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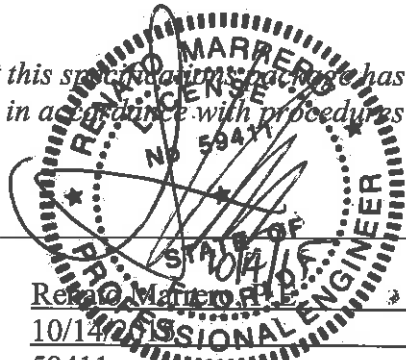


SPECIFICATIONS PACKAGE
FINANCIAL PROJECT ID(S). 437160-1-72-01
CONTRACT# E6K10
MOVABLE BRIDGE BICYCLE PLATE INSTALLATION
DISTRICT SIX
MIAMI-DADE & MONROE COUNTY

The July 2015 Edition of the Florida Department of Transportation Standard Specifications is revised as follows:

I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.

Signature and Seal: _____



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SPECIAL PROVISIONS

DEFINITIONS AND TERMS.

(REV. 07-30-13) (1-15)

ARTICLE 1-3 The definition of ‘Engineer’ is modified as follows:

In the first sentence and throughout the Specifications, “Director, Office of Maintenance” is substituted in place of the “Director, Office of Construction”, unless otherwise amended by the Specifications.

ARTICLE 1-3 is expanded by the following:

Work Document.

Work Documents identify the location, description; time allotted and amount of work to be accomplished.

PROPOSAL REQUIREMENTS AND CONDITIONS – PREQUALIFICATION OF BIDDERS.

(REV 07-30-13) (1-15)

ARTICLE 2-1 is deleted and the following substituted:

2-1 Contractor Experience.

The Department does not require a Contractor to have a certificate of qualification if bidding Maintenance contracts. Maintenance contracts may require potential bidders to have and document certain experience in the type of work required for the contract. If this requirement is applicable to a contract, detailed experience requirements will be listed in the advertisement and a form will be included with the bid package to document such experience. The form must be fully and accurately completed by the potential bidder and received by the Department before or at the opening of the bids.

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:

- a. A bid on a contract to provide any goods or services to a public entity.
- b. A bid on a contract with a public entity for the construction or repair of a public building or public work.
- c. 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.

PROPOSAL REQUIREMENTS AND CONDITIONS - EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK.

(REV 2-19-14) (FA 2-20-14) (7-15)

ARTICLE 2-4 is deleted and the following substituted:

2-4 Examination of Contract Documents and Site of Work.

Examine the Contract Documents and the site of the proposed work carefully before submitting a proposal for the work contemplated. Investigate the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of all Contract Documents.

Direct all questions to the Department by posting them to the Department's website at the following URL address:

<https://www3b.dot.state.fl.us/BidQuestionsAndAnswers/Proposal.aspx/SearchProposal> .

Questions posted to this site before 5:00 P.M. (EST) on the seventh calendar day prior to the bid opening, or tenth calendar day prior to the December bid opening, will be responded to by the Department. For questions posted after these times, an answer cannot be assured. For all questions posted before the deadline, the Department will provide and post responses at the same website before 8:00 A.M. (EST) on the second calendar day prior to bid opening. Take responsibility to review and be familiar with all questions and responses posted to this website and to make any necessary adjustments in the proposal accordingly. If the Department's web site cannot be accessed, contact the Contract Supervisor at (305) 470-5404.

When, in the sole judgment of the Department, responses to questions require plans revisions, specifications revisions and/or addenda, the Contracts Office will issue them as necessary.

The Department does not guarantee the details pertaining to borings, as shown on the plans, to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated. The Contractor shall examine boring data, where available, and make his own interpretation of the subsoil investigations and other preliminary data, and shall base his bid on his 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.

AWARD AND EXECUTION OF CONTRACT.

(REV 1-27-15)

SUBARTICLE 3-2.2 is deleted.

SUBARTICLE 3-5.1 is expanded by the following:

A performance and payment bond for 100% of the Contract amount will be required to be maintained in effect throughout the life of the Contract.

If this Contract is for an improvement, demolition, or removal Contract of \$25,000 or less, the security may be a cashier's check, certified check or bank or postal money order. The Department will deposit and hold the security, paying no interest throughout the life of the Contract. The security will not be refunded until written notice of final acceptance is issued by the Department.

SCOPE OF WORK – INTENT OF CONTRACT.

(REV 8-19-09) (FA 8-24-09) (7-15)

ARTICLE 4-1 is expanded by the following:

The Improvements under this Contract consist of providing labor, equipment and materials for installing bicycle steel plates on the bascule spans of movable bridges with open grid decks. The work will include the balancing and counterweight adjustment of each movable bridge span. Work locations and plans are provided in Exhibits A to G. The summary of pay items for this project is listed in the Plans.

CONTROL OF THE WORK.

(REV. 9-25-14) (1-15)

SUBARTICLE 5-1.1 is expanded as follows:

In this contract, references to “the plans” mean the Department’s Design Standards, and revisions thereto current at the time of contract letting, unless otherwise directed in writing by the Engineer. When plans are included as part of this contract, references in this contract to “the plans” mean such plans and the Department’s Design Standards, and revisions thereto current at the time of contract letting, unless otherwise directed in writing by the Engineer.

ARTICLE 5-1 is expanded by the addition of the following new Subarticle:

5-1.7 Work Documents/Liquidated Damages: Should any of the specific work locations, identified in this Contract, be inaccessible due to construction, permitting, or other activities, alternate work locations may be substituted at the discretion of the Engineer, upon written agreement of the Contractor. The Contractor will be allowed 14 calendar days from receipt of the initial Work Document to respond and begin work. The 14 calendar days begin on the date the document is received in person, by fax or by certified mail. The Contractor will be expected to respond and begin work within 5 working days of receipt of any subsequent Work

Document, or on the date specified within the Work Document. For renewed contracts, begin work 5 working day after receipt of all Work Document or as specified within the Work Document.

If the Contractor does not begin work by the end of the day specified in the Work Document, or if the assignment of work on the Work Document is not complete within the number of days stipulated on the Work Document, then the Contractor and the Department agree that the Department will assess the Contractor, per day, not as a penalty but as liquidated damages, 1% of the total Work Document amount or the amount shown in Subarticle 8-10.2 (Amount of Liquidated Damages), whichever is less.

The Engineer will issue Work Documents for locations that represent a minimum of one day's work; however, priority Work Documents may not necessarily represent one day's work. All work locations will be described with geographical or landmark reference points that will allow the Contractor to proceed immediately to the location with minimum delay. The Department will make every reasonable effort to plan work locations and develop work documents in systematic and concentrated regions so as to minimize the Contractor's travel requirements.

Upon completion of the assigned work, notify the Engineer. Certify that the work quantities and quality were accomplished in accordance with these specifications by signing and returning the Work Document to the Department. All work completed will be inspected to verify quantity and quality prior to approval of the Work Document.

Should inclement weather limit or stop the work, immediately notify the Engineer of work stoppage. The end date of a Work Document may be extended by the Engineer in case of inclement weather or other unforeseen circumstances, when timely notice is provided by the Contractor.

Schedule work in a manner that prevents delays, stoppages and rework.

SUBARTICLE 5-8.2 is expanded by the following:

The Contractor's superintendent shall be available for immediate person-to-person communications, 24 hours a day, 7 days a week, with the Engineer by a Contractor provided telephone number. The superintendent shall contact the Engineer before starting work each day to report activity and work locations.

SUBARTICLE 5-10.2 is expanded by the following:

Upon completion of work and before final payment is made, remove from the job site any surplus materials or waste and restore the job site area to conditions acceptable to the Engineer.

UTILITY WORK.
(REV 2-10-94) (7-15)

SUBARTICLE 7-11.5.3 is expanded by the following:

For this project, no utility work involving facilities owned by other agencies is anticipated.

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC –
CONTRACTOR’S RESPONSIBILITY FOR WORK.**
(REV. 04-10-14) (1-15)

Article 7-14 is deleted and the following substituted:

7-14 Contractor’s Responsibility for Work.

Until the Department’s acceptance of the work, take charge and custody of the work, and take every necessary precaution against injury or damage to the work by the action of the elements or from any other cause whatsoever, arising either from the execution or from the nonexecution of the work. Rebuild, repair, restore, and make good, without additional expense to the Department, all injury or damage to any portion of the work occasioned by any of the above causes before its completion and acceptance, except that in case of extensive or catastrophic damage, the Department may, at its discretion, reimburse the Contractor for the repair of such damage 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.

EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS.
(REV 4-25-02) (FA 7-17-02) (7-15)

SECTION 7 is expanded by the following:

7-26 Equal Employment Opportunity Requirements.

7-26.1 Equal Employment Opportunity Policy: Accept as the operating policy, the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their age, race, color, religion, national origin, sex, or disability and to promote the full realization of equal employment opportunity through a positive continuing program:

“It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their age, race, religion, color, national origin, sex, or disability. Such action must include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training.”

7-26.2 Equal Employment Opportunity Officer: Designate and make known to the Department's contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who must be capable of effectively administering and promoting an active Contractor program employment opportunity and who must be assigned adequate authority and responsibility to do so.

7-26.3 Dissemination of Policy: All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment opportunity policy and contractual responsibilities.

7-26.4 Recruitment: When advertising for employees, include in all advertisements for employees the notation "An Equal Opportunity Employer".

7-26.5 Personnel Actions: Establish and administer wages, working conditions, employee benefits, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination without regard to age, race, color, religion, national origin, sex, or disability.

Follow the following procedures:

(1) Conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

(2) Periodically evaluate the spread of wages paid with each classification to determine any evidence of discriminatory wage practices.

(3) Periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action must include all affected persons.

(4) Investigate all complaints of alleged discrimination made in connection with obligations under this Contract, attempt to resolve such complaints, and take appropriate corrective action. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action must include such other persons. Upon completion of each investigation inform every complainant of all of the avenues of appeal.

7-26.6 Subcontracting: Use the best efforts to ensure subcontractor compliance with their equal employment opportunity policy.

7-26.7 Records and Reports: Keep such records as are necessary to determine compliance with the equal employment opportunity obligations. The records kept will be designed to indicate the following:

(1) The number of minority and nonminority group members employed in each work classification on the project.

(2) The progress and efforts being made in cooperation with unions to increase minority group employment opportunities (applicable only to Contractors who rely in whole or in part on unions as a source of their work force).

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority group employees as deemed appropriate to comply with their Equal Employment Opportunity Policy.

(4) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority group representation among

their employees as deemed appropriate to comply with their Equal Employment Opportunity Policy.

All such records must be retained for a period of three years following completion of the contract work and be available at reasonable times and places for inspection by authorized representatives to the Department and the Federal Highway Administration.

Upon request, submit to the Department a report of the number of minority and nonminority group employees currently engaged in each work classification required by the Contract work.

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – E-VERIFY.
(REV 6-13-11) (FA 6-16-11) (7-15)**

SECTION 7 is expanded by the following new Article:

7-28 E-Verify.

The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the Contract and shall expressly require any subcontractors performing work or providing services pursuant to the Contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term.

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC –
SCRUTINIZED COMPANIES.
(REV 6-17-11) (7-15)**

SECTION 7 is expanded by the following new Article:

7-29 Scrutinized Companies.

For Contracts \$1,000,000 and greater, if the Department determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the Department shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the Department's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

**PROSECUTION AND PROGRESS – SUBLETTING OR ASSIGNING OF CONTRACTS.
(REV. 3-10-14) (7-14)**

ARTICLE 8-1 is deleted and the following substituted:

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 provide 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. 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.

Execute all agreements to sublet work in writing and include all pertinent provisions and requirements of the Contract. Upon request, furnish the Department with a copy of the subcontract. 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.

SUBARTICLE 8-3.2 (Page 82) is deleted.

SUBARTICLE 8-3.5 is deleted and the following substituted:

8-3.5 Preconstruction Conference: Immediately after executing the Contract but before the Contractor begins work, the Engineer will call a pre-work conference at a place the Engineer designates to go over the work aspects of the project. Attend this meeting, along with the Department and the various utility companies that will be involved with the road construction.

PROSECUTION AND PROGRESS - EQUIPMENT.

(REV 9-21-15) (9-15)

ARTICLE 8-4 is expanded by the addition of the following new Subarticle:

8-4.10 Equipment: Equip vehicles and mobile equipment used on the project with a minimum of one class 2 amber or white flashing light that meets the Society of Automotive Engineers recommended practice SAE J845 and SAE J1318. The Engineer may require a white flashing light meeting the above requirements when conditions reduce the effectiveness of amber light (i.e., at night under high intensity discharge lights such as sodium vapor).

Ensure all equipment safety devices recommended by the manufacturer are installed and properly maintained.

Park vehicles and equipment not in use or left on the right-of-way overnight as close as possible to the right-of-way line and always outside of the applicable clear zone. Conduct service and supply operations as close to the right-of-way line as possible. Do not park equipment in the median, regardless of the width of the median, unless movement from the work area is determined by the Engineer to be prohibitive.

SUBARTICLE 8-5 is expanded by the following:

All persons employed by the Contractor or Subcontractors working within the Department's right-of-way must have Tier 1 Illicit Discharge Detection and Elimination (IDDE) training. The computer based training is provided by video on the following web page: <http://cbt.dot.state.fl.us/ois/EnvironmentalManagementOffice/index.html>.

Provide a list of persons trained prior to submittal of the first invoice. Provide an updated list of new Contractor/Subcontractor employees annually thereafter.

ARTICLE 8-6 is expanded by the addition of the following new Subarticle:

8-6.5 Suspension of Contractor's Operations: Unless otherwise authorized or required by the Engineer, perform no work on Friday nights and Saturday nights. Perform all work between the hours of 10:00 PM to 6:00 AM, Sunday through Thursday. Night work shall be performed between the hours of 10:00 PM to 6:00 PM, Sunday through Thursday.

Contract time will be charged during these Suspension periods regardless of whether or not the Contractor's operations have been suspended. The Contractor is not entitled to any additional compensation for suspension of operations during such 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 compliance with Sections 102 and 104 during such periods.

SUBARTICLE 8-7.3.2 is deleted and the following substituted:

8-7.3.2 Contract Time Extensions: The Department may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The Department may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the Department to fulfill an obligation under the Contract results in delays to the controlling items of work, the Department will consider such delays as a basis for granting a time extension to the Contract.

Whenever the Engineer suspends the Contractor's operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to a controlling item of work due to such suspension. The Department will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor.

The Department does not include an allowance for delays caused by the effects of inclement weather or suspension of Contractor's operations as defined in 8-6.4, in establishing Contract Time. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a bimonthly or monthly basis. The Engineer will not require the Contractor to submit a request for additional time due to the effects of weather.

The Department will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil conditions or suspension of operations as defined in 8-6.4 that prevent the Contractor from productively performing controlling items of work resulting in:

(1) The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or

(2) The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

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

The Department 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 furnish 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 furnishes documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. No additional compensation will be paid for delays caused by delivery of custom manufactured equipment.

The Department will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

(1) Delays are the result of either utility work that was not detailed in the plans, or utility work that was detailed in the plans but was not accomplished in reasonably close accordance with the schedule included in the Contract Documents.

(2) Utility work actually affected progress toward completion of controlling work items.

(3) The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

As a condition precedent to an extension of Contract Time the Contractor must submit to the Engineer:

A preliminary request for an extension of Contract Time must be made 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.

ARTICLE 8-8 is deleted and the following substituted:

8-8 Contractor Non-Responsibility.

Section 337.16(2) of the Florida Statutes and Rule 14-22, Florida Administrative Code (FAC), establish certain requirements for Contractors bidding on construction Contracts less than or equal to \$250,000 or any maintenance Contracts, and authorize ineligibility to bid due to Contractor non-responsibility.

For maintenance Contracts, the Department will review and rate the performance of each Contractor using the Contractor Field Performance Report. The Contractor will receive written notification of the Field Performance Report and will be given an opportunity to resolve disputes concerning the rating.

SUBARTICLE 8-9.1 is deleted and the following substituted:

8-9.1 Determination of Default: The following acts or omissions constitute acts of default and, except as to subparagraphs (i and k), the Department will give notice, in writing, to the Contractor and his surety for any delay, neglect or default, if the Contractor:

- (a) fails to begin the work under the Contract within the time specified in the Notice to Proceed;
- (b) fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure prompt completion of the Contract;
- (c) 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;
- (d) 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;
- (e) 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;
- (f) allows any final judgment to stand against him unsatisfied for a period of ten calendar days;
- (g) makes an assignment for the benefit of creditors;
- (h) fails to comply with Contract requirements regarding minimum wage payments or EEO requirements;
- (i) 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
- (j) 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.
- (k) fails to comply with 3-9.
- (l) fails to provide all required insurance and to keep said insurance in force during the duration of the Contract.

For a notice based upon reasons stated in subparagraphs (a) through (h) and (j): if the Contractor, within a period of time specified by the Department 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 (b), (c), (d), (e), (f) or (h), commits a second or subsequent act of default for any reason covered by the same subparagraph (b), (c), (d), (e), (f) or (h) 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 (i), 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 (k), 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.

SUBARTICLE 8-9.3 is deleted and the following substituted:

8-9.3 Completion of Work by Department: Upon declaration of default, the Department will have full power to appropriate or use any or all suitable and acceptable materials and equipment on the site and may enter into an agreement with others to complete the work under the Contract, or may use other methods to complete the work in an acceptable

manner. The Department will charge all costs that the Department incurs because of the Contractor's default, including the costs of completing the work under the Contract, against the Contractor. If the Department incurs such costs in an amount that is less than the sum that would have been payable under the Contract had the defaulting Contractor completed the work then the Department will pay the difference to the defaulting 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 State the amount of the excess.

If, after the period of time specified by the Department 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.

MEASUREMENT AND PAYMENT – SCOPE OF PAYMENTS.

(REV. 12-31-14) (2-15)

SUBARTICLE 9-2.1 is expanded as follows:

Request payment for work completed and accepted by the Department by submitting an invoice. The invoice shall be based on the pay items and unit prices contained in the Contract and shall include the Contract Number, the Financial Project Number, the Invoice Number, the Invoice Date and the period that the invoice represents. If required by the Engineer photos of the completed work at each location shall be furnished with the Invoice. Submit the invoice no more often than once every 28 days to the Engineer in charge of the project. Upon receipt and approval, payment will be made less an amount retained or withheld per provisions included in the Contract.

SUBARTICLES 9-2.1.1 and 9-2.1.2 are deleted.

SUBARTICLE 9-3.2 is deleted.

SUBARTICLE 9-3.3.1 is deleted and the following substituted:

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. The term "substantial error" is defined as the smaller of (a) or (b) below:

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

SUBARTICLE 9-5.1 is deleted and the following substituted:

9-5.1 General: If the work extends over a period in excess of 45 calendar days, the Contractor may claim partial payment for work completed and accepted by the Department by submitting an invoice. The actual reimbursement to the contractor will be based on the percentage of the Lump Sum contract amount completed, and accepted by the Engineer in charge.

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.

An amount may be retained from a Contractor’s payment until final acceptance of materials or work at the end of a burn-in or establishment period. The amount retained will be determined in accordance with the following schedule:

Percentage Contract Amount Completed	Amount Retained
0 to 75	None
75 to 100	10 % of value of work completed exceeding 75% of Contract Amount.

The Engineer will make payments based upon invoices submitted by the Contractor in accordance with 9-2.1.

SUBARTICLE 9-5.5.2 is deleted.

ARTICLE 9-8 is deleted and the following substituted:

9-8 Acceptance and Final Payment.

If the Contractor fails to furnish all required Contract Documents as listed in (a) through (c) below within 90 days of the Contractor’s submittal of a final invoice, the Department may suspend the Contractor from bidding under the provisions of Florida Administrative Code 14-22.

Submit a final invoice in accordance with 9-2.1 for work completed and accepted by the Department. The Department will pay the estimate, less any sums that the Department may have

deducted or retained under the provisions of the Contract, provided the Contractor has met the requirements of (a) through (c) below.

a. The Contractor has performed the work and properly maintained the project, as specified in the contract documents.

b. 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, and that the contractor will commence any such arbitration claim or suit within 820 calendar days from and after the time all work is completed and accepted by the Department, and that failure to file a formal claim within this period constitutes acceptance of final payment) 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.

c. 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.

ARTICLE 9-9 is expanded by the following:

Section 215.422(5), Florida Statutes, requires the Department to include a statement of vendor (Contractor) rights. Contractors are hereby advised of the following:

Contractors providing goods and services to an agency should be aware of the following time frames: Upon receipt, an agency has five working days to inspect and approve the goods and services, unless the bid specifications, purchase order or Contract specifies otherwise. An agency has 20 days to deliver a request for payment (voucher) to the Department of Financial Services. The 20 days are measured from the latter of the date the invoice is received or the goods or services are received, inspected and approved, by the Department of Transportation.

If a payment is not made within 40 days, a separate interest penalty at the rate established pursuant to Section 55.03(1), Florida Statutes will be due and payable, in addition to the invoice amount, to the Contractor. The interest penalty provision applies after a 35 day time period to health care providers, as defined by rule. Interest penalties of less than one dollar will not be enforced unless the Contractor requests payment. Invoices which have to be returned to a Contractor because of Contractor preparation errors will result in a delay in the payment. The invoice payment requirements do not start until a properly completed invoice is provided to the Department.

A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for Contractors who may be experiencing problems in obtaining timely payment(s) from a state agency. The Vendor Ombudsman may be contacted by calling the Bureau of Accounting at (850) 413-5516.

CONSTRUCTION EQUIPMENT-GENERAL REQUIREMENTS.

(REV 1-28-15) (2-15)

SUBARTICLE 100-1 is expanded by the following:

Clearly and legibly identify the owner of all equipment on the Department's right-of-way.

MOBILIZATION.

(REV 7-29-13) (1-14)

SUBARTICLE 101-2.1 is deleted and the following substituted:

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 unit price for the item of Mobilization.

Payment will be made under the items specified in the Bid Price Proposal.

SUBARTICLE 101-2.2 is deleted and the following is substituted:

101-2.2 Partial Payments: When the proposal includes a separate pay item for Mobilization - Lump Sum, partial payment will be prorated based on the percentage of contract amount earned for work completed and accepted by the Department.

MAINTENANCE OF TRAFFIC.

(REV 10-28-14) (1-15)

SUBARTICLE 102-3.1 is deleted and the following substituted:

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

ARTICLE 102-11 is expanded by the following new Subarticles:

102-11.23 Necessary Maintenance Services (Straight Time): This item shall be used when using labor on Monday through Thursday. Time begins when the contractor's personnel starts performing MOT duties. This pay item does not include traveling to and from work sites. Time shall begin when the contractor or their personnel notifies the Engineer or their representative that set up is complete and they are ready to begin flagging operations and/or

maintenance of devices. The contractor or their personnel will notify the Engineer or their representative when straight time ends and set-up or take-down begins. The contractor will be required and compensated for providing only one person to maintain the devices, unless otherwise directed by the Engineer.

102-11.24 Necessary Maintenance Services (Over Time): This item shall be used when using labor on Fridays through Sunday and holidays. Time begins when the contractor personnel starts performing MOT duties. This pay item does not include traveling to and from work sites. Time shall begin when the contractor or their personnel notifies the Engineer or their representative that set up is complete and they are ready to begin flagging operations and/or maintenance of devices. The contractor or their personnel will notify the Engineer or their representative when over time ends and set-up or take-down begins. The contractor will be required and compensated for providing only one person to maintain the devices, unless otherwise directed by the Engineer.

102-11.25 Emergency Maintenance of Traffic: The contractor will be compensated for setting up and taking down the devices. The contractor will be compensated for one Maintenance of Traffic pay item per work document. This pay item will only be used when a work order is issued with a start date of less than 72 hours. Notification for work orders issued with notification of 72 hours or more before the start date will be considered incidental to the pay items on the work order, and no separate payment will be made therefore. Mobilization and all other cost incurred will be considered incidental to this pay item. No other pay items will be used.

102-11.26 Off Duty Law Enforcement Officer: The contractor will be compensated per hour the officer is at the work site in accordance with the work document and/or as requested by the Engineer or their representative. Travel time is not included.

102-11.27 Truck Mounted Attenuator: Payment will be made per day as stated in the work document or as directed by the Engineer or their representative. This pay item will be paid per day regardless of the number of locations work is performed at each site.

ARTICLE 102-12 is deleted.

ARTICLE 102-13 is deleted and the following substituted:

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.

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 unit price for the item of Mobilization.

When the proposal includes a separate pay item for Mobilization - Lump Sum, partial payment will be prorated based on the percentage of contract amount earned for work completed and accepted by the Department.

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 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 High Intensity Warning Lights: Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing high intensity flashing lights (Type B).

102-13.8 Channelizing Devices: Prices and payment will be full compensation for furnishing, installing, relocating, maintaining and removing the channelizing devices, including the costs associated with attached warning lights as required.

102-13.9 Barrier Wall (Temporary): Price and payment will be full compensation for furnishing, installing, maintaining, and removing the barrier. When called for, barrier wall (temporary) (relocate) will be full compensation for relocating the barrier.

102-13.10 Barrier Delineators: No separate payment will be made for barrier delineator installed on top of temporary barrier wall. The cost of furnishing, installing and maintaining the barrier delineators will be included in the cost of the temporary barrier wall.

102-13.11 Glare Screen (Temporary): 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.

102-13.12 Temporary Crash Cushion (Redirective/Gating): Price and payment will be full compensation for furnishing, installing, maintaining and subsequently removing such crash cushions. Payment for restoring damaged crash cushions will be 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. Additional MOT required for the repair of the crash cushion will be paid for under the appropriate MOT pay item.

102-13.13 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.

102-13.14 Arrow Board: Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing arrow boards.

102-13.15 Portable Changeable Message Sign: Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing portable changeable message signs.

102-13.16 Portable Regulatory Signs: Price and payment will be full compensation for furnishing, installing, relocating, maintaining and removing a completely functioning system as

described in these Specifications portable regulatory signs. Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing portable regulatory signs.

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.

102-13.17 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 insure 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/or MOT operations. Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing radar speed display unit.

102-13.18 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.

102-13.19 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.

102-13.20 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 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 may be substituted for work zone paint at no additional cost to the Department.

Payment for temporary RPMs used to supplement line markings will be paid for under temporary retroreflective pavement markers. Install these markers as detailed in the Design Standards.

102-13.22 Temporary Lane Separator: Price and payment will be full compensation for all work specified in this Section.

102-13.23 Necessary Maintenance Services (Straight Time): This pay item shall be used when using labor on Monday through Thursday. The contractor will be required and

compensated for providing only one person to maintain the devices, unless otherwise directed by the Engineer.

102-13.24 Necessary Maintenance Services (Over Time): This pay item shall be used when using labor on Fridays through Sunday and holidays. The contractor will be required and compensated for providing only one person to maintain the devices, unless otherwise directed by the Engineer.

102-13.25 Emergency Maintenance of Traffic: The contractor will be compensated for one Maintenance of Traffic pay item per work document. This pay will only be used when a work order is issued with a start date of less than 72 hours. This will be the only instance the Maintenance of Traffic (E102 1 2) pay item will be used.

102-13.26 Off Duty Law Enforcement Officer: The contractor will be compensated per hour as stipulated by the Engineer in the work document.

102-13.27 Truck Mounted Attenuator: All cost will be considered incidental to the pay item listed in the bid price proposal. Costs include operator.

102-13.28 When No Separate Item is Shown in the Proposal: When the proposal does not include a separate pay item for Maintenance of Traffic, all work and incidental costs specified as being covered under this Section will be included in the contract unit price for the work being performed and no separate payment will be made.

102-13.29 Partial Payment: When the proposal includes a separate pay item for Maintenance of Traffic - Lump Sum, partial payment will be prorated based on the percentage of contract amount earned for work completed and accepted by the Department.

102-13.30 Payment Items: Payment will be made under the items specified in the Bid Price Proposal.

APPENDICES

TECHNICAL SPECIAL PROVISIONS.

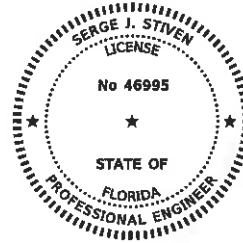
The following Technical Special Provisions are individually signed and sealed but are included as part of this Specifications Package.

Bridge Operation and Maintenance during Construction

TECHNICAL SPECIAL PROVISION
FOR

BRIDGE OPERATION AND MAINTENANCE DURING CONSTRUCTION

The official record of this Technical Special Provision is the electronic file signed and sealed under Rule 61G 15-23.003, F.A.C.



Digitally signed by Serge J Stiven
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Business Representative,
ou=TRANSYSTEMS
CORPORATION, cn=Serge J
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Prepared by: Serge Stiven, PE
P.E. Number: 46995
Date: September 30, 2015
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SECTION T465 - MOVABLE BRIDGES

T465-1 GENERAL

T465-1.1. Description

Perform the balance of the movable bridge spans in accordance with the Contract Documents and the requirements of this Technical Special Provision. The installation of the bicycle plates shall not interfere with the operation or balance of the movable spans at any time during the completion of the contract. In addition, all possible care shall be taken to insure that all span lock components are protected during the completion of the Contract.

T465-1.2. Standards

The following abbreviations will be used throughout the Contract Documents:

Florida Department of Transportation

FDOT

T465-1.3. Supervisory Personnel

Meet the requirements of Section 105, FDOT Standard Specifications for Road and Bridge Design, Latest Edition, and this Technical Special Provision herein.

T465-1.4. Existing Information

The dimensions and elevations shown are based on the Existing Bridge Plans and may not represent as-built conditions; Shop Drawings are required per FDOT Section 5, Standard Specifications for Road and Bridge Construction.

T465-1.5. Field Measurements and Surveys

Conduct field measurements and surveys to verify existing dimensions shown on the plans, prior to development of submittals. Identify field verified dimensions on submittals. Conduct field measurements and surveys as required to supplement information provided in the plans and as necessary to provide a complete and satisfactory properly fitting and operational installation.

T465-1.6. Coordination

A. Coordinate testing of the bridge drive and control systems prior to turning the bridge over for construction.

B. Coordination of Submittals

1. Review Shop Drawings, Product Data, and Samples for compliance with Contract Documents and for coordination with performance of this work under this Technical Special Provision.

2. Check field dimensions, clearances, and relationship to available space and anchors.

C. Coordination of Substitutions and Modifications

1. Review proposals and requests from subcontractors.

2. Verify compliance with Contract Documents and for compatibility with Work and Products of other sections.

3. Submit with recommendation for action.

T465-1.7. Observation of Work:

Meet the requirements set forth in FDOT Section 105, Standard Specifications for Road and Bridge Construction.

T465-1.8. Documentation of Tests:

Meet the requirements set forth in FDOT Section 105, Standard Specifications for Road and Bridge Construction.

T465-2 COUNTERWEIGHTS AND BRIDGE BALANCING

T465-2.1. Description

T465-2.1.1. Terminology: The terms “counterweight tub girders”, “tub girders”, and “counterweight girders” are used interchangeably.

The terms “tie down assembly”, “tie-down device”, “tie down”, “tie-down”, and “hold down assembly” are used interchangeably.

The terms “counterweight adjusting blocks”, “counterweight balancing blocks”, “counterweight blocks”, “adjusting blocks”, and “balance blocks” are used interchangeably.

The terms “balance state” and “balance condition” are used interchangeably.

T465-2.1.2. Requirements for Balance States: Properly balance the bridge for all angles of operation. Consider the properly balanced condition for the bascule leafs as follows:

A. That each bascule leaf is unbalanced toward the channel (tip heavy) by an equivalent force of two (2) kips minimum at the tip of the leaf when the leaf is down. Ensure that the maximum unbalanced force is four (4) kips at the tip of the leaf when the leaf is in the down (lowered) position.

B. The center of gravity is forward (leaf heavy) of the trunnion and is located at an angle (alpha) 20 degrees to 50 degrees above a horizontal line passing through the centerline of trunnion with the leaf in the down position. The alpha angle is defined as the angle of elevation of the center of gravity of the leaf above (minus being below) the horizontal axis through the centerline of rotation of the leaf.

Required Interim Balance State: During the course of construction and for conditions where the leaf is not secured with tie-down devices, the maximum permitted imbalance is indicated in Paragraph A (above). The Engineer may consider an imbalance outside this range acceptable for specific operations. For such operations, submit detailed request along with calculations completed in accordance with all applicable standards and Specifications to the Engineer for review and approval.

T465-2.1.3. General Scope of Work for Maintaining Balance:

The scope of work for maintaining balance is as follows:

- A. General: The work specified in this Section is required for each leaf of the bascule span; items are not necessarily listed in the order of occurrence.
- B. If no existing strain gauge assemblies are installed, furnish and install new span balancing test gauge assemblies.
- C. Perform initial strain gauge testing to determine initial balance condition of the bridge.
- D. Submit for review and approval the initial balance test report.
- E. Develop and submit Leaf Balancing and Stability Plan for balance monitoring throughout construction, due to all required leaf weight changes both permanent and temporary and any permanent or temporary weight that is required to maintain a properly balanced condition as defined in T465-2.1.2.
- F. Furnish and place adjusting blocks as required for achieving properly balanced condition.
- G. Achieve and maintain acceptable interim balance states for the bascule leafs throughout the course of the work.
- H. Achieve an acceptable final balance state for the bascule leafs upon completion of the work.

- I. Field survey and document final dimensional configuration of counterweight adjusting blocks.
- J. Perform final strain gauge balance testing to determine final balance condition of the bridge with bicycle plate installed and new blocks installed.
- K. Submit for review and approval the Initial and Final Strain Gauge Balance Testing Reports.

T465-2.1.4. Work Restriction and Requirements:

- A. Meet the requirements of set forth in Sections 7 and 103, FDOT Standard Specifications for Road and Bridge Construction.
- B. Maintain a properly balanced leaf condition at all times, the exception being those periods where tie-down devices are erected and fully functional.
- C. All balance testing and balance calculations must be performed by a Professional Engineer registered in the State of Florida who shall have successfully previously conducted strain gauge testing and/or balance analysis on a minimum of five bascule bridges.

T465-2.1.5. Quality Assurance: Balance Computations: Provide signed and sealed balance computations and shop drawings.

T465-2.1.6. Strain Gauge Testing Requirements:

Mount two strain gauges on each rack pinion shaft between the coupling and the inboard bearing. Mount the gauges back to back (i.e. spaced 180 degrees circumferentially on the shaft) and wire in a Wheatstone bridge configuration so as to measure torsional strain only. Connect the gauges from the two (2) pinion shafts to a recording device capable of providing a permanent record of the strain in the shaft versus the shaft angle. Record the shaft angle using either an event marker mounted on an appropriate shaft or an angle transducer mounted to the movable structure. The output for the span angle shall be recorded simultaneously and on the same device with the imbalance strain. The strain recording device shall be capable of displaying the strain for each shaft separately and also providing the additive total strain for both shafts at any given point.

The strain recording device shall be capable of recording strain for each shaft independently. The strain recording device shall also be capable of providing output sufficient to obtain the total strain for both shafts at any given point. Each leaf shall be tested through at least three complete cycles and a permanent record of each test shall be maintained. All testing is to be conducted with no extraneous materials or water on the movable span and the sustained wind speed shall be less than 10 mph.

T465-2.1.7. Submittals:

A. As a minimum, submit the following for review and approval: Shop drawings for counterweight adjusting blocks; provide weight of block; and product data for coal tar epoxy coating for cast-iron blocks.

B. Span Balancing (Initial and Final): Submit description of proposed equipment to be utilized, proposed balancing procedures, and proposed reporting forms.

C. Leaf Balancing and Stability Plan:

1. Prepare and submit a Leaf Balancing and Stability Plan for each leaf.
2. Outline proposed leaf stability for the duration of the project.
3. Specifically address each element of the work associated with the leaf and the machinery of the leaf that will affect the balance and stability of the leaf and the proposed measures that will be taken to ensure balanced and stable leaf conditions throughout the duration of the Work.
4. Submit supporting shop drawings and balance computations.
5. Balance State Report:

a. Submit for review and approval final balance state after all work on the leaf is complete but prior to final balance testing.

b. As a minimum, the balance state reports must contain the following: introduction, test procedure and list of equipment, method of analyzing recorded data, presentation of results, conclusions, calculations, strain data from initial and final tests, graphical representation of span balance versus opening angle, and shop and erection drawings for placement of counterweight blocks: in addition to conventional drawings, provide isometric showing configuration of blocks to be utilized to achieve an acceptable final balance state.

c. The balance state report must be Signed and Sealed by a Professional Engineer registered in the State of Florida who meets the experience requirements set forth above in Subsection T465-2.1.4.(C).

T465-2.1.8. Counterweight Details:

The configuration of adjusting blocks depicted in the Plans is intended as a guide to establish the final dimensional configuration of the counterweight.

T465-2.2. Materials

The contractor shall provide counterweight blocks as necessary to produce the specified balance condition (during construction and final balance).

Fabricate counterweight blocks only after approval by the Engineer of the appropriate balance computations as specified elsewhere in this Technical Special Provision.

Place and arrange blocks throughout the course of the work as required for achieving or maintaining acceptable balance states.

T465-2.3. Construction Requirements

T465-2.3.1. Initial Balance State: Establish the initial balance state of each leaf before the start of any work done under this contract by performing an initial strain gauge testing. Submit initial balance test report for review and approval.

If appropriate, revise Leaf Balancing and Stability Plan and submit for approval and for the record.

T465-2.3.2. Maintenance Balance During the Course of Construction: Maintain balance in accordance with the Leaf Balancing and Stability Plan.

Verify the condition of balance at time intervals appropriate with the work being performed in order to ensure a Properly Balanced Condition at all times.

T465-2.3.3. Final Balancing: Complete all work on the leaf, including application of protective coatings.

Perform the final balancing of the leaf by performing a final strain gauge testing; achieve an acceptable final balance state.

Retest as needed after making final adjustments.

Submit signed and sealed Final Balance Report and arrangement of adjusting blocks; submit a Final Balance Report a minimum of seven (7) days after all adjustments have been made. The final balance report shall include the results of the final strain gauge testing after all adjustments have been made.

T465-3 MOVABLE BRIDGE FUNCTIONAL CHECKOUT

T465-3.1. General Requirements

Design and perform functional acceptance testing of the movable bridge operation as defined herein, to determine compliance with the requirements for construction, safety, maintenance, and operation of the facility as required in the Contract Documents. Include in the functional acceptance tests verification of all functions related to leaf operation, maintenance, and safety whether specifically defined herein or required in the Contract.

Collect full documentation of the functional acceptance test requirements and provide in booklet form.

Submittals: Detail and submit in shop drawing format for approval by the Engineer, test procedures for each specific test to be performed and the criteria for determining acceptance and passing for each test.

T465-3.2. Material Requirements

Functional Acceptance Test Books: Integrate and assemble information required for Functional Acceptance Test into a book (approximately 9 by 12 inches). Neatly label the book with a descriptive title, the name of the project, the location, year of the test, the Owner, the Contractor and the Engineer. Provide black on white background, easily legible, copies of drawings, figures, and data. Bind the information along with each instruction (test procedure) section between rigid plastic or cloth binding covers. Submit four bound copies of the Functional Acceptance Test Books for review to the Engineer.

T465-3.3. Construction Requirements

T465-3.3.1. General:

A. Functional Acceptance Tests consists of the following:

1. Preliminary Checkout Test
2. Functional Tests of the movable bridge operation

B. Engineer Notification: Provide adequate notice (five working days minimum) prior to all tests so that the Engineer can witness and accept the method and result of the testing.

C. Field Tests: Arrange for and provide all necessary field tests, as indicated herein and as directed by the Engineer, to demonstrate that the entire modified or reworked area is in proper working order and is in accordance with the approved Plans and Special Provisions.

T465-3.3.2. Tests: The Functional Acceptance Test: Present specific, step by step procedures to demonstrate and provide data for evaluation of each function of the movable bridge. Include for each test quantitative measurements (i.e., watts, pressure, etc.), the method of their measurement, and the method of recording each measurement.

Acceptance Criteria: Present Functional Acceptance Test criteria that are concise and void of ambiguities. State specific performance of each component or function with regards to the requirements of the design and each unique condition of performance. Include all normal and emergency operating conditions as defined in the Contract Documents and Design Specifications and all maintenance modes of operation.

T465-3.3.3. Preliminary Checkout:

A. Prior to scheduling the Functional Acceptance Tests, perform preliminary checks and make adjustments on the new work, such that the system is in general working order. Coordinate this work with the maintenance of traffic plan such that any failure of any portion of the system being tested would not interfere with the scheduled use of the bridge.

B. Perform all drive system tests during periods in which the span (or leaf) being tested is normally closed (i.e., closed to marine traffic). Provide backup means and methods for lowering the leaf(s) if vehicular traffic is scheduled to use the bridge.

T465-3.3.4. Functional Tests: Upon approval of the Engineer to proceed, conduct the Functional Acceptance Tests. The tests shall include the following Functional Tests and Acceptance Criteria:

T465-3.3.4.1. Control Functions (testing both manual and automatic operations):

A. Bridge Sequence: Demonstrate the correct operation of the bridge as described in these Technical Special Provisions and in the drawings.

B. Demonstrate EMERGENCY STOP of each leaf at or during each phase of opening and closing the bridge (phases include ramping up or down, full speed, and creep speed).

C. Interlocks:

1. Simulate the operation of each limit switch to demonstrate correct operation and interlocking of systems.

2. Demonstrate BYPASS operation for each failure for each required bypass.

3. Simulate each failure for which there is an alarm message to demonstrate correct message displays.

4. Provide comprehensive testing of bridge interlocks to demonstrate that unsafe or out of sequence operations are prevented.

D. Position Indicator: Observe readings with bridge closed and full open to assure correct readings.

E. Navigation Lights:

1. Demonstrate that all lamps are working.

2. Demonstrate the operation of the transfer relays and indicators for each light (not applicable for LED lights).

3. Demonstrate proper change of channel lights from red to green.

4. Demonstrate Battery Backup functionality by simulating a power outage.

F. Traffic Gates, Sidewalk Gates, and Traffic Barriers:

1. Demonstrate proper operation of each gate arm.

2. Demonstrate opening or closing times. Time should not exceed 15 seconds in either direction.

3. Demonstrate door switch safety interlocks and manual operations using hand

crank.

G. Span Locks:

1. Operate each span lock through one complete cycle.

2. Operate each lock with hand crank or manual pump for one complete cycle.

3. Record time of operation, stroke, and maximum operating and relief pressures for each lock bar and power unit.

4. Verify lock bar to guides and receiver clearances and parallelism.

5. Verify that there is no movement of the leafs caused by the operation of the span locks, when the locks are pulled and driven with the bridge fully seated.

6. Demonstrate hydraulic power unit fluid level and containment in all span positions.

H. Bridge Machinery:

1. Operate each leaf through six continuous cycles at full speed, three cycles for each electric motor. During this operation inspect the machinery for proper function. Correct any abnormal conditions to the satisfaction of the Engineer, and then retest in entirety.

I. Span Brakes Control:

1. During the span raise and lower operations, verify and record the normal automatic set and release operation of the brakes.
2. Demonstrate brake hand release, by releasing each brake, one at a time, and monitor the hand release indication through the PLC.
3. With the Span in non-permissive operation mode (span locks driven, drives not energized), manually activate the brake set and release switches and monitor their set/released indication at the control desk.

T465-4. METHOD OF MEASUREMENT

A. Counterweight Adjustment: The work of furnishing, installing, and adjusting the Counterweights and performing the Leaf Balancing as described in this Section and shown in the Plans will be measured under the following items:

1. Counterweights including Counterweight Shop Drawings by each Counterweight assembly and balance calculations. One Counterweight assembly includes all work associated with one Bascule Leaf.
2. All labor and materials required to perform strain gauge testing and to assist the Department in strain gauge testing, and to adjust the balance of the Bascule Leafs.

B. Movable Bridge Functional Checkout: The work of performing preliminary checkout, functional testing, simulated operational testing, and operational testing will not be measured separately.

T465-5. BASIS OF PAYMENT

Price and payment will be full compensation for all work specified in this Technical Special Provision, including furnishing and installing all equipment and materials.

Payment will be made under:

Payment Item No. 465- 3- 17	Movable Bridge Counterweight, F&I, Balance Blocks.....	Each
Payment Item No. 465- 3- 50	Movable Bridge Counterweight Adjust.....	Each
Payment Item No. 465- 71- 3	Movable Bridge Functional Checkout, Phase C.....	LS

EXHIBITS

A - G