculated as described below. Variables used in the calculations are as follows:

x	= individual test value (sublot)
n	= number of tests (sublots)
s	= sample standard deviation
$\Sigma(x^2)$	= summation of squares of individual test values
$(\Sigma x)^2$	= summation of individual test values squared
Q_U	= upper quality index
USL	= upper specification limit (target value plus upper specification limit from Table 334-9)
Q_L	= lower quality index
LSL	= lower specification limit (target value minus lower specification limit from Table 334-9)
P_U	= estimated percentage below the USL
P_L	= estimated percentage above the LSL

1. Calculate the arithmetic mean $(\bar{X})$ of the test values:

$$\bar{X} = \frac{\sum x}{n}$$

2. Calculate the sample standard deviation (s):

$$s = \sqrt{\frac{n \sum (x^2) - (\sum x)^2}{n(n-1)}}$$

3. Calculate the upper quality index (Q_U):

$$Q_U = \frac{USL - \bar{X}}{s}$$

4. Calculate the lower quality index (Q_L):

$$Q_L = \frac{\bar{X} - LSL}{s}$$

5. From Table 334-10, determine the percentage of work below the USL (P_U).

6. From Table 334-10, determine percentage of work above the LSL (P_L) Note: If USL or LSL is not specified; percentages within (USL or LSL) will be 100.

7. If Q_U or Q_L is a negative number, then calculate the percent within limits for Q_U or Q_L as follows: enter Table 334-10 with the positive value of Q_U or Q_L and obtain the corresponding percent within limits for the proper sample size. Subtract this number from 100.00. The resulting number is the value to be used in the next step (Step 8) for the calculation of quality level.

8. Calculate the percent within limits (PWL) = $(P_U + P_L) - 100$

9. Calculate the Pay Factor (PF) for each quality characteristic using the equation given in 334-8.2.3.2.

Table 334-9 Specification Limits	
Quality Characteristic	Specification Limits
Passing No. 8 sieve (percent)	Target ± 3.1
Passing No. 200 sieve (percent)	Target ± 1.0
Asphalt Content (percent)	Target ± 0.40
Air Voids (percent)	4.00 ± 1.20
Density, vibratory mode (percent of G_{mm}):	$93.00 + 4.00, - 1.20$
Density, static mode (percent of G_{mm}):	$92.00 + 5.00, - 1.50^{(1)}$
(1): No vibratory mode in the vertical direction will be allowed. Other vibratory modes will be allowed, if approved by the Engineer.	

Table 334-10 Percent Within Limits		
Quality Index	Percent within Limits for Selected Sample Size	
	n = 3	n = 4
0.00	50.00	50.00
0.05	51.38	51.67
0.10	52.76	53.33
0.15	54.15	55.00
0.20	55.54	56.67
0.25	56.95	58.33
0.30	58.37	60.00
0.35	59.80	61.67
0.40	61.26	63.33
0.45	62.74	65.00
0.50	64.25	66.67
0.55	65.80	68.33
0.60	67.39	70.00
0.65	69.03	71.67
0.70	70.73	73.33

Table 334-10 Percent Within Limits		
Quality Index	Percent within Limits for Selected Sample Size	
	n = 3	n = 4
0.75	72.50	75.00
0.80	74.36	76.67
0.85	76.33	78.33
0.90	78.45	80.00
0.95	80.75	81.67
1.00	83.33	83.33
1.05	86.34	85.00
1.10	90.16	86.67
1.15	97.13	88.33
1.20	100.00	90.00
1.25	100.00	91.67
1.30	100.00	93.33
1.35	100.00	95.00
1.40	100.00	96.67
1.45	100.00	98.33
1.50	100.00	100.00
1.55	100.00	100.00
1.60	100.00	100.00
1.65	100.00	100.00
1.70	100.00	100.00
1.75	100.00	100.00
1.80	100.00	100.00
1.85	100.00	100.00
1.90	100.00	100.00
1.95	100.00	100.00
2.00	100.00	100.00
2.05	100.00	100.00
2.10	100.00	100.00
2.15	100.00	100.00
2.20	100.00	100.00
2.25	100.00	100.00
2.30	100.00	100.00
2.35	100.00	100.00
2.40	100.00	100.00
2.45	100.00	100.00

Table 334-10 Percent Within Limits		
Quality Index	Percent within Limits for Selected Sample Size	
	n = 3	n = 4
2.50	100.00	100.00
2.55	100.00	100.00
2.60	100.00	100.00
2.65	100.00	100.00

334-8.2.3.2 Pay Factors (PF): Pay Factors will be calculated by using the following equation:

$$\text{Pay Factor} = (55 + 0.5 \times \text{PWL}) / 100$$

The PWL is determined from Step (8) of 334-8.2.3.1.

334-8.3 Composite Pay Factor (CPF): A CPF for the LOT will be calculated based on the individual PFs with the following weighting applied: 40% Density (D), 25% Air Voids (V_a), 20% asphalt binder content (P_b), 10% Passing No. 200 (P_{-200}) and 5% Passing No. 8 (P_{-8}). Calculate the CPF by using the following formula:

$$\text{CPF} = [(0.400 \times \text{PF } D) + (0.250 \times \text{PF } V_a) + (0.200 \times \text{PF } P_b) + (0.100 \times \text{PF } P_{-200}) + (0.050 \times \text{PF } P_{-8})]$$

Where the PF for each quality characteristic is determined in either 334-8.2.2 or 334-8.2.3, depending on the number of subplot tests. Note that the number after each multiplication will be rounded to the nearest 0.01.

The pay adjustment shall be computed by multiplying the CPF for the LOT by the bid price per ton.

334-8.4 Payment: Payment will be made under:

Item No. 334- 1- Superpave Asphaltic Concrete - per ton.

SECTION 425

INLETS, MANHOLES, AND JUNCTION BOXES

425-1 Description.

Construct inlets, manholes, and junction boxes from reinforced concrete as shown in the Standard Plans and the Plans. Furnish and install the necessary metal frames and gratings. Construct yard drains from concrete meeting the requirements of Section 347. Adjust structures shown in the Plans to be adjusted or requiring adjustment for the satisfactory completion of the work.

For precast structures, meet the requirements in 449-1.

425-2 Composition and Proportioning.

425-2.1 Concrete: For inlets, manholes, and junction boxes, use Class II or IV concrete, as designated in the Plans and Standard Plans and as specified in Section 346. For concrete aprons and yard drains, use concrete as specified in Section 347.

425-2.2 Mortar: For brick masonry, make the mortar by mixing one-part cement to three parts sand. Miami Oolitic rock screenings may be substituted for the sand, provided the screenings meet the requirements of 902 except for gradation requirements. Use materials passing the No. 8 sieve that are well graded from coarse to fine. Submit documentation, from a Department approved mine or a Department approved concrete plant, confirming the sand or sand substitute meets the requirements of 902-3.2.

Preblended masonry cement mortar may be used in lieu of the above-specified mortar. Deliver the product in original and unopened packages properly identified by brand name of manufacturer, net weight of package, and type. Store the material in full compliance with the manufacturer's recommendations. Material must be used within manufacturer's recommended shelf life.

425-3 Materials.

425-3.1 General: Meet the following requirements:

Sand (for mortar).....	Section 902
Portland Cement.....	Section 921
Water.....	Section 923
Reinforcing Steel	Sections 931 and 415
Liner Repair Systems.....	Section 948
Brick and Concrete Masonry Units.....	Section 949
Castings for Frames and Gratings.....	Section 962
Masonry Cement, Type M or S.....	ASTM C91
Preblended Dry Masonry Cement Mortar, Type M or S	ASTM C1714

425-3.2 Gratings, Covers, and Frames: Use gratings and frames fabricated from structural steel or cast iron as designated in the appropriate Standard Plans Index. When "Alt. G" grates are specified in the Plans, provide structural steel grates that are galvanized in accordance with the requirements of ASTM A123 and hardware galvanized in accordance with the requirements of ASTM A153.

Use rigid frames and covers either 24 inches or 36 inches or optional three-piece adjustable frames and covers as indicated in Standard Plans, Index 425-001.

For three-piece adjustable frames, the inner frame may include replaceable resilient seats to support the cover. In addition, the inner frame shall indicate it is adjustable, by clearly having the word “adjustable” imprinted into the exposed portion of the inner frame so “adjustable” is visible from the roadway after installation.

425-3.3 Skimmer: Include 1.5% by weight of carbon black with plastic skimmers on french drain systems.

425-4 Forms.

Design and construct wood or metal forms so that they may be removed without damaging the concrete. Build forms true to line and grade and brace them in a substantial and unyielding manner. Obtain the Engineer’s approval before filling them with concrete.

425-5 Precast Inlets, Manholes, and Junction Boxes.

Precast inlets, manholes, and junction boxes, designed and fabricated in accordance with the Plans, the Standard Plans and Section 449 may be substituted for cast-in-place units.

425-6 Skimmers.

Furnish and install skimmers in accordance with the Plans and Standard Plans.

425-7 Construction Methods.

425-7.1 Excavation: Excavate as specified in Section 125.

Where unsuitable material for foundations is encountered, excavate the unsuitable material and backfill with suitable material prior to constructing or setting inlets, manholes and junction boxes.

As an option to the above and with the Engineer’s approval, the Contractor may carry the walls down to a depth required for a satisfactory foundation, backfill to 8 inches below the flowline with clean sand and cast a non-reinforced 8 inch floor.

425-7.2 Placing and Curing Concrete: Place the concrete in the forms, to the depth shown in the Plans, and thoroughly vibrate it. After the concrete has hardened sufficiently, cover it with suitable material and keep it moist for a period of three days. Finish the traffic surface in accordance with 522-7.2, or with a simulated broom finish approved by the Engineer.

425-7.3 Setting Manhole Castings: After curing the concrete as specified above, set the frame of the casting in a full mortar bed composed of one-part portland cement to two parts of fine aggregate.

425-7.3.1 Standard Castings: Set manhole frames in a mortar bed and adjust to grade using brick or concrete grade rings, with a maximum 12 inch adjustment.

425-7.3.2 Optional Adjustable Castings: When using a three-piece adjustable frame and cover, install the frame and cover with brick or concrete grade rings to the base course height. Make adjustments using the inner frame in accordance with the manufacturer’s installation recommendations so the inner frame and cover meet the grade and slope of the pavement surface opened to traffic.

425-7.4 Reinforcing Steel: Follow the construction methods for the steel reinforcement as specified in Section 415.

425-7.5 Laying Brick: Brick masonry may be used if the structure is circular and constructed in place, or for adjustments of rectangular risers up to a maximum 12 inches in

height. Saturate all brick with water before laying. Bond the brick thoroughly into the mortar using the shove-joint method to lay the brick. Arrange headers and stretchers so as to bond the mass thoroughly. Finish the joints properly as the work progresses and ensure that they are not less than 1/4 inch or more than 3/4 inch in thickness. Do not use spalls or bats except for shaping around irregular openings or when unavoidable at corners.

425-7.6 Backfilling: Backfill as specified in Section 125, meeting the specific requirements for backfilling and compaction around inlets, manholes, and junction boxes detailed in 125-8.1 and 125-8.2. However; for outfall lines beyond the sidewalk or future sidewalk area, where no vehicular traffic will pass over the pipe, inlets, manholes, and junction boxes, compact backfill as required in 125-9.2.2.

425-7.7 Adjusting Structures: Adjust existing manholes, catch basins, inlets, valve boxes, etc., within the limits of the proposed work, to meet the finished grade of the proposed pavement, or if outside of the proposed pavement area, to the finished grade designated in the Plans for such structures. Adjust structures prior to placement of final asphalt pavement surface layer. Adjust structures to match final pavement surface cross-slope. Use materials and construction methods which meet the requirements specified above to adjust the existing structures.

The Contractor may extend manholes needing to be raised using adjustable extension rings of the type which do not require the removal of the existing manhole frame. Use an extension device that provides positive locking action and permits adjustment in height as well as diameter and meets the approval of the Engineer. When adjusting structures in flexible pavement, restore final road surface in accordance with Standard Plans, Index 125-001.

425-8 Method of Measurement.

The quantities to be paid for will be the number of inlets, manholes, junction boxes, and yard drains, completed and accepted; and the number of structures of these types (including also valve boxes) satisfactorily adjusted. Performance Turf will be paid in accordance with Section 570.

425-9 Basis of Payment.

425-9.1 New Structures: Price and payment will be full compensation for furnishing all materials and completing all work described herein or shown in the Plans, including all clearing and grubbing outside the limits of clearing and grubbing as shown in the Plans, all excavation except the volume included in the measurement designated to be paid for under the items for the grading work on the project, all backfilling around the structures, the disposal of surplus material, and the furnishing and placing of all aprons, gratings, frames, covers, and any other necessary fittings.

425-9.2 Adjusted Structures: When an item of payment for adjusting manholes, valve boxes, or inlets is provided in the proposal, price and payment will be full compensation for the number of such structures designated to be paid for under such separate items, and which are satisfactorily adjusted, at the Contract unit prices each for adjusting inlets, adjusting manholes, and adjusting valve boxes.

For any of such types of these structures required to be adjusted but for which no separate item of payment is shown in the proposal for the specific type, payment will be made under the item of adjusting miscellaneous structures.

425-9.3 Payment Items: Payment will be made under:

Item No.425- 1-	Inlets - each.
Item No.425- 2-	Manholes - each.
Item No.425- 3-	Junction Boxes - each.
Item No.425- 4-	Adjusting Inlets - each.
Item No.425- 5-	Adjusting Manholes - each.
Item No.425- 6-	Adjusting Valve Boxes - each.
Item No.425- 8-	Adjusting Miscellaneous Structures - each.
Item No.425- 10-	Yard Drains - each.
Item No. 425- 17-	Back of Sidewalk Endwall - each.

SECTION 430 PIPE CULVERTS

430-1 Description.

Furnish and install drainage pipe and end sections at the locations called for in the Plans. Furnish and construct joints and connections to existing pipes, catch basins, inlets, manholes, walls, etc., as may be required to complete the work.

Obtain pipe culverts and drainage products from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105.

At the beginning of each project, submit a notarized certification statement to the Engineer in accordance with Section 6. The Quality Control Manager's stamp or label on each product indicates certification that the product was fabricated in conformance with the Producer QC Plan, the Contract, and this Section. Ensure that each shipment of drainage products to the project site is accompanied with a QC signed or stamped delivery ticket providing the description and the list of the products.

When the Producer Quality Control Program is suspended by the Department, accept responsibility of either obtaining products from a plant with an approved Quality Control Program, or await re-approval of the plant. The Engineer will not allow changes in Contract Time or completion dates as a result of the plant's loss of qualification. Accept responsibility for all delay costs or other costs associated with the loss of the plant's qualification.

Construct structural plate pipe culverts or underdrains in accordance with Sections 435 and 440.

For pipe culverts installed by jack & bore, install in accordance with Section 556.

430-2 Materials.

430-2.1 Pipe: Meet the following requirements:

Concrete Pipe	Section 449
Steel Pipe	556-2.1
Round Rubber Gaskets	Section 942
Resilient Connectors*	Section 942
Corrugated Steel Pipe and Pipe Arch.....	Section 943
Corrugated Aluminum Pipe and Pipe Arch	Section 945
Corrugated Polyethylene Pipe.....	Section 948
Steel Reinforced Polyethylene Ribbed Pipe	Section 948
Steel Reinforced Polyethylene Corrugated Pipe.....	Section 948
Corrugated Polypropylene Pipe	Section 948
Corrugated Polyvinyl Chloride (PVC) Pipe	Section 948
Fiberglass Reinforced Polymer Pipe.....	Section 948
Metal Grates.....	Section 962
Pipe Sleeve Adapters.....	Section 948

*Use resilient connector products listed on the Department's Approved Product List (APL).

430-2.2 Joint Materials: Use joint materials specified in 430-7 through 430-9 according to type of pipe and conditions of usage.

430-2.3 Mortar: Use mortar composed of one part Portland cement and two parts of clean, sharp sand, to which mixture the Contractor may add hydrated lime in an amount not to exceed 15% of the cement content. Use mortar within 30 minutes after its preparation.

430-2.4 End Treatments: Meet the requirements of Section 425-3.1. For precast end treatments, meet the requirements in 449-1. Use the concrete Class designated in the Plans and Standard Plans, and as specified in Section 346 and 347.

430-2.5 Grates: Use metal gratings that meet the requirements of 962-8.

430-2.6 Filter Fabric: Use a Type D-3 filter fabric meeting the requirements specified in Section 985, and listed on the Department's Approved Product List (APL).

430-3 Type of Pipe to be Used.

430-3.1 General: Prior to the preconstruction conference, submit to the Engineer which optional pipe material from the optional materials tabulation sheet will be used. Once a pipe material is selected, do not change pipe materials without approval of the Engineer.

When the Plans designate a type (or types) of pipe, use only the type (or choose from the types) designated. As an exception, when the Plans designate reinforced concrete pipe as Class S, Class I, Class II, Class III and Class IV, the Contractor may use non-reinforced concrete pipe up to and including 36 inch in diameter.

430-3.2 Side Drain: If the Plans do not designate a type (or types) of pipe, the Contractor may use either a minimum Class I concrete pipe, corrugated steel pipe, corrugated aluminum pipe, corrugated high-density polyethylene pipe, steel reinforced polyethylene ribbed pipe, polypropylene pipe, or PVC pipe. If one of the metal types is chosen, use the minimum gage specified in Section 943 for steel pipe or Section 945 for aluminum pipe. Alternatively, when metal pipe is allowed and no future maintenance concerns exist, the Contractor may propose the pipe gage based on the Department's Drainage Manual and Culvert Service Life Estimator for approval by the Engineer. When extending existing pipes, construct the pipe extensions of the same size and kind as the existing pipe. Extensions of existing pipes, whose materials are no longer produced, shall be extended with the most similar pipe material available.

Non-reinforced concrete pipe may also be substituted for concrete pipe in side drains, subject to the provisions of 430-3.1.

430-4 Laying Pipe.

430-4.1 General: Lay all pipe, true to the lines and grades given, with bells up and spigot end fully entered into the bell. When pipe with quadrant reinforcement or circular pipe with elliptical reinforcement is used, install the pipe in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe are not more than five degrees from the vertical plane through the longitudinal axis of the pipe. Do not allow departure from and return to plan alignment and grade to exceed 1/16 inch per foot of nominal pipe length, with a total of not more than 1 inch departure from theoretical line and grade. Take up and relay any pipe that is not in true alignment or which shows any settlement after laying at no additional expense to the Department.

Do not use concrete pipe with lift holes except round pipe which has an inside diameter in excess of 54 inches or any elliptical pipe.

Repair lift holes, if present, with hand-placed, stiff, non-shrink, 1-to-1 mortar of cement and fine sand, after first washing out the hole with water. Completely fill the void created by the lift hole with mortar. Cover the repaired area with a 24 inch by 24 inch piece of filter fabric secured to the pipe.

Follow the manufacturer's instructions, to secure the filter fabric to the pipe, until the backfill is placed and compacted.

Do not cut or drill into or through the corrugations or ribs of plastic pipe except when necessary to meet the dimensional requirements shown in the Plans.

When installing pipes in structures, construct inlet and outlet pipes of the same size and kind as the connecting pipe shown in the Plans. Use the same pipe material within each continuous run of pipe. Extend the pipes through the walls for a distance beyond the outside surface sufficient for the intended connections, and construct the concrete around them neatly to prevent leakage along their outer surface as shown on Standard Plans, Index 425-001. Keep the inlet and outlet pipes flush with the inside of the wall. Resilient connectors as specified in 942-3 may be used in lieu of a masonry seal.

Furnish and install a filter fabric jacket around all pipe joints and the joint between the pipe and the structure in accordance with Standard Plans, Indexes 425-001 and 430-001. Use fabric meeting the physical requirements of Type D-3 specified in Section 985. Extend the fabric a minimum of 12 inches beyond each side of the joint or both edges of the coupling band, if a coupling band is used. The fabric must have a minimum width of 24 inches, and a length sufficient to provide a minimum overlap of 24 inches. Secure the filter fabric jacket against the outside of the pipe by metal or plastic strapping or by other methods approved by the Engineer.

Meet the following minimum joint standards:

Table 430-1	
Pipe Application	Minimum Standard
Storm and Cross Drains	Water-tight
Gutter Drain	Water-tight
Side Drains	Soil-tight

When rubber gaskets are to be installed in the pipe joint, the gasket must be the sole element relied on to maintain a tight joint. Soil tight joints must be watertight to 2 psi. Water-tight joints must be water-tight to 5 psi unless a higher pressure rating is required in the Plans.

When laying pipes that pass through mechanically stabilized earth (MSE) reinforced fill, connect the portion of the pipe within the wall to the external portion of the pipe run only after the full height of the wall supported embankment is in place.

When Wall Zone Pipes are shown in the Plans, meet the following requirements:

1. Use resilient connectors on pipes entering and leaving drainage structures.
2. Provide a 2 to 4 inch pipe overhang beyond the drainage structure internal walls.
3. For pipes without welded joints, meet the following additional requirements:
 - a. Pipe joints must be watertight to 10.8 psi when pulled out 2 inches from the fully homed position in both straight alignment and 5% deflection.
 - b. Do not allow the gap between sections of pipe to exceed 5/8 inch for all pipe diameters.

430-4.2 Trench Excavation: Excavate the trench for storm and cross drains, and side drains as specified in Section 125.

430-4.3 Foundation: Provide a suitable foundation, where the foundation material is of inadequate supporting value, as determined by the Engineer. Remove the unsuitable material and replace it with suitable material, as specified in 125-8. Where in the Engineer's opinion, the removal and replacement of unsuitable material is not practicable, he may direct alternates in the design of the pipeline, as required to provide adequate support. Minor changes in the grade or alignment will not be considered as an adequate basis for extra compensation.

Do not lay pipe on blocks or timbers, or on other unyielding material, except where the use of such devices is called for in the Plans.

430-4.4 Backfilling: Backfill around the pipe as specified in 125-8 unless specific backfilling procedures are described in the Contract Documents.

430-4.5 Plugging Pipe: When existing pipe culverts are to be permanently placed out of service, fill them with flowable fill that is non-excavatable, contains a minimum 350 pounds per cubic yard of cementitious material and meets the requirements of Section 121 and/or plug them with masonry plugs as shown in the Plans. Install masonry plugs that are a minimum of 8 inches in thickness, in accordance with Standard Plans, Index 430-001.

When proposed or existing pipe culverts are to be temporarily placed out of service, plug them with prefabricated plugs as shown in the Plans. Install prefabricated plugs in accordance with the manufacturer's recommendations. Do not fill or construct masonry plugs in any pipe culvert intended for current or future service.

430-4.6 End Treatment: Place an end treatment at each storm and cross drain, and side drain as shown in the Plans. Sod around end treatments in accordance with Standard Plans, Index 570-001.

430-4.6.1 U-Type Concrete Endwalls: Construct in accordance with the Plans and Standards Plans, Indexes 430-010 through 430-012 and Index 430-090.

430-4.6.2 Flared End Sections: Construct in accordance with the Plans and Standard Plans, Index 430-020. Use precast flared end sections only.

430-4.6.3 Mitered End Sections: Construct in accordance with the Plans and Standard Plans, Indexes 430-021 and 430-022. Construct mitered end sections for corrugated high-density polyethylene (HDPE) pipe, polypropylene (PP) pipe, steel reinforced polyethylene ribbed (SRPE) pipe and polyvinyl-chloride (PVC) pipe as specified in Section 948 and as detailed in the Standard Plans.

430-4.6.4 Straight and Winged Concrete Endwalls: Construct in accordance with the Plans and Standard Plans, Indexes 430-030 through 430-040.

Provide end treatments for corrugated polyethylene pipe, polypropylene pipe, and PVC pipe as specified in Section 948, or as detailed in the Plans.

430-4.7 Metal Pipe Protection: Apply a bituminous coating to the surface area of the pipe within and 12 inches beyond the concrete or mortar seal prior to sealing, to protect corrugated steel or aluminum pipe embedded in a concrete structure, such as an inlet, manhole, junction box, endwall, or concrete jacket.

Ensure that the surface preparation, application methods (dry film thickness and conditions during application), and equipment used are in accordance with the coating manufacturers' published specifications.

Obtain the Engineer's approval of the coating products used.

430-4.8 Pipe Inspection: For pipes installed under the roadway, inspection is to be conducted when backfill reaches 3 feet above the pipe crown or upon completion of the stabilized subgrade. For pipe installed within fills, including embankments confined by walls, inspection is to be conducted when compacted embankment reaches 3 feet above the pipe crown or the finished earthwork grade as specified in the Plans. Prior to conducting the inspection, submit to the Engineer an inspection schedule for dewatering the installed pipe, and the removal of all silt, debris, and obstructions. Submit pipe inspection videos and reports to the Department for review prior to the continuation of paving.

For pipe 48 inches or less in diameter, submit to the Engineer the video files and reports using low barrel distortion video equipment with laser profile technology, non-contact video micrometer and associated software. For all pipe types, provide a Pipe Observation Summary Report for each pipe run that shall include:

1. Actual recorded length and width measurements of all cracks within the pipe.
2. Actual recorded separation measurement of all rigid pipe joints.
3. Detailed written observations of leaks, debris, or other damage or defects.

For flexible pipe types, submit a Pipe Ovality Report for each pipe run that includes:

1. Representative diameter of the pipe.
2. Pipe deformation/deflections measurements with the 5% deflection limit clearly delineated.

Laser profiling and measurement technology must be certified by the company performing the work to be in compliance with the calibration criteria posted at: <https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/construction/engineers/environmental/laser-profiling-calibration-criteria.pdf>. Reports submitted in electronic media are preferred.

For pipe larger than 48 inches, submit to the Engineer a detailed visual inspection summary report for each pipe run, including photos, locations and details of deficient cracks, joint separations, infiltration, and damage.

The Engineer may waive this requirement for side drains and cross drains which are short enough to inspect from each end of the pipe.

430-4.8.1 Video Report: Provide video files via digital media (DVD, flash drive, or other) or by online digital distribution with a minimum standard resolution of 720 x 480. Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90-degree angle with the axis of the pipe and rotating 360 degrees. Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition.

The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. The video will include identification before each section of pipe filmed. The identification will include the project number, the structure number corresponding to the structure number in the Plans for the project, size of pipe, the date and time, and indicate which pipe is being filmed if multiple pipes are connected to the structure. Notes should be taken during the video recording process. Submit these notes along with the video.

Move the camera through the pipe at a speed not greater than 30 feet per minute. Mark the video with the distance down the pipe. The distance shall have an accuracy of one foot per 100 feet. Film the entire circumference at each joint. Stop the camera and pan when necessary to document and measure defects. Position the camera head perpendicular to all defects requiring measurement by the video micrometer.

430-4.8.2 Reinspection: At any time after reviewing the submitted pipe inspection reports, the Engineer may direct additional inspections. If no defects are observed during the reinspection, the Department will pay for the cost of the reinspections in accordance with 4-3. If defects are observed, the reinspection and all work performed to correct the defects will be done at no cost to the Department. Acceptance of all replacements or repairs will be based on video documentation of the completed work prior to Final Acceptance.

430-5 Removing Existing Pipe.

If the Plans indicate that existing pipe is to remain the property of the Department, collect and stack along the right-of-way all existing pipe or pipe arch so indicated in the Plans to be removed, or that does not conform to the lines and grades of the proposed work and that is not to be re-laid, as directed by the Engineer. Take care to prevent damage to salvageable pipe during removal and stacking operations.

430-6 Placing Pipe Under Railroad.

430-6.1 General: Construct pipe culverts under railroad tracks in accordance with the requirements of the railroad company.

Perform all the shoring under the tracks, and sheeting and bracing of the trench, required by the railroad company or deemed necessary by the Engineer in order to ensure safe and uninterrupted movement of the railroad equipment, at no expense to the Department.

430-6.2 Requirements of the Railroad Company: Install pipe using methods required by the railroad company and shown in the Contract Documents.

When the general method of installation required by the railroad company is indicated in the Plans, do not alter such method, or any other specific details of the installation which might be indicated in the Plans, without receiving approval or direction from the railroad, followed by written approval from the Engineer.

430-6.3 Notification to Railroad Company: Notify the railroad company and the Engineer at least ten days prior to the date on which pipe is to be placed under the railroad tracks.

430-6.4 Placing Pipe by Jacking: Obtain the Engineer's and the railroad company's approval of the details of the jacking method to be used, when placing pipe through the railroad embankment, before the work is started.

430-6.5 Use of Tunnel Liner: When the railroad company requires that a tunnel liner be used for placing the pipe in lieu of the jacking method, the Department will pay for the tunnel liner material separately in cases where the Contract Documents do not require the use of a tunnel liner. For these cases the Department will reimburse the Contractor for the actual cost of the liner, delivered at the site. The Department will base such cost on a liner having the minimum gage acceptable to the railroad.

430-7 Specific Requirements for Concrete Pipe.

430-7.1 Sealing Joints: Seal the pipe joints with round rubber or profile gaskets meeting the requirements of Section 449. Ensure that the gasket and the surface of the pipe joint, including the gasket recess, are clean and free from grit, dirt, and other foreign matter, at the time

the joints are made. In order to facilitate closure of the joint, application of a vegetable soap lubricant immediately before closing of the joint will be permitted. Prelubricated gaskets may be used in lieu of a vegetable soap lubricant when the lubricating material is certified to be inert with respect to the rubber material.

430-7.2 Laying Requirements for Concrete Pipe with Rubber Gasket Joints: Do not allow the gap between sections of pipe to exceed 5/8 inch for pipe diameters of 12 inches through 18 inches, 7/8 inch for pipe diameters of 24 through 66 inches, and 1 inch for pipe diameters 72 inches and larger. Where minor imperfections in the manufacture of the pipe create an apparent gap in excess of the tabulated gap, the Engineer will accept the joint provided that the imperfection does not exceed 1/3 the circumference of the pipe, and the rubber gasket is 1/4 inch or more past the pipe joint entrance taper. Where concrete pipes are outside of these tolerances, replace them at no expense to the Department. Do not apply mortar, joint compound, or other filler to the gap which would restrict the flexibility of the joint.

430-7.3 Field Joints for Elliptical Concrete Pipe: Use either a preformed plastic gasket material or an approved rubber gasket to make a field joint.

430-7.3.1 Plastic Gasket: Meet the following requirements when field joints are made from preformed plastic gasket material:

430-7.3.1.1 General: Install field joints in accordance with the manufacturer's instructions and the following:

430-7.3.1.2 Material: Meet the requirements of 942-2.

430-7.3.1.3 Joint Design: Ensure that the pipe manufacturer submits details to the Engineer regarding configuration of the joint and the amount of gasket material required to affect a satisfactory seal. Do not brush or wipe joint surfaces which are to be in contact with the gasket material with a cement slurry. Fill minor voids with cement slurry.

430-7.3.1.4 Primer: Apply a primer of the type recommended by the manufacturer of the gasket material to all joint surfaces which are to be in contact with the gasket material, prior to application of the gasket material. Thoroughly clean and dry the surface to be primed.

430-7.3.1.5 Application of Gasket: Apply gasket material to form a continuous gasket around the entire circumference of the leading edge of the tongue and the groove joint, in accordance with the detail shown on Standard Plans, Index 430-001. Do not remove the paper wrapper on the exterior surface of the gasket material until immediately prior to joining of sections. Apply plastic gasket material only to surfaces which are dry. When the atmospheric temperature is below 60°F, either store plastic joint seal gaskets in an area above 70°F, or artificially warm the gaskets to 70°F in a manner satisfactory to the Engineer.

430-7.3.1.6 Installation of Pipe: Remove and reposition or replace any displaced or contaminated gasket as directed by the Engineer. Install the pipe in a dry trench. Carefully shape the bottom of the trench to minimize the need for realignment of sections of pipe after they are placed in the trench. Hold to a minimum any realignment of a joint after the gaskets come into contact. Prior to joining the pipes, fill the entire joint with gasket material and ensure that when the pipes are joined there is evidence of squeeze-out of gasket material for the entire internal and external circumference of the joint. Trim excess material on the interior of the pipe to provide a smooth interior surface. If a joint is defective, remove the leading section of pipe and reseal the joint.

430-7.3.2 Rubber Gasket: Meet the following requirements when field joints are made with profile rubber gaskets:

430-7.3.2.1 General: Install field joints in accordance with the manufacturer's instructions and the following:

430-7.3.2.2 Material: Meet the requirements of 942-4.

430-7.3.2.3 Joint Design: Ensure that the pipe manufacturer submits details to the Engineer regarding configuration of the joint and gasket required to effect a satisfactory seal. Do not apply mortar, joint compound, or other filler which would restrict the flexibility of the gasket joint.

430-7.4 Requirements for Concrete Radius Pipe:

430-7.4.1 Design: Construct concrete radius pipe in segments not longer than 4 feet (along the pipe centerline), except where another length is called for in the Contract Documents. Join each segment using round rubber gaskets. Ensure that the pipe manufacturer submits details of the proposed joint, segment length and shape for approval by the Engineer, prior to manufacture.

430-7.4.2 Pre-Assembly: Ensure that the manufacturer pre-assembles the entire radius section in his yard, in the presence of the Engineer, to ensure a proper fit for all parts. At the option of the manufacturer, the Contractor may assemble the pipe without gaskets. Consecutively number the joints on both the interior and exterior surfaces of each joint, and make match marks showing proper position of joints. Install the pipe at the project site in the same order as pre-assembly.

430-8 Specific Requirements for Corrugated Metal Pipe.

430-8.1 Field Joints:

430-8.1.1 General: Make a field joint with locking bands, as specified in Article 9 of AASHTO M36 and AASHTO M196M for aluminum pipe. For aluminum pipe, fabricate bands from the same alloy as the culvert sheeting.

When existing pipe to be extended is helically fabricated, make a field joint between the existing pipe and the new pipe using one of the following methods:

1. Cut the new pipe to remove one of the re-rolled annular end sections required in Sections 943 or 945, or fabricate the pipe so that the re-rolled annular section is fabricated only on one end. Use either a spiral (helical) band with a gasket or a flat band with gaskets as required by 430-8.1.2 (2) to join the pipe sections.

2. The Contractor may construct a concrete jacket as shown on Standard Plans, Index 430-001.

430-8.1.2 Side Drain, Storm and Cross Drain, and Gutter Drains: Where corrugated metal pipe is used as side drain, storm and cross drain, or gutter drain, use a rubber or neoprene gasket of a design shown to provide a joint as specified in 430-4.

Use a gasket of one of the following dimensions:

1. For annular joints with 1/2 inch depth corrugation: either a single gasket a minimum of 7 inches by 3/8 inch or two gaskets a minimum of 3-1/2 inches by 3/8 inch; and for annular joints with 1 inch depth corrugations: either a single gasket a minimum of 7 inches by 7/8 inch or two gaskets a minimum of 3-1/2 inches by 7/8 inch.

2. For helical joints with 1/2 inch depth corrugation: either a single gasket a minimum of 5 inches by 1 inch or two gaskets a minimum of 3-1/2 inches by 1 inch; and for helical joints with 1 inch depth corrugations: either a single gasket a minimum of 5 inches by 1-1/2 inches or two gaskets a minimum of 3-1/2 inches by 1-1/2 inches.

3. Such other gasket designs as may be approved by the Engineer.

If, in lieu of a single gasket spanning the joint, two gaskets are used, place these individual gaskets approximately 2 inches from each pipe end at the joint. When two gaskets are used, seal the overlapping area on the coupling band between the gaskets consistent with the joint performance specified. The Contractor may tuck a strip of preformed gasket material over the bottom lip of the band for this purpose. Use coupling bands that provide a minimum circumferential overlap of 3 inches. As the end connections on the coupling band are tightened, ensure that there is no local bending of the band or the connection. Use precurved coupling bands on pipe diameters of 24 inches or less.

Use flat gaskets meeting the requirements of ASTM D1056, designation 2C2 or 2B3. In placing flat gaskets on pipe prior to placing the coupling band, do not stretch the gasket more than 15% of its original circumference. Use circular gaskets meeting the requirements of ASTM C361. Do not stretch the circular gasket more than 20% of its original circumference in placing the gasket on pipe. Use preformed plastic gasket material meeting the composition requirements of 942-2.2.

Apply an approved vegetable soap lubricant, as specified for concrete pipe in 430-7.1.1.

430-8.1.3 Alternate Joint: In lieu of the above-specified combination of locking bands and flat gaskets, the Contractor may make field joints for these pipe installations by the following combinations:

1. Use the metal bands as specified in Article 9 of AASHTO M36M that are at least 10-1/2 inches wide and consist of a flat central section with a corrugated section near each end, designed to match the annular corrugation in the pipe with which they are to be used. Connect the bands in a manner approved by the Engineer, with a suitable fastening device such as the use of two galvanized 1/2 inch diameter bolts through a galvanized bar and galvanized strap, suitably welded to the band. Use a strap that is the same gage as the band.

Where helically corrugated pipe is to be jointed by this alternate combination, ensure that at least the last two corrugations of each pipe section are annular, and designed such that the band will engage each pipe end with the next-to-outside annular corrugation.

2. For these bands, use a rubber gasket with a circular cross-section of the “O-ring” type conforming to ASTM C361. Use gaskets having the following cross-sectional diameter for the given size of pipe:

Table 430-2 Non-SI Units	
Pipe Size	Gasket Diameter
12 inches through 36 inches (with 1/2 inch depth corrugations)	13/16 inch
42 inches through 96 inches (with 1/2 inch depth corrugations)	7/8 inch
36 inches through 120 inches (with 1 inch depth corrugations)	1-3/8 inches

Use preformed gasket material to seal the overlapping area on the coupling band between gaskets.

3. Use channel band couplers in helical pipe with ends which have been reformed and flanged specifically to receive these bands. Use channel band couplers that are of a two piece design, are fabricated from galvanized steel stock conforming to AASHTO M36, have

2 inch by 2 inch by 3/16 inch angles fastened to the band ends to allow for proper tightening, and meet the following:

Table 430-3 Non SI Units	
Band Thickness	Pipe Wall Thickness
0.079 inch	0.109 inch or lighter
0.109 inch	0.138 inch or heavier
3/4 inch wide	0.109 inch or lighter
1 inch wide	0.138 inch or heavier

Furnish two 1/2 inch diameter connection bolts with each band, that conform to ASTM A307, Grade A and are electroplated in accordance with ASTM B633.

Use a gasket with the joint that is a hydrocarbon blend of butyl rubber meeting the chemical composition and physical properties of 942-2.2. Use a 3/8 by 3/4 inch gasket for pipe fabricated from 0.109 inch or lighter material and a 3/8 by 1 inch gasket for pipe fabricated from 0.138 inch and heavier material.

The Contractor may use a flange band coupler without the gasket for all applications other than side drain, storm and cross drain, and gutter drain.

Do not use the flange band coupler to join dissimilar types of pipe.

The Contractor may join reformed flanged helical pipe to existing annular or reformed pipe having annular ends. On non-gasketed installations, use either an annular band or an alternate joint described in 430-8.1.3. On gasketed installations, use an annular band, minimum of five corrugations in width, in conjunction with two O-ring gaskets as specified in 430-8.1.3. Use mastic material to seal the area of band overlap.

The minimum joint performance standards specified in 430-4.1 apply.

430-8.2 Laying and Shape Requirements for Corrugated Metal Pipe: Install pipe using either a trench or open ditch procedure.

Check pipe shape regularly during backfilling to verify acceptability of the construction method used. Pipe deflected 5% or more of the certified actual mean diameter of the pipe at final inspection shall be replaced at no cost to the Department. Deflection measurements are taken at the point of smallest diameter on the corrugations.

430-9 Specific Requirements for Steel Reinforced Polyethylene Ribbed Pipe, Corrugated High-Density Polyethylene Pipe, Polypropylene Pipe, and Polyvinyl Chloride (PVC) Pipe.

430-9.1 Sampling Requirements: Submit a sample of each pipe material and diameter used on each project to the Engineer a minimum of two weeks prior to the installation, provided that the pipe meets all of the following:

1. Pipe material is PVC, HDPE, steel reinforced polyethylene
2. Pipe is corrugated or ribbed
3. Pipe diameter is 12" or larger
4. Project quantity for a pipe diameter is more than 100 linear feet, unless intended for use as cross drain
5. Pipe is not perforated, unless the material is PVC
6. Pipe is intended for applications requiring 100 year design service life as defined in the Florida Department of Transportation Drainage Manual.

The length of each sample pipe section must comprise at least seven regular corrugations (not including the first three corrugations of the pipe on the bell or spigot ends).

430-9.2 Field Joints: Use gasketed joints to seal side drain, and storm and cross drain. Use gaskets meeting the requirements of Section 449. Ensure that the pipe manufacturer provides a joint design approved by the Engineer before use.

430-9.2.1 Requirements For Use In Structures With Resilient Connectors:

Use pipe sleeve adapters in accordance with Section 948-2 and 948-7.

430-9.3 Installation Requirements Including Trenching, Foundation and Backfilling Operations: Check structure shape regularly during backfilling to verify acceptability of the construction method used.

Replace pipe deflected 5% or more of the certified actual mean diameter of the pipe at final inspection at no cost to the Department.

430-10 Desilting Pipe or Concrete Box Culvert.

Desilt pipe culvert and concrete box culvert as designated in the Plans.

430-11 Method of Measurement.

430-11.1 New Pipe Installed by Excavation or Trenching: The quantity of storm and cross drain pipe, storm drain trench, side drain and gutter drain pipe, installed by pipe culvert optional material - excavation or trenching, to be paid for will be plan quantity, in place and accepted. The plan quantity will be determined from the inside wall of the structure and from station/offset location for end treatments as shown in the Plans, along the centerline of the pipe.

Adjustment to bid quantities, prices and payment will not be allowed for increases, decreases, or changes in material or installation requirements due to the use of any optional pipe materials.

If adjustments are required due to Plan errors or omissions or authorized field changes, the plotted material and not the material elected would be used to establish new pay quantities.

Pipe sizes other than round (elliptical/arch) are summarized and paid for using equivalent round pipe diameter.

430-11.2 New Pipe Installed by Jack & Bore: The quantity of storm and cross drain pipe, storm drain trench, side drain and gutter drain pipe, installed by pipe culvert optional material - jack & bore, to be paid for will be the plan quantity, in place and accepted. The measurement and payment will be the plan quantity length of the casing or carrier pipe installed by jack & bore.

Carrier pipe installed through/inside the casing is paid for as pipe culvert optional material – excavation or trenching.

430-11.3 End Treatment: The quantity of all end treatments to be paid for will be the number completed and accepted. For mitered end sections, the measurement will be per each end of pipe. Sod will be paid for in accordance with Section 570.

430-12 Basis of Payment.

430-12.1 General: Prices and payments will be full compensation for all work specified in this Section, including all excavation except the volume included in the items for the grading work on the project, and except for other items specified for separate payment in Section 125; all backfilling material and compaction; disposal of surplus material; and all clearing and grubbing outside of the required limits of clearing and grubbing as shown in the Plans.

No separate payment will be made for bituminous coating, concrete collars, or concrete jackets.

No payment will be made for failed bore paths, injection of excavatable flowable fill, products taken out of service, or incomplete installations. Payment will include all work and materials necessary for jack & bore, including boring, backfilling, flowable fill, and restoration materials necessary for a complete and accepted installation.

No payment will be made for jack & bore until a Bore Path Report has been submitted to the Engineer.

430-12.2 Removing Existing Pipe: When existing pipe is removed and replaced with new pipe approximately at the same location, the cost of excavating and removing the old pipe and of its disposal will be included in the Contract unit price for clearing and grubbing.

430-12.3 Site Restoration: The cost of restoring the site, as specified in 125-11, that is disturbed, solely for the purpose of constructing pipe culvert, will be included in the Contract unit price for the pipe culvert, unless designated specifically to be paid for under other items.

430-12.4 Plugging Pipes: The cost of temporarily plugging a pipe culvert, either proposed or existing, will be incidental to the contract unit price for new pipe culvert.

The cost of filling and/or plugging an existing pipe culvert that is to be permanently placed out of service will be paid for at the contract unit price for filling and plugging pipe, per cubic yard. Price and payment will be full compensation for flowable fill, masonry, concrete, mortar, and all labor and materials necessary to complete the work.

When the project includes no quantities for new pipe culverts, and temporary plugs are required for existing pipe culverts, the cost will be considered as extra work, in accordance with 4-3.5.

430-12.5 Desilting Pipe: Desilting pipe will be paid for at the contract unit price per foot for each pipe desilted. Price and payment will be full compensation for furnishing all equipment, tools and labor, disposal of silt and debris, and all incidentals necessary for satisfactorily performing the work.

430-12.6 Desilting Concrete Box Culverts: Price and payment will be full compensation for all work required.

430-12.7 Flared End Sections: Price and payment will be full compensation for all concrete, reinforcement, toe walls, and all work and materials required.

430-12.8 Mitered End Sections: Price and payment will be full compensation for all materials, pipe, grates when required, fasteners, reinforcing, connectors, anchors, concrete, sealants, jackets and coupling bands, and all work required.

430-12.9 U-Type Endwalls: Price and payment will be full compensation for all materials concrete, reinforcement, grate, baffles, accessories, and all work required. Fencing, when called for in the Plans, will be paid for under Fencing, Type B, per foot. Rip rap will be paid for in accordance with Section 530.

430-12.10 Straight and Winged Endwalls: Price and payment will be full compensation for all concrete, reinforcement, grate, accessories, and all work and materials required.

430-12.11 Railroad Requirements: Where pipe culvert is constructed under railroad tracks, the Contract unit price for the pipe culvert will include the costs of any jacking operations and the operation of placing the pipe by use of a tunnel liner, (except as specified for unanticipated tunnel liner, in 430-6.5, where reimbursement is to be made for such unanticipated liner), and all other work necessary to meet the requirements of the railroad company, excluding

the costs of watchman or flagman services provided by the railroad company, except as provided below.

The Department will reimburse the Contractor for the actual costs of any trestle bridge work which is performed by the railroad's forces, as billed to him by the railroad, less the value of any salvage materials derived there from, whether such salvage materials are retained by the railroad company or by the Contractor. When the work of shoring and bracing is to be performed by the railroad, such fact will be stipulated in the Contract Documents and the Contractor will be required to pay to the railroad the amount of such costs, which amount will be reimbursed to him by the Department. The Contract unit price for the pipe culvert shall include the costs of all other work of shoring and bracing.

430-12.12 Payment Items: Payment will be made under:

Item No. 430- 17-	Pipe Culvert Optional Material - Excavation or Trenching - per foot.
Item No. 430- 18-	Pipe Culvert Optional Material - Jack & Bore - per foot.
Item No. 430- 94-	Desilting Pipe - per foot.
Item No. 430- 96-	Polyvinyl Chloride Pipe - per foot.
Item No. 430- 98-	Mitered End Section - each.
Item No. 430-200-	Flared End Sections - each.
Item No. 430-400-	Winged Concrete Endwalls - each.
Item No. 430- 5-	Straight Concrete Endwalls - each.
Item No. 430- 6-	U-Type Concrete Endwalls - each.
Item No. 430-830-	Filling and Plugging Pipe - cubic yard.
Item No. 430-950-	Desilting Concrete Box Culvert - per cubic yard.

SECTION 530 REVTMENT SYSTEMS

530-1 Description.

530-1.1 Riprap: Construct riprap composed of sand-cement or rubble (consisting of broken stone or broken concrete) as shown in the Standard Plans and in the Plans.

530-1.2 Articulating Concrete Block (ACB) Revetment Systems: Furnish and install an ACB revetment system in accordance with this Section and in conformance with the lines, grades, design, and dimensions shown in the Plans. Submit vendor drawings for review and approval by the Engineer. Submit signed and sealed calculations of the block and cable sizing design for approval. Comply with the National Concrete Masonry Association's Design Manual for Articulating Concrete Block Revetment Systems, Second Edition, or the National Highway Institute, Hydraulic Engineering Circular (HEC) No. 23, Publication No. FHWA NHI 09-110. Use a minimum Factor of Safety of 1.5 and 0.5 inch for the block projection.

Blocks must be open cell and non-tapered unless otherwise stated in the Plans. Revetment cabling must be bi-directional or, for mono-directional cabling, the block installation must include a permanent mechanism within the block matrix to prevent lateral displacement of the installed blocks. Cabling must be polyester and free to move within the block.

Use only ACB revetment systems currently listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6, and include certified test reports from an independent test laboratory certifying the ACB revetment system meets the requirements of this Section.

If the ACB revetment system is intended for use as bridge abutment protection, include the following drawings with the APL submittal:

1. At the corner transition between the front and side slopes.
2. For anchorages, geotextile fabric, treatment of voids between adjacent blocks, limits on void size between adjacent blocks and other special details required to successfully install the ACB.
3. For areas adjacent to bridge abutments, detail mat placement around open in curves, connections, protection of mat ends, and splicing of mat.

530-1.3 Gabions: Furnish and install gabions, including gabion baskets and gabion mattresses, filled with rock in accordance with this Section and in conformance with the lines, grades, design, and dimensions shown in the Plans.

530-2 Materials.

530-2.1 Riprap:

530-2.1.1 Filter Fabric: Meet the following requirements:

Type D-2 Geotextile Fabric* Section 985

*Use products listed on the Department's APL.

Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the Department.

Place the filter fabric (fabric) at locations as shown in the Plans, in accordance with the manufacturer's directions. Place the fabric on areas with a uniform slope that are

reasonably smooth, free from mounds, windrows, and any debris or projections which might damage the fabric.

Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers. Repair in accordance with the manufacturer's instructions.

The Contractor may sew the seams to reduce overlaps as specified in 985-3. Follow the manufacturer's instructions for all seams and overlaps.

530-2.1.2 Prepackaged Sand-Cement Bags: Provide prepackaged sand-cement bags that meet the following requirements:

1. Evenly proportioned sand and cement in the ratio of five cubic feet of sand to 94 pounds of cement. Material proportioned by mass shall use a sand density of 85 pounds per cubic foot.
2. Sealed package of 80 pounds of sand-cement in a bag.
3. Bag made of scrim-reinforced paper capable of holding the sand-cement without leakage.
4. Sand meets requirements of Section 902-3.3
5. Type I/II cement meets requirements of Section 921.

Prepackaged Sand-Cement Bags shall be one of the products listed on the Department's Approved Product List. Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6. Include with the submittal a product data sheet, safety data sheet, product label, and a self-certified statement the product meets the requirements of this Section.

530-2.1.3 Rubble:

530-2.1.3.1 Rubble (Bank and Shore Protection): Provide sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone with a bulk specific gravity of at least 2.20. Ensure that stones are rough and angular.

For this application, use broken stone meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
670	290	60	2.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 85% of the material by weight is greater than Weight Minimum pounds.			

530-2.1.3.2 Rubble (Ditch Lining): Use sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone or broken concrete with a bulk specific gravity of at least 1.90. Ensure that stones or broken concrete are rough and angular.

Use broken stone or broken concrete meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
75	30	4	1.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 90% of the material by weight is greater than Weight Minimum pounds].			

530-2.1.3.3 Physical Requirements of Broken Stone and Broken

Concrete: Use broken stone and broken concrete meeting the following physical requirements:

Absorption (FM 1-T 85)	Maximum 5%
Los Angeles Abrasion (ASTM C535)	Maximum loss 45%*
Soundness (Sodium Sulphate) (AASHTO T 104)	Maximum loss 12%** (after five cycles)
Flat and elongated pieces	Materials with least dimension less than one third of greatest dimension not exceeding 10% by weight.
Dirt and Fines	Materials less than 1/2 inch in maximum dimension accumulated from interledge layers, blasting or handling operations not exceeding 5% by weight.
Drop Test*** (EM 1110-2-2302)	No new cracks developed, or no existing crack widened additional 0.1 inch, or final largest dimension greater than or equal to 90% original largest dimension of dropped piece.
* Ensure that granite does not have a loss greater than 55% and that broken concrete does not have a loss greater than 45%. ** The Engineer may accept rubble exceeding the soundness loss limitation if performance history shows that the material will be acceptable for the intended use. The Engineer will waive the soundness specification for rubble riprap (broken stone) when project documents indicate it will be placed in or adjacent to water or soil with a sulfate content less than 150 parts per million and a pH greater than 5.0. Soundness is not required for broken concrete. *** The Engineer will waive the Drop Test unless required to ensure structural integrity. Provide all equipment, labor and testing at no expense to the Department. EM refers to the US Army Corps of Engineer's Specification Engineering Method.	

530-2.1.3.4 Source Approval and Project Control: The Engineer will

approve construction aggregate sources in accordance with 6-2.3.

1. The Engineer may perform Independent Verification tests on all materials placed on the project.
2. The Engineer will check the gradation of the riprap by visual inspection at the project site. Resolve any difference of opinion with the Engineer in accordance with the method provided in FM 5-538. Provide all equipment, labor, and the sorting site at no expense to the Department.
3. The Engineer may test components in a blend of rubble processed from different geologic formations, members, groups, units, layers or seams. The Engineer may select components based on like color, surface texture, porosity, or hardness. The Engineer will reject any blend if a component that makes up at least five percent by volume of the blend does not meet these specifications.

530-2.1.4 Bedding Stone: Use Bedding Stone of either a durable quality limestone or other quarry run stone, with a bulk specific gravity of not less than 1.90 and that is reasonably free from thin, flat and elongated pieces. Ensure that the bedding stone is also reasonably free from organic matter and soft, friable particles. Meet the following gradation limits:

Standard Sieve Sizes - Inches	Individual Percentage by Weight Passing
12 inches	100
10 inches	70 to 100
6 inches	60 to 80
3 inches	30 to 50
1 inch	0 to 15

The Engineer will conduct source approval and project control of bedding stone as specified in 530-2.1.3.4. In lieu of limestone or other quarry run stone, the Contractor may substitute non-reinforced concrete from existing pavement that is to be removed and which meets the above requirements for commercial bedding stone.

530-2.2 Articulating Concrete Block (ACB) Revetment Systems: Obtain all precast block, cabling, anchors, and necessary incidental materials from the same manufacturer. ACB revetment systems must meet the requirements of ASTM D6684, ASTM D7276 and ASTM D7277. Submit to the Engineer certification from the manufacturer that the ACB revetment system meets the requirements of this Section.

ACB system components must meet the following requirements:

Concrete Section 347, ASTM D6684
 Cables and Fittings.....ASTM D6684
 Type D-2 Geotextile Fabric * Section 985
 Granular Underlay Section 901

*Use products listed on the Department's APL.

Cables must maintain at least 85% of original tensile strength (ASTM D638) after 1,000 hours exposure to a saturated solution of calcium hydroxide (pH greater than or equal to 11) at 73°F, plus or minus three degrees. Cables must not exceed a maximum of 0.5% moisture absorption at seven days, per ASTM D570. Cable crimps must be aluminum or stainless steel Type 304 or 316.

530-2.3 Gabions:

530-2.3.1 General: Provide gabions meeting the requirements of ASTM A974 and ASTM A975 as modified herein.

Allowable Gabion Wire and Connector Material	Substructure Environmental Classification
Polymeric	Any
Metallic	Slightly Aggressive
Metallic – Galvanized and PVC coated	Slightly Aggressive Moderately Aggressive
Metallic – Type 304 Stainless Steel, Size W1.4 (MW10) or larger	Slightly Aggressive Moderately Aggressive Extremely Aggressive (< 2,000 ppm Chlorides)
Metallic – Type 316 Stainless Steel, Size W1.4 (MW10) or larger	Any

530-2.3.2 Metallic Gabions: The components of metallic gabions must meet the following requirements:

Wire Mesh and Fabric* ASTM A974 and A975
Spiral Binders, Lacing Wire, Stiffeners, and Ring Wire
Fasteners ASTM A974 and A975
Stainless Steel Wire, Wire Fabric, and Lacing Wire
.....ASTM A1022

*Wire mesh must be Style 1 or Style 3. Wire fabric must be Style 1 or

Style 5.

530-2.3.3 Polymeric Gabions: Polymeric gabions must be constructed in general accordance with ASTM A974 using a single layer of structural geogrid instead of welded wire, and polymeric braid instead of ring wire fasteners. The structural geogrid must be Type R-1, 2, 3, 4, or 5 meeting the requirements of Section 985 and the following:

Tensile Strength @2% strain MD* 575 lb/ft
Tensile Strength @ 2% strain XD** 575 lb/ft
Junction Strength (% of Tensile Strength)..... 90%
Min UV Stability..... 85%
Min. Carbon Black Content (by Weight)..... 2%

*MD = machine direction

**XD = cross direction

Polymeric braid for seaming polymeric gabions or connecting metallic gabions must have a minimum tensile strength of 400 pounds for a 36 inch long specimen and contain at least 2% carbon black by weight.

530-2.3.4 Gabion Rock: Use rock meeting the requirements of ASTM D6711 to fill gabions. The rock must be reasonably free from thin, flat or elongated pieces. Rock size must be at least 1.25 times greater than the aperture size of the wire mesh or fabric. Each range of sizes may allow for a variation of 5% oversize rock by weight, 5% undersize rock by weight, or both.

Physical Property Requirements	Acceptable Range
Los Angeles Abrasion and ASTM C535	Maximum loss 40%
Bulk Specific Gravity	Minimum 2.20
Absorption, ASTM C127 and ASTM C128	Maximum 3%

530-2.3.5 Miscellaneous Components: Miscellaneous components for gabion installations must meet the following requirements:

Type D-2 Geotextile Fabric* Section 985

Granular Underlay Section 901

Anchors Section 451 or manufacturer's recommendations

*Use products listed on the Department's APL.

530-3 Construction and Installation.

530-3.1 Geotextile Fabric: Overlap adjacent strips of fabric a minimum of 24 inches, and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.

Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.

Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.

Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

530-3.2 Sand-Cement Bags:

530-3.2.1 Placing: Place the bags with their ends all in the same direction. Lay the bags with broken joints, in a regular pattern. Ram or pack the bags against each other so as to form a close and molded contact. Remove and replace bags ripped or torn in placing with sound, unbroken bags. Then, thoroughly saturate all bags with water.

530-3.2.2 Grouting: Immediately after watering, fill all openings between bags with dry grout composed of one-part Portland cement and five parts sand.

530-3.2.3 Toe Walls: Use sand-cement bags for the toe walls if required. Fill the entire trench excavated for the toe walls with sand-cement bags.

530-3.3 Rubble: Dump rubble in place forming a compact layer conforming to the neat lines and thickness specified in the Plans. Ensure that rubble does not segregate so that smaller pieces evenly fill the voids between the larger pieces.

530-3.4 Bedding Stone: Place a minimum one foot thick layer of bedding stone under all rubble riprap without puncturing or tearing the geotextile fabric. The Engineer will allow an in place thickness tolerance of plus or minus one inch.

Remove and replace geotextile fabric damaged as a result of operations at no expense to the Department.

530-3.5 Articulating Concrete Block (ACB) Revetment System: Install the ACB revetment system in accordance with ASTM D6884 and the manufacturer's recommendations, unless directed otherwise by the Engineer.

Prior to installation, construct the area to be stabilized to an elevation such that, upon completion of stabilizing operations, the completed stabilized subgrade will conform to the lines, grades and cross slope shown in the Plans. Bring the subgrade surface to a plane approximately parallel to the plane of the proposed finished surface, such that, upon placement of the mat, no individual block within the ACB mat will protrude more than one-half inch from any adjacent block. Uniformly compact each subgrade layer to achieve the density required in the Plans. If the Plans do not provide for stabilizing, compact the subgrade in both cuts and fills, to the density specified in ASTM D6884.

Embed anchors at least six feet into the subgrade at a 45 degree angle into the bank with a minimum pullout resistance of 875 pounds. In the presence of the Engineer, perform on-site anchor strength testing to verify the required pull out resistance is achieved. Anchor strength testing must be performed on the first two and final two installed anchors, and randomly throughout the installation operation such that 5% of all installed anchors are tested for pullout resistance. If any anchor fails to meet the pullout resistance requirement, test every subsequent installed anchor until a revised installation plan is proposed and approved by the Engineer. Anchor spacing cannot exceed four feet.

Immediately prior to placing the geotextile fabric and ACB system, inspect the prepared subgrade to ensure it is free of loose material and the surface is smoothly compacted. Place the geotextile fabric directly on the prepared area, in intimate contact with the subgrade and free of folds or wrinkles. Do not glue or physically bond the geotextile fabric to the ACB mat. Install a six inch thick layer of bedding stone under the geotextile fabric, when called for in the Plans.

When installing ACB systems around curves, the mats shall be matched up to the greatest extent possible. Gaps greater than one block size shall be filled with a block and grouted the depth of the block with non-structural grout.

Do not install blocks with chips that result in any block weighing less than 95% of the manufacture specified weight.

530-3.6 Gabions: Install double-twisted wire mesh gabions in accordance with ASTM D7014. Install welded wire fabric gabions and polymeric gabions in accordance with the manufacturer's recommendations.

Prior to installation, complete any required excavation and preparation of the foundation as shown in the Plans or as directed.

Install soil anchors as specified in the Plans.

All adjoining gabion units shall be connected along the perimeter of their contact surfaces to obtain a monolithic structure. If more than one tier, stagger the vertical joints of subsequent rows by one half cell length and adjoin the empty gabions to the top of the lower tier along the front and back edges of the contact surface.

Fill gabions in a manner that minimizes voids, protects against local deformation of the basket or mattress and prevents damage to PVC coating. At no point in the filling process may rock be mechanically placed from a height of over 36 inches from machine to fill area. Uniformly overfill gabions by 1 to 2 inches to compensate for future rock settlements.

Any damage to the basket, mattress, or coatings during assembly, placement, or filling shall be repaired promptly in accordance with the manufacturer's recommendations or replaced with undamaged gabion baskets.

530-4 Method of Measurement.

530-4.1 Sand-Cement Bags: The quantity to be paid for will be the volume, in cubic yards, calculated from the minimum dimensions shown in the Plans or Standard Plans, satisfactorily placed and accepted.

530-4.2 Rubble and Bedding Stone: The quantities to be paid for will be the weight, in tons, in surface dry natural state, by railroad scales, truck scales, or barge displacement. The Contractor shall determine the weights as follows:

1. Railroad Weights: The Contractor shall weigh railroad cars on railroad scales, before and after loading or before and after unloading. If weighed by other than the Engineer, a

certified statement of weights will be required. Certificates of weight, furnished by the railroad company, will be acceptable without further certification.

2. **Truck Weights:** The Contractor shall weigh trucks on certified scales, loaded and empty, as prescribed above for railroad weights. The Contractor shall weigh trucks in the presence of the Engineer, or submit certificates of weights.

3. **Barge Displacement:** The Engineer will measure each barge. The Contractor shall fit each barge with gauges graduated in 0.10 foot increments. The Contractor shall locate a gauge at each corner of the barge near the lower end of the rake. The Contractor shall furnish additional gauges amidships if the Engineer deems necessary. The Engineer will compute all weights.

530-4.3 Articulating Concrete Block (ACB) Revetment System: The quantity to be paid for will be the plan quantity, in square yards, completed and accepted, subject to the provisions of 9-3.2. No allowance will be made for ACB placed outside the Plan dimensions, unless the additional placement is ordered by the Engineer.

530-4.4 Gabions: For mattress type applications, the quantity to be paid for will be the plan quantity, in square yards, placed in the final locations.

For stacked basket applications, the quantity to be paid for will be the plan quantity, in cubic yards, placed in the final locations.

530-5 Basis of Payment.

530-5.1 Sand-Cement: Price and payment will be full compensation for all work specified in this Section, including all materials, labor, hauling, excavation, and backfill.

Include the cost of dressing and shaping the existing fills (or subgrade) for placing riprap in the Contract unit price for riprap (sand-cement).

530-5.2 Rubble: Price and payment will be full compensation for all work specified in this Section, including all materials, hauling, excavation, and backfill.

Include the cost of dressing and shaping the existing fills (or subgrade) for placing riprap in the Contract unit price for riprap (rubble).

As an exception to the above, concrete that is shown to be removed from an existing structure and subsequently disposed of by being used in the embankment as riprap will not be paid for under this Section. Include the cost of such work under removal of existing structures.

530-5.3 Bedding Stone: Price and payment will be full compensation for all work specified in this Section, including all materials and hauling.

Include the cost of dressing and shaping the existing fills (or subgrade) for placing bedding stone in the Contract unit price for riprap (rubble).

530-5.4 Geotextile Fabric: Include the cost of materials and installation of the geotextile fabric, including any repairs or replacement, in the Contract unit price for riprap or ACB revetment system.

530-5.5 Articulating Concrete Block (ACB) Revetment System: Price and payment will be full compensation for all work specified in this Section, including all materials, labor, hauling, excavation and backfill.

530-5.6 Gabions: Price and payment will be full compensation for all work specified in this Section, including all materials, labor, hauling, excavation and backfill.

530-5.7 Payment Items. Payment will be made under:

Item No. 530- 1-	Riprap Sand-Cement Bags - per cubic yard.
Item No. 530- 3-	Riprap (Rubble) - per ton.

Item No. 530- 4-	Articulating Concrete Block Revetment System - per square yard.
Item No. 530- 5-	Gabion
Item No. 530- 74-	Bedding Stone - per ton.

SECTION 570 PERFORMANCE TURF

570-1 Description.

Establish a growing, healthy turf over all areas designated in the Plans. Use sod in areas designated in the Plans to be sodded. Use seed, hydroseed, bonded fiber matrix, or sod in all other areas. Maintain performance turf areas until final acceptance of all Contract work in accordance with Section 5-11 and the establishment requirements of 570-4 have been met.

570-2 Materials.

Meet the following requirements:

Turf Materials	Section 981
Fertilizer	Section 982
Water	Section 983

570-3 Construction Methods.

570-3.1 General: Remove all construction debris in performance turf areas. Install performance turf at the earliest practical time for erosion control and establishment.

Shape the areas to be planted to the plan typical sections and lines and grade shown in the Plans.

Except in areas where the Contract Documents requires specific types of turf to match adjoining private property, any species of turf designated in Section 981 may be used. All of the permanent performance turf material shall be in place prior to final acceptance.

The Department will only pay for replanting as necessary due to factors determined by the Engineer to be beyond control of the Contractor.

Install all performance turf on shoulder areas prior to the placement of the friction course on adjacent pavement.

570-3.2 Seeding: At the Contractor's option, wildflower seed may be included in the performance turf seeding operation or performed separately from the performance turf seeding. Seed must produce visible seedlings within 45 days of planting.

Use of compost meeting the requirements of Section 987 as mulch is acceptable unless otherwise specified.

570-3.3 Sod: Place the sod on the prepared surface, with edges in close contact. Do not use sod which has been cut for more than 48 hours.

Place the sod to the edge of all landscape areas as shown in the Plans and the Standard Plans.

Place rolled sod parallel with the roadway and cut any exposed netting even with the sod edge.

Monitor placed sod for growth of exotic or invasive pest plants and noxious weeds. If exotic or invasive pest plants and/or noxious weeds manifest themselves within 30 days of placement of the sod during the months April through October, within 60 days of placement of the sod during the months of November through March treat affected areas by means acceptable to the Department at no expense to the Department. If pest plants and/or noxious weeds manifest themselves after the time frames described above from date of placement of sod, the Engineer, at his sole option, will determine if treatment is required and

whether or not the Contractor will be compensated for such treatment. If compensation is provided, payment will be made as Unforeseeable Work as described in 4-4.

Remove and replace any sod as directed by the Engineer.

570-3.4 Hydroseeding: Use equipment specifically designed for mixing the mulch, seed, fertilizer, tackifier and dye, and applying the slurry uniformly over the areas to be hydroseeded.

Use mulch that does not contain reprocessed wood or paper fibers. Ensure that 50% of the fibers will be retained on a twenty-five mesh screen.

Mix fertilizer as required into the hydroseeding slurry.

Ensure that the dye does not contain growth or germination inhibiting chemicals.

When polyacrylamide is used as part of hydroseeding mix, only anionic polymer formulation with free acrylamide monomer residual content of less than 0.05% is allowed. Cationic polyacrylamide shall not be used in any concentration. Do not spray polyacrylamide containing mixtures onto pavement. These may include tackifiers, flocculants or moisture-holding compounds.

570-3.5 Bonded Fiber Matrix (BFM): Meet the minimum physical and performance criteria of this Specification for use of BFM in hydroseeding operations or temporary non-vegetative erosion and sediment control methods.

Provide evidence of product performance testing, manufacturer's certification of training and material samples to the Engineer at least 7 calendar days prior to installation.

Provide documentation to the Engineer of manufacturer's testing at an independent laboratory, demonstrating superior performance of BFM as measured by reduced water runoff, reduced soil loss and faster seed germination in comparison to erosion control blankets.

Use only BFMs that contain all components pre-packaged by the manufacturer to assure material performance. Deliver materials in UV and weather resistant factory labeled packaging. Store and handle products in strict compliance with the manufacturer's directions.

When polyacrylamide is used as part of hydroseeding mix, only anionic polymer formulation with free acrylamide monomer residual content of less than 0.05% is allowed. Cationic polyacrylamide shall not be used in any concentration. Do not spray polyacrylamide containing mixtures onto pavement. These may include tackifiers, flocculants or moisture-holding compounds.

Meet the following requirements after application of the formed matrix:

Ensure that the tackifier does not dissolve or disperse upon re-wetting.

Ensure that the matrix has no gaps between the product and the soil and that it provides 100% coverage of all disturbed soil areas after application.

Ensure that the matrix has no germination or growth inhibiting properties and does not form a water-repelling crust.

Ensure that the matrix is comprised of materials which are 100% biodegradable and 100% beneficial to plant growth.

Mix and apply the BFM in strict compliance with the manufacturer's recommendations.

Apply the BFM to geotechnically stable slopes at the manufacturer's recommended rates.

Degradation of BFM will occur naturally as a result of chemical and biological hydrolysis, UV exposure and temperature fluctuations. Re-application, as determined by the

Engineer, will be required if BFM-treated soils are disturbed or water quality or turbidity tests show the need for an additional application.

570-3.6 Watering: Water all performance turf areas as necessary to produce a healthy and vigorous stand of turf. Ensure that the water used for turf irrigation meets the requirements of Section 983.

570-3.7 Fertilizing: Fertilize as necessary to promote turf growth and establishment based on soil testing. Refer to Section 982 for fertilizer rates.

For bid purposes, base estimated quantities on an initial application of 265 lb/acre and one subsequent application of 135 lb/acre of 16-0-8.

570-3.8 Shoulder Treatment: Provide soil for shoulder treatment in accordance with Standard Plans, Index 570-010. Soil needed for these purposes will be included in the corresponding Pay Item.

570-4 Turf Establishment.

Perform all work necessary, including watering and fertilizing, to sustain an established turf, free of noxious weeds, at no additional expense to the Department. Provide the filling, leveling, and repairing of any washed or eroded areas, as necessary.

Established turf is defined as follows:

1. An established root system (leaf blades break before seedlings or sod can be pulled from the soil by hand).
2. No bare spots larger than one square foot.
3. No continuous sod seams running perpendicular to the face of the slope.
4. No bare areas comprising more than 1% of any given 1,000 square foot area.
5. No deformation of the performance turf areas caused by mowing or other Contractor equipment.
6. No exposed sod netting.
7. No competing vegetation, exotic or invasive pest plants or noxious weeds.

Monitor turf areas and remove all competing vegetation, exotic or invasive pest plants, and noxious weeds (as listed by the Florida Exotic Pest Plant Council, Category I “List of Invasive Species”, Current Edition, <https://www.fleppc.org>). Remove such vegetation regularly by manual, mechanical, or chemical control means, as necessary. When selecting herbicides, pay particular attention to ensure use of chemicals that will not harm desired turf or wildflower species. Use herbicides in accordance with 7-1.7.

If at the time that all other work on the project is completed, but all turf areas have not met the requirements for established turf set forth in 570-4, continuously maintain all turf areas until the requirements for established turf set forth in 570-4 have been met.

During establishment and until the performance turf is established in accordance with this Section, continue the inspection, maintenance, and documentation of erosion and sedimentation control items in accordance with Section 104. Remove and dispose of all erosion and sedimentation control items after the performance turf has been established.

Notify the Engineer, with a minimum of seven calendar days advance notice, to conduct inspections of the performance turf at approximate 90-day intervals during the establishment period to determine establishment. Results of such inspections will be made available to the Contractor within seven calendar days of the date of inspection. Determination of an established turf will be based on the entire project and not in sections.

Upon the determination by the Engineer that the requirements of 570-4 have been met and an established turf has been achieved and all erosion and sedimentation control items have

been removed, the Engineer will release the Contractor from any further responsibility provided for in this Specification.

The Contractor's establishment obligations of this specification will not apply to deficiencies due to the following factors, if found by the Engineer to be beyond the control of the Contractor, his subcontractors, vendors or suppliers:

1. Determination that the deficiency was due to the failure of other features of the Contract.
2. Determination that the deficiency was the responsibility of a third party performing work not included in the Contract or its actions.

The Department will only pay for replanting as necessary due to factors determined by the Department to be beyond the control of the Contractor.

570-5 Responsible Party.

For the purposes of this Specification, the Contractor shall be the responsible party throughout construction and establishment periods.

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 facilities damaged due to lack of established turf and the obligations set forth in this Specification-for performance turf shall continue thereafter to be responsibility of the Contractor as otherwise provided in this Section.

570-6 Statewide Disputes Review Board.

The Statewide Disputes Review Board in effect for this Contract will resolve any and all disputes that may arise involving administration and enforcement of this Specification related to the remedial work performed during the warranty period. The Responsible Party and the Department acknowledge that use of the Statewide Disputes Review Board is required, and the determinations of the Statewide Disputes Review Board for disputes arising out of this Specification will be binding on both the Responsible Party and the Department, with no right of appeal by either party. Meet the requirements of 8-3.

570-7 Failure to Perform.

Should the Contractor fail to timely submit any dispute to the Statewide Disputes Review Board, refuse to submit any dispute to the Statewide Disputes Review Board, fail to provide an established turf in accordance with 570-4 within six months of final acceptance of the Contract in accordance with 5-11, or fail to compensate the Department for any remedial work performed by the Department in establishing a turf and other remedial work associated with lack of an established turf, including but not limited to, repair of shoulder or other areas due to erosion and removal of sediments deposited in roadside ditches and streams, 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 Contractor provides an established turf or makes full and complete payment for the remedial work performed by 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.

570-8 Method of Measurement.

The quantities to be paid for will be plan quantity in square yards based on the area shown in the Plans, completed and accepted.

570-9 Basis of Payment.

Prices and payments will be full compensation for all work and materials specified in this Section.

Payment will be made under:

Item No. 570- 1- Performance Turf - per square yard.

SIGNING, PAVEMENT MARKING, AND LIGHTING

SECTION 700 HIGHWAY SIGNING

700-1 Description.

Furnish and install roadway signs in accordance with the details in the Standard Plans and as shown in the Plans.

Erect ground traffic signs as signs on the shoulders, slopes, or medians. Signs are classified as single column(post), multi-column, or In-Street signs.

Erect overhead traffic signs partially or completely over the traveled roadway or mounted on bridges. Overhead traffic signs are classified as span wire mounted, mast arm mounted, overhead cantilever structure, or overhead span structure traffic signs.

The sign face(s) may be a single or combination of static sign panels, illuminated sign panels, dynamic message signs, or electronic display signs.

Fabricate standard sign panel messages in accordance with details included in the Standard Highway Signs (SHS) manual published by the U.S. Department of Transportation, the Plans, or Standard Plans. Submit shop drawings to the Department for approval, as specified in Section 5.

All Traffic Control Signals and Devices must meet the requirements of Section 603.

700-2 Materials.

700-2.1 General Requirements: Meet the following requirements:

Flowable Fill for precast foundation.....	Section 121
Structural Concrete	Section 346
Non-Structural Concrete	Section 347
Reinforcing Steel	Section 415
Structural Steel Welding	Section 460
Repair of Galvanized Surfaces.....	Section 562
Transformer Base.....	Section 965
Structural Steel and Miscellaneous Metal Items (other than aluminum).....	Section 962
Aluminum Items	Section 965
Retroreflective Sign Sheeting*	Section 994
Sign Panel Fabrication	Section 994
Internally Illuminated Signs*	Section 995-14
Highlighted Signs*	Section 995-15
Dynamic Message Signs*	Section 995-16
Electronic Display Signs (ERS, ESFS, BOS)*	Section 995-17
Sign Beacon*	Section 995-18
In-street Sign*	Section 995-19

*Use products listed on the Department's Approved Products List (APL).

700-2.2 Static Sign Assembly Requirements:

700-2.2.1 Static Sign Panels: Provide aluminum sheets for sign panels meeting the requirements of Section 965 and Section 994. Meet the minimum thickness requirements of Table 700-1.

For flip signs, use continuous hinges constructed of ANSI grade 316 stainless steel.

For In-Street signs, see 700-7.

Table 700-1 Static Sign Panel Requirements	
Type	Minimum Thickness
Single column ground sign	0.08 inch
All other sign panels	0.125 inch

700-2.2.2 Sign Panel Mounting Hardware: Provide aluminum materials (plates, bars, shapes, bolts, nuts, and washers) in accordance with Section 965. Stainless steel mounting hardware meeting Table 962-6 (ASTM F593 for bolts and ASTM F594 for nuts) may be substituted. Steel plates, shapes and hardware must meet Section 962.

700-2.2.3 Retroreflective Sign Sheeting: Sign sheeting must meet the requirements of Section 994 and Table 700-2.

Table 700-2 Retroreflective Sign Sheeting*		
Application	Sheeting System Type	Notes
All signs and retroreflective strips, except as otherwise noted below	Type XI	
School: S1-1, S3-1, S3-2, S4-5, S4-5a, S5-1 (SCHOOL portion) Bicycle: W11-1 Pedestrian: R1 6, R1 6a, R1 6b, R1 6c, R1 9, R1 9a, R10 15, W11 2 Shared Use Path (trail): W11 15, W11 15a	Type XI fluorescent yellow green sheeting**	Includes supplemental panels
* All digitally printed signs and red silkscreen inks require a clear overlay for UV protection. **Do not mix signs having fluorescent yellow green sheeting with signs having yellow retroreflective sheeting.		

700-2.3 Galvanized Bolt Assemblies (Bolts, Nuts, Washers): Provide galvanized bolt assemblies meeting Section 962 for high-strength steel fastener assemblies. Provide galvanized anchor rods, plate washers, U-bolts, and shims meeting the requirements of Section 962 for hardware not designated as high strength.

700-2.4 Sign Support Structure:

700-2.4.1 Single Column Ground Signs and Single Post Barrier Mounted Signs: Use aluminum tubing meeting the requirements of Section 965. For top-mounted single post barrier mounted signs use galvanized steel pipe meeting the requirements of Section 962. Steel shapes and welding must meet 962-10.

700-2.4.2 Multi-Column Ground Signs: Multi-column signs must be galvanized steel W or S beams steel columns meeting Section 962.

700-2.4.3 Overhead Signs: Obtain overhead sign structures from a facility that is listed on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105.

Meet the requirements for overhead signs in accordance with Section 962.

Repair galvanized surfaces in accordance with Section 562. Galvanizing materials used for repair must meet the requirements of Section 975.

700-2.4.4 Enhanced Highway Sign Assemblies: Use aluminum pedestal posts, transformer bases, anchors, caps, and shims meeting the requirements of Section 646.

700-2.5 Storage, Handling and Labeling: If signs are stored prior to installation, store them in accordance with the manufacturer's recommendations. Properly package signs to protect them during storage, shipment and handling to prevent damage to the sign face and panel.

Install a label on all permanent roadway signs on the back bottom edge with the date of installation, APL number of the base sheeting, and Name of Fabricator. Make the labels unobtrusive, but legible enough to be easily read by an observer on the ground when the sign is in its final position. Apply the label in a manner that is at least as durable as the sign face.

700-2.6 Acceptance of Signs:

700-2.6.1 Sign Inspection: Submit certification that the sign assembly meets the material and installation requirements of the Contract Documents. The Engineer will inspect the signs upon delivery to the storage or project site and again at the final construction inspection. Repair and replace damaged signs at no expense to the Department.

700-2.6.2 Imperfections and Repairs: Repair or replace signs containing imperfections or damage regardless of the kind, type, or cause of the imperfections or damage. For sign panels exceeding 30 square feet, the Contractor may make one patch, if necessary, to each sign panel not to exceed two square inches. Make repairs according to the manufacturer's recommendations. Ensure that completed repairs provide a level of quality necessary to maintain the service life of the sign and are satisfactory in appearance to the Engineer.

700-3 Static Signs.

700-3.1 Single Column and Multi-Column Ground Sign Assemblies: Furnish and install single column and multi-column ground signs in accordance with the Plans and Standard Plans, Indexes 700-010, 700-011, and 700-020.

700-3.1.1 Foundation: Construct foundations in accordance with the applicable Standard Plans. The Contractor may use precast foundations in augured or excavated holes a minimum of 12 inches larger than each axis dimension of the precast foundation. Obtain precast foundations from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105. The holes must be clean and without loose material. Temporary casing will be required if the soil is unstable. Fill the void around the precast foundation with flowable fill meeting the requirements of Section 121 or use clean sand placed using hydraulic methods.

700-3.1.2 Breakaway Support Mechanisms for Ground Traffic Signs:

700-3.1.2.1 Frangible Supports: Provide support posts for all frangible sign assemblies consisting of aluminum tubes up to 3-1/2 inches outside diameter with 3/16-inch wall thickness in accordance with the requirements in the Standard Plans.

700-3.1.2.2 Slip Bases: Slip base assemblies for single column signs will use aluminum sleeves and base plates. The slip base stub (the lower base plate assembly) may be galvanized steel in accordance with the Standard Plans.

Slip base assemblies for multi-column signs will use galvanized steel bases. All slip bases must be fabricated in accordance with the requirements of the Standard Plans.

700-3.1.3 Fabrication: Fabricate the supports and wind beams in accordance with the Standard Plans. Weld joints in accordance with Section 460.

Drill or sub-punch and ream holes in multi-column fuse plates and hinge plates.

Hot dip galvanize after fabrication. Remove all drips, runs or beads on base plate within washer contact areas (including saw cuts).

700-3.1.4 Installation: Verify the length of the column supports in the field prior to fabrication to permit the appropriate sign mounting height. Columns must be plumb and panels must be level with the proper orientation.

700-3.1.5 Retroreflective Strips for Signs: Use with static Wrong-Way Signs in accordance with Standard Plans, Index 700-101 and on other signs where retroreflective strip is called for in the Plans. The retroreflective strip must be 2 inches in width and 5 feet in height for all signs, except for signs mounted at a height of 4 feet, then use a retroreflective strip 2 feet in height. For the back of Railroad Crossbuck signs, the retroreflective strip will be 2 inches wide for the full length of the blade. Match the color of the retroreflective strip to the background color of the sign (per the SHS), except for YIELD signs and DO NOT ENTER signs, where the color must be red. Install retroreflective strips directly to a panel attached to the column in accordance with the manufacturer's instructions. Use a 0.040-inch minimum aluminum plate or other material approved by the sheeting manufacturer. Use stainless steel attachment hardware for the installation. Install retroreflective strips in a manner that does not require drilling holes through the column (post). A set screw no larger than 1/4 inch may be used with band attachments

700-3.1.6 Flip Signs: Install in accordance with the Plans and Standard Plans Index 700-010.

700-3.2 Single Post Barrier Mounted Signs: Meet the requirements of the Standard Plans, Indexes 700-012 and 700-013. Snap-in post cap is UV and weather-resistant glass-filled polyester cap.

700-3.3 Overhead Signs: Meet the requirements of the Plans and Standard Plans for overhead sign structures, including those for walk-in dynamic message signs (DMS).

700-3.3.1 Fabrication: Weld joints in accordance with Section 460.

Structural bolt hole diameters: Bolt diameter plus 1/16 inch.

Anchor bolt hole diameters: Bolt diameter plus 1/2 inch.

Upright splices are not allowed. Sign trusses may be fabricated in sections that fit into available galvanizing vats. Provide magnetic particle testing on 100% of upright fillet welds after galvanizing.

Shop assemble the entire structure after galvanizing to validate proper fit for all bolted connections. Complete necessary repairs prior to shipping. Assemblies may be separated for shipment.

700-3.3.2 Foundations: Meet the requirements of Section 455. Use Class IV concrete for spread footings and IV (Drilled Shaft) for drilled shaft foundations.

700-3.3.3 Installation: Install nuts on anchor bolts in accordance with Section 649 with the following exception. For cantilever overhead sign structures, after placement of the upright and prior to installation of the truss, adjust the leveling nuts beneath the

base plate to achieve the back rake shown on the Camber Diagram. If the top surface of the base plate has a slope that exceeds 1:40, use beveled washers under the top nuts. Split-lock washers are not permitted.

Install screens or grout pads in accordance with the Standard Plans, and as required by Section 649.

Install ASTM F3125, Grade A325 bolt, nut and washer assemblies in accordance with 460-5, except that 460-5.4.2 Preparation of Faying Surfaces is not required.

700-3.3.4 Erection of Signs and Sign Supports: Do not erect overhead sign supports until the concrete strength in the support footing is at least 2,500 psi. Determine concrete strength from tests on a minimum of two test cylinders sampled and tested in accordance with ASTM C31 and ASTM C39 and verifying test results have been submitted to the Engineer.

Erect the signs and sign structures in accordance with the details shown in the Plans. Re-galvanize damaged parts as specified in Section 562. Record the as-built anchor locations and submit to the Engineer prior to erecting the sign supports. Place backfill above spread footings prior to installation of the sign panels. Do not remove or reduce backfill without prior approval of the Engineer.

700-4 Enhanced Highway Sign Assemblies.

700-4.1 Description: Furnish and install enhanced highway sign assemblies in accordance with the Plans and Standard Plans, Index 700-120.

700-4.2 Materials: Use flashing beacons, highlighted signs, electronic display signs (EDS), and associated mounting hardware that meet the requirements of Section 995 and are listed on the APL. EDS are specialized electronic signs that include dynamic display components. The term EDS refers to a general category of electronically enhanced road signs (ERS) with warning regulatory, or guide legends; electronic speed feedback signs (ESFS); and blank-out signs (BOS).

For new roadside sign assemblies, provide support structure in accordance with Section 646. Meet all static sign requirements for the static portion of the highlighted sign (i.e., sign panel, reflective sheeting, etc.).

700-4.2.1 Warranty: Ensure that beacons, highlighted signs, and EDS have a manufacturer's warranty covering defects for three years from the date of final acceptance by the Engineer in accordance with 5-11 and Section 608.

700-4.3 Foundations: Construct foundations in accordance with the Standard Plans and Specification 646.

700-4.4 Installation: Install sign assemblies based on Alpha-Numeric Type designation shown in the Plans. Assembly Type is based on Power Configuration "Alpha" Identification and Numerical Identification shown in Standard Plans, Index 700-120. Install sign panel and wind beam meeting the requirements of this Section and Standard Plans, Index 700-110. For roadside sign assemblies, construct foundation and install support structure in accordance with 646-3 and the Standard Plans, Index 700-120. Install enhanced highway sign assembly components in accordance with the manufacturer's recommendations.

700-5 Internally Illuminated Signs.

700-5.1 Description: Furnish and install internally illuminated signs in accordance with the details specified in the Contract Documents.

700-5.2 Materials: Use internally illuminated signs and associated mounting hardware listed on the Department's Approved Product List (APL).

Use clamp-on cantilever arms for internally illuminated signs which meet all design and wind loading requirements as specified in the Contract Documents. Ensure the clamp is adjustable to accommodate various size poles.

700-5.2.1 Acceptance of Internally Illuminated Signs: Certify that signs and clamp-on cantilever arms provided meet the criteria in this Section and Section 995.

700-5.2.2 Warranty: Ensure that internally illuminated signs have a manufacturer's warranty covering defects for five years from the date of final acceptance by the Engineer in accordance with 5-11 and Section 608.

700-5.3 Installation of Internally Illuminated Signs: Secure the brackets to the sign housing in accordance with the manufacturer's instructions.

700-5.3.1 Double Sided Sign Assembly: Use a free swinging mounting method.

700-5.3.2 Two Point Support Assembly: Use a two point support assembly when the sign assembly is attached to a mast arm that is perpendicular to the street on which the sign is viewed.

Use a two point mast arm mounting assembly consisting of the following:

1. Stainless steel band or cable type clamp,
2. Clevis,
3. Span wire adapter,
4. Tri-stud hanger body.

Ensure one of the hangers has a mechanism for the horizontal adjustment of the sign.

700-5.3.3 One Point Support Assembly: Use a one point support assembly consisting of an articulated horizontal stainless steel band or cable type mast arm clamp, sign bracket and mounting hardware, when the sign assembly is attached to a mast arm that is diagonal to the street on which the sign is viewed. Do not use a one point support assembly for internally illuminated sign assemblies exceeding four feet in width.

Ensure the band or cable clamp is capable of horizontal rotation of 360 degrees.

700-5.3.4 Clamp-On Cantilever Arm: Attach the arm perpendicular to the street on which the sign assembly is viewed. Use a clamp and arm that are galvanized in accordance with ASTM A123 unless otherwise shown in the Plans. Ensure the arm has a cap secured in place.

700-5.3.5 Electrical Wiring: Unless otherwise shown in the Plans, install dedicated 14 AWG conductors to supply power to the sign and connect the conductors to a dedicated 15 amp circuit breaker located either inside the controller cabinet or inside the electrical service disconnect. Using the same conduit system for both signal cables and internally illuminated sign conductors is permitted, unless otherwise shown in the Plans.

Install conductors in such a manner as to prevent damage to conductors or conductor insulation. Remove and replace all damaged conductors /insulation at no additional cost to the Department.

Ensure drilled holes through which conductors pass through are fitted with a weather tight rubber grommet fitting.

Install continuous lengths of conductors between the dedicated circuit breaker and internally illuminated signs.

Do not splice conductors unless otherwise shown in the Plans.

Provide one photoelectric cell for all internally illuminated signs at each intersection. Use an L bracket to mount the photoelectric cell as specified in the Contract Documents. Connect the photoelectric cell to a contactor assembly inside the controller cabinet to provide switching of the internally illuminated signs.

700-6 Dynamic Message Signs.

700-6.1 General: Provide monochrome, tri-color, or full-color signs as shown in the Plans.

700-6.2 Sign Housing Requirements for all DMS: Ensure that the sign housing design and appearance is approved by the Engineer.

700-6.3 Characters, Fonts, and Color: Submit a list of the character fonts to the Engineer for approval.

700-6.4 Main Power Supply and Energy Distribution Specifications: Provide Type XHHW power cables sized as required by the NEC for acceptable voltage drops while supplying alternating current to the sign.

700-6.5 Uninterruptible Power Supply (UPS): The UPS system must be capable of displaying the current messages on a sign when a power outage occurs. Signs with an UPS must be able to operate on battery power and display text messages for a minimum of two hours.

700-6.6 Operational Support Supplies: Furnish the operational support supplies listed in Table 700-3. Promptly replace any of the supplies used to perform a warranty repair prior to final acceptance.

For every group of 10 or fewer DMSs provided or required, provide one set of supplies as follows:

Table 700-3 DMS Operational Support Supplies	
1 each	Sign controller and I/O board(s)
1 per DMS	LED display modules
1 each	Display power supply
1 each	Uninterruptible power supply
2 each	Surge suppression sets
1 each	Fan assembly

700-6.7 Message and Status Monitoring: Ensure that the sign can perform the following functions:

1. Control Selection – Ensure that local or remote sign control can be selected.
2. Message Selection – Ensure that the sign controller can select a blank message or any one of the messages stored in the sign controller’s nonvolatile memory when the control mode is set to local.
3. Message Implementation – Ensure that the sign controller can activate the selected message.

Ensure that each font may be customized, and modifications to a font may be downloaded to the sign controller from the TMC or a laptop computer at any time without any software or hardware modifications.

Ensure that there is no perceivable flicker or ghosting of the pixels during sign erasure and writing periods.

700-6.8 TMC Communication Specification for all DMS:

Provide communications line circuits that are point-to-point or multipoint, and that provide full duplex asynchronous data transmissions at the rate shown in the Contract Documents or directed by the Engineer.

Assign each sign controller a unique address.

700-6.9 Sign Control Software: Ensure that the laptop computer and sign can communicate when connected directly by an EIA-232 cable and via Ethernet. Ensure that the software allows communication between multiple users and multiple signs across the same communication network.

700-6.10 Sign Support Structure: Meet the requirements of 700-2.3.

700-6.11 Installation Requirements: Provide a walk-in DMS for locations over interstate travel lanes. Verify that any ventilation system incorporated within the sign is operational per the manufacturer's recommendations.

Install the DMS in accordance with the manufacturer's recommendations and Standard Plans, Index 700-090.

Ensure that the location of the lifting eyebolts, left in place or removed, is sealed to prevent water entry after installation.

Load the initial message libraries on both the sign control software and the sign controller. The Engineer will furnish the messages to be placed in these libraries.

700-6.12 Documentation: Submit documentation for electronic equipment in accordance with 603-6.

700-6.13 Licensing: Ensure that the manufacturer grants the Department a license that allows the Department to use and internally distribute any and all sign communications protocols, operating systems, drivers, and documentation.

700-6.14 Technical Assistance: Ensure that a manufacturer's representative is available to assist the Contractor's technical personnel during pre-installation testing and installation.

Do not provide initial power to the signs without the permission of the manufacturer's representative.

700-6.15 Pre-installation Field Testing: Conduct pre-installation tests on all units at a Contractor-provided facility within the appropriate District. Perform the tests on each unit supplied to verify that no damage was done to any sign during the shipment and delivery process. Notify the Engineer a minimum of 10 calendar days before the start of any tests. Conduct all tests according to the approved test procedures detailed in this Section. Each DMS must pass the individual tests detailed below prior to installation.

700-6.15.1 Material Inspection: Examine each DMS carefully to verify that the materials, design, construction, markings, and workmanship comply with all applicable standards, specifications, and requirements.

700-6.15.2 Operational Test: Operate each DMS long enough to permit equipment temperature stabilization, and to check and record an adequate number of performance characteristics to ensure compliance with applicable standards, specifications, and requirements.

700-6.15.3 Pre-Installation Test Failure Consequence: If any unit fails, the unit shall be corrected or another unit substituted in its place and the test repeated.

If a unit has been modified as a result of a failure, a report shall be prepared and submitted to the Engineer. The report shall describe the nature of the failure and the corrective action taken.

If a failure pattern develops, the Engineer may direct that design and construction modifications be made to all units without additional cost to the Department or an extension of the Contract Time.

700-6.16 Installed Site Tests: Conduct Intelligent Transportation System Device Installation testing in accordance with Section 611.

700-6.17 System Testing: Conduct Intelligent Transportation System Device Installation testing in accordance with Section 611.

700-7 In-Street Sign Assemblies.

700-7.1 Description: In-Street signs consist of the R1-6a or R1-6c In-Street Pedestrian Crossing Sign assemblies including the sign base.

700-7.2 Fabrication of Panel Messages: Fabricate standard sign panel messages in accordance with the Standard Plans. Sign panels of 9 inches in width x 27 inches in height or 12 inches x 36 inches are acceptable. See Standard Plans Section 700-102.

700-7.3 Installation: Install a fixed base connection in accordance with the manufacturer's instructions. Install portable base connections only for temporary applications at school crossings where a crossing guard is present during school arrival and departure times or when children are present.

700-8 Warranty.

Refer to Section 608 for Contractor Requirements. Transfer all warranties from the Manufacturer to the Department.

700-9 Method of Measurement.

700-9.1 Single Column Ground Sign Assembly: Measurement will be made per each and will consist of all signs mounted on a single column (post). Area measurement for an assembly will include the total sheeting area, excluding any reflective sign strips.

700-9.2 Multi-Column Ground Sign Assembly: Measurement will be made per each and will consist of all sign panels and columns for a multi-column ground sign. Area measurement for an assembly will include the total sheeting area, excluding any reflective sign strips.

700-9.3 Sign Panel: Measurement for each sign panel will be the width times height of the sheeting area. No separate payment will be made for any panels on a new sign assembly.

700-9.4 Overhead Static Sign Structure: Sign panels will be paid separately from the overhead static support structures. For signs mounted on a span wire or mast arm, payment for the structure will be paid under the applicable items in Section 634 or Section 649. Measurement for all other overhead static sign structures will be made per each.

700-9.5 Enhanced Highway Sign Assembly: Measurement for Enhanced Highway Sign Assembly will be made per each.

700-9.5.1 Sign Beacon: No separate measurement will be made for a sign beacon mounted on a new Enhanced Sign Assembly. Separate measurement for retrofit, per each sign beacon, will be made for installation on an existing sign panel or sign assembly.

Separate payment for removal will be made only when the sign panel or sign assembly is to remain.

700-9.5.2 Highlighted Signs: No separate measurement will be made for a highlighted sign as part of a new Enhanced Sign Assembly. Separate measurement for retrofit, per each highlighted sign, will be made for installation on an existing post or other structure. Measurement for Highlighted Sign will be made per each sign completed.

700-9.5.3 Electronic Display Sign: No separate measurement will be made for an EDS as part of a new Enhanced Sign Assembly. Separate measurement for retrofit, per each EDS, will be made for installation on an existing post or other structure. Measurement for EDS will be made per each sign completed.

700-9.6 Internally Illuminated Signs: Measurement for Internally Illuminated Sign will be made per each completed sign, regardless of whether the sign has one or more illuminated faces.

700-9.7 Embedded Dynamic Message Sign: Measurement for Embedded Dynamic Message Sign will be made for each completed sign, regardless of the number of embedded sign messages or housings mounted on a single or multi-post foundation.

700-9.8 Front Access Dynamic Message Sign: Measurement for Front Access Dynamic Message Sign will be made for each completed sign, regardless of the number of sign messages or housings mounted on a single or multi-post foundation.

700-9.9 Walk-in Dynamic Message Sign: Measurement for Embedded Dynamic Message Sign will be made for each completed sign.

700-9.10 Dynamic Message Sign Support Structure: Measurement for Dynamic Message Sign Support Structure will be made for each completed sign structure, regardless of the number of static and/or dynamic message signs supported.

700-9.11 Retroreflective Strip: Measurement for the retroreflective sign strip will be per each.

700-9.12 In Street Sign Assembly: Measurement will be made per each.

700-9.13 Removal and Relocation Operations: Measurement for removal or relocation operations of single column and multi-column signs will be made per each. Measurement for overhead sign structure will be made per each.

Measurement, per each, for removal of sign panels will only be made for signs not on an assembly.

700-10 Basis of Payment.

700-10.1 Single Column Ground Sign Assembly: The Contract unit price per each for single column ground mounted signs will include the sign panels, sheeting, support structure, foundation, hardware, and labor necessary for a complete and accepted installation. For flip-up signs, the assembly includes the hinge and any additional hardware.

700-10.2 Multi-Column Ground Sign Assembly: The Contract unit price per each for multi-column ground mounted signs will include the sign panels, support structure, foundation, hardware, and labor necessary for a complete and accepted installation.

700-10.3 Sign Panel: The Contract unit price per each sign panel will include the aluminum panel, sheeting, support structure, foundation, hardware, and labor necessary for a complete and accepted installation. For overhead sign panel replacements, hardware is inclusive of new vertical hangers and horizontal wind beams.

700-10.4 Overhead Static Sign Structure: The Contract unit price for each overhead static sign structure will include the support structure, foundation, hardware, and labor necessary for a complete and accepted installation.

700-10.5 Enhanced Highway Sign Assembly: The Contract unit price per each will include sign, electronics, cabinet, support structure, foundation, hardware, power system, and labor necessary for a complete and accepted installation.

700-10.5.1 Sign Beacon: The Contract unit price per each for sign beacon will consist of the flashing beacons, cabinet, housing, controller, hardware, and labor necessary for a complete and accepted installation. Signal cable from the cabinet to the signs will be paid separately under the applicable item for signal cable.

When solar power is specified in the Contract Documents, the Contract unit price will include the solar panel, auxiliary pole, batteries, and electronics.

700-10.5.2 Highlighted Signs: The Contract unit price per each for highlighted signs, furnished and installed, will include furnishing the sign, electronics, cabinet, support structure, foundation, hardware, and labor necessary for a complete and accepted installation. When solar power is specified in the Contract Documents, the Contract unit price will include the solar panel, auxiliary pole, batteries, and electronics.

Highlighted Signs used for Wrong Way sign installations do not include the Wrong Way Detection System; measurement and payment for the detection system will be made in accordance with Section 660.

700-10.5.3 Electronic Display Sign: The Contract unit price per each for electronic display sign will include static sign panels as required, electronic display, support structure, foundation, housing, cabinet, controller, speed detector, hardware, electrical connection, and labor necessary for a complete and accepted installation.

When the electronic display sign is ground mounted, the Contract price will include the support structure and foundation. All other mounting will include the hardware necessary to complete the attachment to the support structure; the span wire, monotube, or mast arm structure will be paid separately.

When solar power is specified in the Contract Documents, the Contract unit price will include the solar panel, auxiliary pole, and batteries.

700-10.6 Internally Illuminated Signs: The Contract unit price for each Internally Illuminated Sign will include the sign, housing, hardware, electrical connection, and labor necessary for a complete and accepted installation. All other mounting will include the hardware necessary to complete the attachment to the support structure; the span wire, monotube, or mast arm structure will be paid separately.

700-10.7 Embedded Dynamic Message Sign: The Contract unit price per each for Embedded DMS will include the sign, all hardware and software, testing, and warranty for a completed installation.

700-10.8 Front Access Dynamic Message Sign: The Contract unit price per each for Front Access DMS will include the sign, all hardware and software, testing, and warranty for a completed installation.

700-10.9 Walk-in Dynamic Message Sign: The Contract unit price per each for Walk-in DMS will include the sign, all hardware and software, testing, and warranty for a completed installation. When shown in the Contract Documents, payment for the Walk-in DMS will also include the Uninterruptible Power Supply.

700-10.10 Dynamic Message Sign Support Structure: The Contract unit price for each support structure will include posts and supports, catwalks, handrails, footings, foundation, excavation, site grounding, painting, and incidentals necessary for a complete and accepted installation.

700-10.11 Retroreflective Sign Strip: The Contract unit price per each will include the retroreflective sign strip, hardware, and labor necessary for a complete and accepted installation.

700-10.12 In Street Sign Assembly: The Contract unit price per each will include the vertical panel, retroreflective sign sheeting, rebounding boot support, and a base, for a complete and accepted installation.

700-10.13 Removal and Relocation Operations: The Contract unit price for removal of signs will include the removal of the support and footing. Restore the area to the condition of the adjacent area.

The Contract unit price for relocation of signs will consist of removing the existing sign assembly, including foundation removal and area restoration, and installing the sign at the new location shown in the Plans.

For the relocation of existing ground-mounted signs to be relocated or removed, after removing the sign panel from the assembly, remove supports and footings.

For the removal of overhead static sign structures, the Contract unit price will include the removal of the foundation: when partial foundation removal is called for, remove the support structure, and foundation to a minimum depth of four feet below existing grade; when complete foundation removal is called for, completely remove the support structure including the foundation.

700-10.14 Payment Items: Payment will be made under:

Item No. 700- 1-	Single Column Ground Sign Assembly, each.
Item No. 700- 2-	Multi-Column Ground Sign Assembly, each.
Item No. 700- 3-	Sign Panel, each.
Item No. 700- 4-	Overhead Static Sign Structure, each.
Item No. 700- 5-	Internally Illuminated Signs, each.
Item No. 700- 7-	Embedded Dynamic Message Sign - each.
Item No. 700- 8-	Front Access Dynamic Message Sign - each.
Item No. 700- 9-	Walk-in Dynamic Message Sign - each.
Item No. 700- 10-	Dynamic Message Sign Support Structure - each.
Item No. 700- 13-	Retroreflective Sign Strip, each.
Item No. 700- 14-	Enhanced Highway Sign Assembly, each.
Item No. 700- 15-	In Street Sign Assembly, each.

SECTION 711 THERMOPLASTIC PAVEMENT MARKINGS

711-1 Description.

Apply new thermoplastic pavement markings, or refurbish existing thermoplastic pavement markings, in accordance with the Contract Documents.

711-2 Materials.

Use only materials listed on the Department's Approved Product List (APL) meeting the following requirements.

Hot-Applied Standard and Refurbishment Thermoplastic	971-1 and 971-5
Preformed Thermoplastic.....	971-1 and 971-6
Glass Spheres	971-1 and 971-2

The Engineer will take random samples of all material in accordance with the Department's Sampling, Testing and Reporting Guide schedule.

711-3 Equipment.

Use equipment capable of providing continuous, uniform heating of the pavement marking material to temperatures exceeding 390°F, mixing and agitation of the material in the reservoir to provide a homogeneous mixture without segregation. Use equipment that will maintain the pavement marking material in a plastic state, in all mixing and conveying parts, including the line dispensing device until applied. Use equipment which can produce varying line widths and which meets the following requirements:

1. Capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, to produce a uniform application of pavement marking material and capable of following straight lines and making normal curves in a true arc.
2. Capable of applying glass spheres to the surface of the completed pavement marking by a double drop application for standard thermoplastic pavement markings and a single drop application for recapping and refurbishment thermoplastic pavement markings. The bead dispenser for the first bead drop shall be attached to the pavement marking machine in such a manner that the beads are dispensed closely behind the installed line. The second bead dispenser bead shall be attached to the pavement marking machine in such a manner that the beads are dispensed immediately after the first bead drop application. Use glass spheres dispensers equipped with an automatic cut-off control that is synchronized with the cut-off of the thermoplastic material and applies the glass spheres uniformly on the entire pavement markings surface with 50 to 60% embedment.
3. Equipped with a special kettle for uniformly heating and melting the pavement marking material. The kettle must be equipped with an automatic temperature control device and material thermometer for positive temperature control and to prevent overheating or scorching of the thermoplastic material.
4. Meet the requirements of the National Fire Protection Association, state, and local authorities.

711-4 Application.

711-4.1 General: Remove existing thermoplastic pavement markings using a method approved by the Engineer such that pavement surface scars or traces of the removed

thermoplastic pavement markings will not conflict with new pavement markings. Do not use paint to blackout, hide, or disguise existing pavement markings.

Before applying pavement markings, remove any material that would adversely affect the bond of the pavement markings by a method approved by the Engineer.

Before applying pavement markings to any portland cement concrete surface, apply a primer, sealer, or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches from any longitudinal joints of portland cement concrete pavement.

Apply thermoplastic material thickness according to 711-4.2. Application on open graded friction surfaces may require more thermoplastic material to achieve the required thickness above the pavement surface.

Apply pavement markings to dry surfaces only, and when the ambient air and surface temperature is at least 50°F and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply pavement markings to the same tolerances in dimensions and in alignment specified in 710-5. When applying pavement markings over existing markings, ensure that no more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.

Apply thermoplastic material to the pavement by extrusion or other means approved by the Engineer.

When thermoplastic pavement markings are to be removed and replaced, apply new thermoplastic pavement markings prior to opening to traffic.

Conduct field tests in accordance with FM 5-541 Part A. Take test readings representative of the pavement marking performance. Remove and replace pavement markings not meeting the requirements of this Section at no additional cost to the Department.

With the exception of short-term raised rumble strips, wait at least 14 days after constructing the final asphalt surface course to place thermoplastic pavement markings. Installation of thermoplastic on concrete requires a clean, dry surface. Follow the manufacturer's recommendations for surface preparation for thermoplastic on concrete. Provide temporary pavement markings during the interim period prior to opening the road to traffic.

711-4.1.1 Preformed Thermoplastic: Apply markings to dry surfaces only and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating. For railroad dynamic envelopes, keep all equipment and personnel out of the foul area.

711-4.2 Thickness:

711-4.2.1 Hot-Applied Standard Thermoplastic Markings: Apply or recap standard thermoplastic pavement markings for longitudinal lines to attain a minimum thickness of 0.10 inch or 100 mils and a maximum thickness 0.15 inch or 150 mils when measured above the pavement surface.

Markings other than longitudinal lines, wherever located, will have a thickness of 0.09 inch or 90 mils to 0.12 inch or 120 mils when measured above the pavement surface.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

711-4.2.2 Hot-Applied Refurbishment Thermoplastic Markings: Apply a minimum of 0.06 inch or 60 mils of thermoplastic material. Ensure that the combination of the existing marking and the overlay after application of glass spheres does not exceed the maximum thickness of 0.150 inch or 150 mils for all lines.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541 Part A.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 Part A within 30 days of receipt of the Contractor's certification.

711-4.2.3 Preformed Thermoplastic Markings: Apply 0.125 inch or 125 mils of preformed thermoplastic material.

Use preformed thermoplastic for bicycle markings, shared use path markings, 24-inch markings on special emphasis crosswalks, route shields, ramp exit numbers, railroad dynamic envelopes, white dotted lines (2'-4') with trailing black contrast, 12-inch transverse crosswalk lines with black contrast, 24-inch stop line with black contrast, and black contrast arrows, messages, and symbols.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of the pavement markings in accordance with FM 5-541 Part A.

711-4.3 Retroreflectivity:

711-4.3.1 General: Measure, record and certify on Department approved form and submit to the Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541 Part A.

711-4.3.2 Longitudinal Lines: Apply hot-applied standard and refurbishment thermoplastic pavement markings that will attain an initial retroreflectivity of not less than 450 mcd/m²/lx and not less than 350 mcd/m²/lx for white and yellow, respectively.

711-4.3.3 Markings Other Than Longitudinal Lines: Apply hot-applied standard and refurbishment thermoplastic markings that will attain an initial retroreflectivity of not less than 300 mcd/m²/lx and 250 mcd/m²/lx for white and yellow, respectively.

711-4.3.4 Preformed Markings: Apply white preformed thermoplastic markings that will attain an initial retroreflectivity of not less than 200 mcd/m²/lx. Black pavement markings must have a retroreflectance of less than 20 mcd/m²/lx.

711-4.4 Glass Spheres:

711-4.4.1 Longitudinal Lines: For hot-applied standard thermoplastic markings, apply the first drop of Type 4 or larger glass spheres immediately followed by the second drop of Type 1 glass spheres. For hot-applied refurbishment thermoplastic markings, apply a single drop of Type 3 glass spheres. Apply retroreflective glass spheres to all markings at the rates provided in the manufacturer's installation instructions.

711-4.4.2 Markings Other Than Longitudinal Lines: For hot-applied standard and refurbishment thermoplastic markings, apply a single drop of Type 1 glass spheres and sharp silica sand at the rates provided in the manufacturer's installation instructions. Use sharp silica sand materials meeting the requirements of 971-5.4. For hot-applied high friction thermoplastic markings, apply retroreflective and friction elements at the rates provided in the manufacturer's installation instructions.

711-4.4.3 Preformed Markings: These markings are factory supplied with glass spheres and friction elements. Apply additional glass spheres and friction elements in accordance with the manufacturer's instructions.

711-5 Contractor's Responsibility for Notification.

Notify the Engineer prior to the placement of the materials. At the time of notification, submit a certification to the Engineer with the APL number and the batch or LOT numbers of the thermoplastic and glass spheres to be used. Packaging labels that contain the information required by 971-1.1 will be accepted in place of a certification.

711-6 Protection of Newly Applied Thermoplastic Pavement Markings.

Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

711-7 Observation Period.

Longitudinal pavement markings are subject to a 180 day observation period under normal traffic. The observation period shall begin with the satisfactory completion and acceptance of the work.

The longitudinal pavement markings shall show no signs of failure due to blistering, excessive cracking, chipping, discoloration, poor adhesion to the pavement, loss of retroreflectivity or vehicular damage. The retroreflectivity shall meet the initial requirements of 711-4.3. The Department reserves the right to check the retroreflectivity any time prior to the end of the observation period.

Replace, at no additional expense to the Department, any longitudinal pavement markings that do not perform satisfactorily under traffic during the 180 day observation period.

711-8 Corrections for Deficiencies.

Recapping applies to conditions where additional pavement marking material is applied to new or refurbished pavement markings to correct a thickness deficiency. Correct deficiencies by recapping or removal and reapplication of a 1 mile section centered around the deficiency, as determined by the Engineer, at no additional cost to the Department.

711-9 Method of Measurement.

711-9.1 Thermoplastic Pavement Markings: The plan quantity, acceptably applied and subject to 9-1.3.2, under this Section will be paid as follows:

1. The length, in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines.
2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, parking spaces, special emphasis crosswalk markings, and railroad dynamic envelope markings.
3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.

The gross mile measurement will be taken as the distance from the beginning of the thermoplastic line to the end of the thermoplastic line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc.

711-9.2 Removal of Existing Thermoplastic Markings: The quantity for removal of existing thermoplastic pavement markings to be paid will be the area, in square feet, acceptably removed. Payment for removal of thermoplastic pavement markings will only be made for locations where the existing pavement surface is to remain.

711-10 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 711	Thermoplastic Pavement Markings
	Solid - per gross mile.
	Solid - per linear foot.
	Skip - per gross mile.
	Dotted - per gross mile.
	Message or Symbol - each.
	Arrows - each.
	Yield Line - per linear foot.
	Railroad Dynamic Envelope - per linear foot.
	Remove - per square foot.