

The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

Please Let Us Know If You Plan To Bid

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

CITY OF
TAMPA, FLORIDA

NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS
PROPOSAL, BID BOND, FORM OF NOTICE OF AWARD,
AGREEMENT, PERFORMANCE BOND AND
SPECIFICATIONS

FOR

Contract 14-C-00033

TAMPA RIVERWALK- DOYLE CARLTON DRIVE SEGMENT AND SEAWALL REPAIR

Grant No. DTFH61-13-G-00001

FDOT Project ID 430752-1

City of Tampa
CONTRACT ADMINISTRATION DEPARTMENT
TAMPA MUNICIPAL OFFICE BUILDING
306 E. JACKSON STREET - 4TH FLOOR NORTH
TAMPA, FLORIDA 33602

NOVEMBER 2014

CITY OF TAMPA
CONTRACT ADMINISTRATION DEPARTMENT
306 E. Jackson Street 280A4N
Tampa, FL 33602

BID NOTICE MEMO

Bids will be received no later than 1:30 p.m. on the indicated Date(s) for the following Project(s):

CONTRACT NO.: 14-C-00033; Tampa Riverwalk-Doyle Carlton Drive Segment and Seawall Repair

BID DATE: December 9, 2014 **ESTIMATE:** \$4,350,000 **SCOPE:** The project comprises furnishing all labor, materials and equipment to construct, on land, approximately 2,050 LF of varying width concrete walkway with a portion cantilevered over water, providing an ADA compatible walkway for bikes and pedestrians, connecting the Riverwalk from the Straz Center to Water Works Park, including such features as benches, planters, shade structures, railing, public art, decorative lighting, landscaping and irrigation, seawall repair, with all associated work required for a complete project in accordance with the Contract Documents.

PRE-BID CONFERENCE: Tuesday, November 18, 2014, 2:00 p.m. Attendance is not mandatory, but recommended.

Bids will be opened in the 4th Floor Conference Room, Tampa Municipal Office Building, 306 E. Jackson Street, Tampa, Florida 33602. Pre-Bid Conference is held at the same location unless otherwise indicated. Plans and Specifications and Addenda for this work may be examined at, and downloaded from, www.demandstar.com. Backup files are available at <http://www.tampagov.net/contract-administration/programs/construction-project-bidding>. Subcontracting opportunities may exist for City certified Small Local Business Enterprises (SLBEs). A copy of the current SLBE directory may be obtained at www.Tampagov.net. Phone (813) 274-8456 for assistance. **Email Technical Questions to:** contractadministration@tampagov.net.

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NOTICE TO BIDDERS
CITY OF TAMPA, FLORIDA
Contract 14-C-00033; TAMPA RIVERWALK DOYLE CARLTON DRIVE AND SEAWALL REPAIR

Sealed Proposals will be received by the City of Tampa no later than 1:30 P.M. December 09, 2014, in the 4th Floor Conference Room, Tampa Municipal Office Building, 306 E. Jackson Street, Tampa, Florida, there to be publicly opened and read aloud.

The proposed work is to include, but not be limited to, furnishing all labor, materials and equipment to construct, on land, approximately 2,050 LF of varying width concrete walkway with a portion cantilevered over water, providing an ADA compatible walkway for bikes and pedestrians, connecting the Riverwalk from the Straz Center to Water Works Park, including such features as benches, planters, shade structures, railing, public art, decorative lighting, landscaping and irrigation, seawall repair, with all associated work required for a complete project in accordance with the Contract Documents.

A contractor must be pre-qualified in accordance with Rule Chapter 14-22 on the date of the Bid Opening or provide sufficient evidence of qualifications within ten (10) days thereof. All bidders must provide Certification of Current Capacity and Status of Contracts on Hand on the day of Bid Opening.

The Instructions to Bidders, Proposal, Form of Bid Bond, Agreement, Form of Public Construction Bond, Specifications, Plans and other Contract Documents may be downloaded from the website at:
http://www.tampagov.net/dept_contract_administration/programs_and_services/construction_project_bidding/index.asp.
One set may be available for reference at the office of the Contract Administration Department, Municipal Office Building, Fourth Floor North, City Hall Plaza, Tampa, Florida 33602.

Each Proposal must be submitted on the Proposal form included in the Specifications and must be accompanied by a certified check or cashier's check on a solvent bank or trust company in compliance with Section 255.051, Florida Statutes, made payable to the City of Tampa, in an amount of not less than five per cent of the total bid, or a Bid Bond, of like amount, on the form set forth in the Contract Documents, as a guarantee that, if the Proposal is accepted, the Bidder will execute the Proposed Contract and furnish a Public Construction Bond within twenty (20) days after receipt of Notice of Award of Contract.

The City of Tampa reserves the right to reject any or all Bids and to waive any informalities in the Bid and/or Bid Bond. Acceptance or rejection of Proposals will be made as soon as practicable after the Proposals are received, but the City reserves the right to hold Proposals for ninety (90) days from the date of Opening.

Bid Protest Procedures: Unless subsequently indicated otherwise, in a revised posting on the Department's web page for Construction Project Bidding, the City of Tampa intends to award the referenced project to the lowest bidder listed in the tabulation posted on or about the date of Bid Opening. A bidder aggrieved by this decision may file a protest not later than 4:30 P.M., five (5) business days from the first posting thereof, pursuant to City of Tampa Code Chapter 2, Article V, Division 3, Section 2-282, Procurement Protest Procedures. Protests not conforming therewith shall not be reviewed.

Communication with City Staff

Pursuant to City of Tampa Ordinance 2010-92, during the solicitation period, including any protest and/or appeal, NO CONTACT initiated by bidders or responders with City officers or employees, other than the individuals specified below is permitted:

Director of Contract Administration, David Vaughn

Contracts Management Supervisor, Jim Greiner

Contract Officer, Jody Gray

The City's Legal Department staff

The City's Contract Administration Department staff.

Technical Questions and Requests For Information should be directed to the Department via
ContractAdministration@tampagov.net

The project is to be financed in part by a Grant from the Federal Highway Administration. Prospective bidders are reminded of the applicability of the Federal Labor Standards and the minimum wage determination contained herein. Neither the United States nor any of its department, agencies, or employees will be a party to this invitation for Bids or any resulting contract. To be eligible to execute a contract, bidders will be required to comply with Federal requirements as follows:

NOTICE TO BIDDERS
CITY OF TAMPA, FLORIDA

Project 14-C-00033; TAMPA RIVERWALK DOYLE CARLTON DRIVE AND SEAWALL REPAIRS

1. Bidders must comply with the President's Executive Order No. 11246 and 11375, which prohibit discrimination in employment regarding race, creed, color, sex, or national origin.
2. Bidders must comply with Title VI of the Civil Rights Act of 1964, the Anti-Kickback Act, and the Contract Work Hours Standard Act, as well as Section 3, HUD Act of 1968.
3. Bidders must certify that they do not and will not maintain or provide for their employer any facilities that are segregated on a basis of race, color, creed, or national origin.
4. Bidders must be prepared to submit an Equal Employment Opportunity (EEO) plan at a pre-award conference. The plan must include bidding opportunities offered by the Bidder to minority subcontractors, and those business located in the project area (City of Tampa).

On October 13, 1972, the President issued Executive Order 11246 emphasizing the government's commitment to the promotion of minority business enterprise. Accordingly, the United States is firmly committed to the utilization of available resources to support this important program and is most interested in realizing minority participation of the subject.

Achieving equal employment opportunity compliance is required through Executive Order 11246. We cannot emphasize too strongly that minority subcontractors be extended subcontractors bidding opportunities as but one step in your affirmative action policy.

Due to the importance of this Contract, an EEO Conference may be conducted prior to the award of the Contract. It is suggested that the responsive Bidder confirm the minority subcontractors he contacted for bids or quotations in his EEO plan submitted at the conference.

"A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, 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, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list." Refer to Section 287.133 Florida Statutes.

In accordance with the City of Tampa's Equal Business Opportunity Ordinance, a Goal may have been established for subcontracting with Small Local Business Enterprises, SLBEs, certified by the City. Links to further information and a list of SLBEs are on the Department's Construction Project Bidding Web page. A link to the current complete directory of SLBEs is on the Minority Business Development Office Website.

Bob Buckhorn, Mayor
CITY OF TAMPA, FLORIDA

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.01 GENERAL:

The proposed work is the Tampa Riverwalk Doyle Carlton Drive and Seawall Repair in the City of Tampa, as required for a complete project, as shown on the plans and detailed in the specifications. The work is located on land owned or controlled by the City of Tampa.

I-1.02 FORM PREPARATION AND PRESENTATION OF PROPOSALS: Replace the second sentence with the following: Submission of the entire specification book is not required.

I-1.03 ADDENDA – Section I-2.03 is replaced with the following: No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation must be in writing, addressed to the City of Tampa, Contract Administration Department, 306 E. Jackson St., 4th Floor, Tampa, Florida 33602 and then emailed to ContractAdministration@tampagov.net. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of the Proposals. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be posted on DemandStar.Com and on the Department's web page, with notice given to all prospective bidders at the respective fax numbers or e-mail addresses furnished, for such purposes. Failure of any Bidder to receive any such addenda shall not relieve said Bidder from any obligation under his Proposal as submitted. All addenda so issued shall become part of the Contract Documents.

I-1.04 SIGNATURE OF BIDDERS: Section I-2.07 is replaced with the following:

Proposals must be signed in ink by the Bidder with signature in full. When firm is a Bidder, the Proposal shall be signed in the name of the firm by one or more partners. When a corporation is a bidder the officer signing shall set out the corporate name in full beneath which he shall sign his name and give the title of his office. The Proposal shall also bear the seal of the corporation attested by its secretary.

If the bidder referred to in Section I-2.07 is a corporation, it must submit; upon request, a copy of its filed Articles of Incorporation. In addition, if the bidder was incorporated in another state, it must establish that it is authorized to do business in the State of Florida. If the bidder is using a fictitious name, it must submit upon request, proof of registration of such name with the Clerk of the Circuit Court of the Country where its principal place of business is. Failure to submit what is required is grounds to reject the bid of that bidder.

I-1.05 TIME FOR COMPLETION:

The work shall be arranged to be completed in accordance with a progress schedule approved by the Construction Engineer.

The time for completion of this project, referred in Article 4.01 of the Agreement, shall be 365 consecutive calendar days. The period for performance shall start from the date indicated in the Notice To Proceed.

I-1.06 LIQUIDATED DAMAGES:

The amount of liquidated damages, referred to in Article 4.06 of the Agreement, for completion of this project shall be \$500.00 per calendar day.

I-1.07 BASIS OF AWARD OF CONTRACT:

The basis of award referred to in Item I-2.11 of Instructions to Bidders shall be the greatest amount of work, which can be accomplished within the funds available as budgeted. The award may be made on the basis of the total bid, base bid, alternates(s) if any, unit bids if any, or any combination thereof deemed to be in the best interest of the City.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

Unless all bids are rejected, the award will be made within 90 days after opening proposals.

I-1.08 GROUND BREAKING CEREMONY:

Arrangement may be made by the City in coordination with the Contractor, for construction to commence with a Ground Breaking Ceremony. Details will be discussed at the pre-construction conference.

I-1.09 INSURANCE:

The insurance required for this project shall be as indicated on Pages beginning with INS-1. Before commencing work, the Contractor shall provide the evidence of the insurance required on a Certificate of Insurance accompanied by evidence of authority to bind the insurance company or companies such as agents license, power of attorney, or letter of authority.

I-1.10 EQUAL BUSINESS OPPORTUNITY PROGRAM:

The State's Disadvantaged Business Enterprises applicable rules and regulations are by reference made a part hereof and bidders must comply therewith. The overall DBE program goal is 9.91%, which the FDOT believes may be achieved entirely through race neutral means. The City supports the utilization of small and disadvantaged businesses on construction projects, and encourages bidders to make all reasonable efforts to obtain participation of these businesses on this project.

I-1.11 BID SECURITY:

Surety companies shall have a rating of not less than B+ Class VI as evaluated in the most recently circulated Best Key rating Guide Property-Liability.

I-1.12 PUBLIC CONSTRUCTION BOND:

The Bidder who is awarded the Contract will be required to furnish a Public Construction Bond upon the forms provided herein, each equal to 100 percent of the Contract price, such Bonds to be issued and executed by (a) surety company(ies) acceptable to the City of Tampa and licensed to underwrite contracts in the State of Florida.

I-1.13 AGREEMENT

Section 2 – Powers of the City's Representatives

Add the following:

Article 2.05 CITY'S TERMINATION FOR CONVENIENCE:

The City may, at any time, terminate the Contract in whole or in part for the City's convenience and without cause. Termination by the City under this Paragraph shall be by a notice of termination delivered to the Contractor, specify the extent of termination and the effective date.

Upon receipt of a notice of termination, the Contractor shall immediately, in accordance with instructions from the City, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph:

- (a) cease operations as specified in the notice;
- (b) place no further orders and enter into no further subcontracts for materials, labor, services or facilities except as necessary to complete continued portions of the Contract;
- (c) terminate all subcontracts and orders to the extent they relate to the Work terminated;
- (d) proceed to complete the performance of Work not terminated; and
- (e) take actions that may be necessary, or that the City may direct, for the protection and preservation of the terminated Work.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

The amount to be paid to the Contractor by the City because of the termination shall consist of:

- (a) for costs related to work performed on the terminated portion of the Work prior to the effective date including termination costs relative to subcontracts that are properly chargeable to the terminated portion of the Work.
- (b) the reasonable costs of settlement of the Work terminated, including accounting, legal, clerical and other expenses reasonable necessary for the preparation of termination settlement proposals and supporting data; additional costs of termination and settlement of subcontracts excluding amounts of such settlements; and storage, transportation, and other costs incurred which are reasonably necessary for the preservation, protection or disposition of the terminated Work; and
- (c) a fair and reasonable profit on the completed Work unless the Contractor would have sustained a loss on the entire Contract had it been completed.

Allowance shall be made for payments previously made to the Contractor for the terminated portion of the Work, and claims which the City has against the Contractor under the Contract, and for the value of materials supplies, equipment or other items that are part of the costs of the Work to be disposed of by the Contractor.

I-1.14 Section 5 – Subcontractors and Assignments, add the following Article 5.03 Federal Requirements:
The Contractor shall include the FHWA Form 1273 - Required Contract Provisions Federal-Aid Construction Contracts verbatim in every subcontract.

Section 5 – Subcontracts and Assignments, Article 5.01, Page A-7, Last Paragraph:
Change "...twenty-five (25) percent..." to fifty-one (51) percent..."

Section 10-Payments
Article 10.05 Partial Payments, 1st Paragraph, 1st Sentence:

Change "...fair value of the work done, and may apply for..." to "...fair value of the work done, and shall apply for..."

Section 12 – Labor Standards, add Article 12.06 Job Site Posters: The Contractor must display all required USDOL posters at the jobsite.

I-1.15 Contractors must utilize the U.S. Department of Homeland Security's E-Verify Systems to verify the employment eligibility of all persons employed during the term of the contract to perform employment duties within the State of Florida and all persons, including subcontractors, assigned by the contractor to perform work pursuant to the contract.

I-1.16 GENERAL PROVISIONS; G-2.02 Copies Furnished to Contractor: Replace the first paragraph with the following:

The Contractor shall acquire for its use copies of the plans and specifications as needed. The documents may be downloaded from the City's web site, at
http://www.tampagov.net/dept_contract_administration/programs_and_services/construction_project_bidding/index.asp

I-1.17 PAYMENT DISPUTE RESOLUTION

Any dispute pertaining to pay requests must be presented to the City pursuant to Executive Order 2003-1.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.18 SCRUTINIZED COMPANIES.

For Contracts \$1,000,000 and greater, if the City 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 City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City'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.

I-1.19 FLORIDA'S PUBLIC RECORDS LAW

4.33.3 The City of Tampa is a public agency subject to Chapter 119, Florida Statutes. In accordance with Florida Statutes, 119.0701, if applicable, Contractor shall comply with Florida's Public Records Law. Specifically, the Contractor shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service;
2. Provide the public with access to such public records on the same terms and conditions that the City would provide the records and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;
3. Ensure that public records that are exempt or that are confidential and exempt from public record requirements are not disclosed except as authorized by law;
4. Meet all requirements for retaining public records and transfer to the City, at no cost, all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the agency.

4.33.4 The failure of Contractor to comply with the provisions set forth in this Article shall constitute a Default and Breach of this award and the City shall enforce the Default in accordance with the provisions set forth in the DEFAULT/RE-AWARD section of this document.

I-1.20 WAGE RATES

Applicable prevailing wage rate information begins with page WR-1.

I-1.21 INSTRUCTION TO BIDDERS:

I-2.05 Add the following sentence: "Pursuant to Section 2-522 of the City of Tampa Code, the contracting party acknowledge that if the contracting party fails to comply with the City of Tampa's Code of Ethics, such a failure shall render this Agreement voidable by the City and subject the contracting party to debarment from any future City contracts or agreements."

I.1.22 WARRANTIES AND GUARANTEES

All warranties and guarantees, are expressly excluded from this Contract.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.23 CONTRACT EXCLUSIONS:

Contractor purchased equipment for State or local ownership is expressly excluded from this Contract.

Local hiring preference is expressly excluded from this Contract.

Owner force account contracting is expressly excluded from this Contract.

Public agencies in competition with the private sector are expressly excluded from this Contract.

Publicly-owned equipment is expressly excluded from this Contract.

Salvage credits are expressly excluded from this Contract.

State or local preferences are expressly excluded from this Contract.

I-1.24 INSTRUCTION TO BIDDERS:

I-2.05 LAWS AND REGULATIONS

Replace with the following:

The Bidder who is awarded the Contract must comply with and all Federal laws, all laws of the State of Florida, and all applicable Ordinances of the City of Tampa respecting labor and compensation and with all other statutes, ordinances, rules and regulations applicable and having the force of law.

I-1.25 STANDARIZED CHANGED CONDITIONS

23 CFR 635.109 is included by reference and is applicable where not already covered by the Agreement.

INSTRUCTIONS TO BIDDERS

SECTION 2 GENERAL INSTRUCTIONS

I-2.01 BIDDER'S RESPONSIBILITY

Before submitting Proposals, Bidders shall carefully examine the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and make all necessary investigations to inform themselves thoroughly as to the facilities necessary for delivering, placing and operating the necessary construction equipment, and for delivering and handling materials at the site, and inform themselves thoroughly as to all difficulties involved in the completion of all the work in accordance with the Contract Documents.

Bidders must examine the Plans, Specifications, and other Contract Documents and shall exercise their own judgment as to the nature and amount of the whole of the work to be done, and for the bid prices must assume all risk of variance, by whomsoever made, in any computation or statement of amounts or quantities necessary to complete the work in strict compliance with the Contract Documents.

Elevations of the ground are shown on the Plans and are believed to be reasonably correct, but are not guaranteed to be absolutely so and are presented only as an approximation. Bidders shall satisfy themselves as to the correctness of all elevations.

The City may have acquired, for its own use, certain information relating to the character of materials, earth formations, probable profiles of the ground, conditions below ground, and water surfaces to be encountered at the site of the proposed work. This information, if it exists, is on file at the offices of the Department of Public Works and Bidders will be permitted to see and examine this information for whatever value they consider it worth. However, this information is not guaranteed, and Bidders should satisfy themselves by making borings or test pits, or by such other methods as they may prefer, as to the character, location, and amounts of water, peat, clay, sand, quicksand, gravel, boulders, conglomerate, rock, gas or other material to be encountered or work to be performed.

Various underground and overhead structures and utilities are shown on the plans. The location and dimensions of such structures and utilities, where given, are believed to be reasonably correct, but do not purport to be absolutely so. These structures and utilities are plotted on the Plans for the information of the Bidders, but information so given is not to be construed as a representation or assurance that such structures will be found or encountered as plotted, or that such information is complete or accurate.

I-2.02 FORM, PREPARATION AND PRESENTATION OF PROPOSALS

Each Proposal shall be submitted upon the Proposal Form and in accordance with the instructions included herein. The Proposal Form must not be detached herefrom. All blank spaces for bid prices must be filled in, in both words and figures, with the unit or lump sum prices, or both, for which the Proposal is made. The computed total price for each unit price Contract Item shall be determined by multiplying the estimated quantity of the item, as set forth in the Proposal Form, by the corresponding unit price bid for such item. The resulting product shall be entered in the appropriate blank space under the column headed "Computed Total Price for Item". The lump sum price bid for each lump sum price Contract Item shall also be entered in the column headed "Computed Total Price for Item". If a Proposal contains any omissions, erasures, alterations, additions, or items not called for in the itemized Proposal, or contains irregularities of any kind, such may constitute sufficient cause for rejection of the Proposal. In case of any discrepancy in the unit price or amount bid for any item in the Proposal, the price as expressed in written words will govern. In no case is the Agreement Form to be filled out or signed by the Bidder.

In the case of certain jobs bid Lump Sum a "Schedule of Unit Prices" must be filled out as an attachment to the Lump Sum proposal. These prices may be used as a guide for the negotiation of change orders, at the City's option.

The proposal must be signed and certified and be presented on the prescribed form in a sealed envelope on/or before the time and at the place stated in the Notice of Bidders, endorsed with the name of the person, firm or corporation presenting it, the date of presentation, and the title of the work for which the Proposal is made.

Unless the apparent low bidder is now engaged in or has recently completed contract work for the City of Tampa, he, if requested, shall furnish to the City, after the opening of bids and prior to award, a summary statement of record of construction experience over the past three (3) years with proper supporting evidence, and, if required by the City, shall also furnish a list of equipment and other facilities pertinent to and available for the proper execution of the proposed work, and a statement of financial resources to the extent necessary to establish ability to carry on the proposed work. The City may make further investigations as considered necessary with respect to responsibility of the Bidder to whom it appears may be awarded the Contract.

If forwarded by mail, the sealed envelope containing the Proposal, endorsed as directed above, must be enclosed in another envelope addressed as specified in the Notice to Bidders and sent by registered mail.

I-2.03 ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation must be in writing, addressed to the Contract Administration Department, Tampa Municipal Office Building, 4th Floor North, City Hall Plaza, Tampa, Florida 33602. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of the Proposals. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be sent by certified mail, with return receipt requested, to all prospective bidders at the respective addresses furnished, for such purposes, not later than three (3) working days prior to the date fixed for the opening of the Proposals, and if requested, a copy will be delivered to the prospective bidder's representative. Failure of any Bidder to receive any such addenda shall not relieve said Bidder from any obligation under his Proposal as submitted. All addenda so issued shall become part of the Contract Documents.

I-2.04 BID SECURITY

Each Proposal must be accompanied by a certified or cashier's check issued by a solvent bank or trust company and payable at sight to the City of Tampa, in compliance with Section 255.051 Florida Statutes, or a Bid Bond upon the form provided herein, in an amount of not less than five percent of the sum of the computed total amount of the Bidder's Proposal as a guarantee that if the Proposal is accepted, the Bidder will execute and fill in the proposed Contract and Public Construction Bond within twenty (20) days after notice of award of the Contract. Certified checks shall have all necessary documentary revenue stamps attached if required by law. Surety on Bid Bonds shall be a duly authorized surety company authorized to do business in the State of Florida, and all such Bonds shall be issued or countersigned by a local resident producing agent, and satisfactory evidence of the authority of the person or persons executing such Bond to Execute the same shall be submitted with the Bond. Bid Bonds shall be issued by a surety company acceptable to the City.

Within ten (10) days after the opening of Proposals, the bid security of all but the three lowest Bidders will be returned. The bid security of the remaining two Bidders whose Proposals are not accepted will be

returned within ten (10) days after the execution of the Contract, or, if no such Contract has been executed, within ninety (90) days after the date of opening Proposals. The bid security of the Bidder whose Proposal is accepted will be returned only after he has duly executed the Contract and furnished the required Public Construction Bond and insurance.

Should it be necessary for the City to retain the bid security and said bid security is in the form of checks, the checks of these Bidders will be returned if replaced by Bid Bonds in an amount equal to the amount of the checks of such Bidders in such form and issued by a surety company acceptable to the City.

A Bidder may withdraw his Proposal before the time fixed for the opening of Proposals, without prejudice to himself, by communicating his purpose, in writing, to the Mayor and City Council, and when his communication is received, the Proposal will be handed to him or his authorized agent unopened. No Bidder may withdraw his Proposal within ninety (90) days after the day of opening Proposals.

The Bidder whose Proposal is accepted shall enter into a written contract, upon the Agreement form included herein, for the performance of the work and furnish the required Public Construction Bond within twenty (20) days after written notice by the City of Award of Contract has been served on such Bidder personally or after receipt of the written notice by registered mail to such Bidder at the address given in his Proposal.

If the Bidder to whom a Contract is awarded refuses or neglects to execute it or fails to furnish the required Public Construction Bond within twenty (20) days after receipt by him of the Notice of Award of Contract, the amount of his bid security shall be forfeited and shall be retained by the City as liquidated damages, and not as a penalty, it being now agreed that said sum is a fair estimate of the amount of damages that the City will sustain in case said Bidder fails to enter into a Contract and furnish the required Public Construction Bond. If a Bid Bond was furnished, the full amount of the Bond shall become due and payable as liquidated damages caused by such failure. The full amount of the bid security shall be forfeited as liquidated damages without consideration of the fact that an award may be less than the full amount of the Bidder's Proposal, excepting that the award shall be within the conditions of said Proposal relating to the basis of consideration for an award. No plea of mistake in the bid or misunderstanding of the conditions of forfeiture shall be available to the Bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

I-2.05 LAWS AND REGULATIONS

The Bidder who is awarded the Contract must comply with all laws of the State of Florida, and all applicable Ordinances of the City of Tampa respecting labor and compensation and with all other statutes, ordinances, rules and regulations applicable and having the force of law.

I-2.06 PUBLIC CONSTRUCTION BOND

The Bidder who is awarded the Contract will be required to furnish a Public Construction Bond upon the form provided herein, equal to 100 percent of the Contract price, such Bond to be executed by a surety company acceptable to the City of Tampa and licensed to underwrite contracts in the State of Florida. Surety companies shall have a rating of not less than: B+ Class VI as evaluated in the most recently circulated BEST'S KEY RATING GUIDE PROPERTY-LIABILITY.

I-2.07 SIGNATURE AND QUALIFICATIONS OF BIDDERS

Proposals must be signed in ink by the Bidder with signature in full. When a firm is a Bidder, the Proposal shall be signed in the name of the firm by one or more of the partners. When a corporation is a Bidder the officer signing shall set out the corporate name in full beneath which he shall sign his name and give the title of his office. The Proposal shall also bear the seal of the corporation attested by its secretary. Anyone signing the Proposal as agent must file with it legal evidence of his authority to do so.

Bidders who are nonresident corporations shall furnish to the City a

duly certified copy of their permit to transact business in the State of Florida, signed by the Secretary of State, within ten days of the notice to do so. Such notice will be given to Bidders who are nonresident corporations, to whom it appears an award will be made, and the copy of the permit must be filed with the City before the award will be made. Failure to promptly submit this evidence of qualification to do business in the State of Florida may be basis for rejection of the Proposal.

I-2.08 REJECTION OF PROPOSALS

The City reserves the right to reject any Proposal if investigation of the Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations and to complete the work contemplated therein. Any or all Proposals will be rejected if there is reason to believe that collusion exists among Bidders. Proposals will be considered irregular and may be rejected if they show serious omissions, alterations in form, additions not called for, conditions or unauthorized alternates, or irregularities of any kind. The City reserves the right to reject any or all Proposals and to waive such technical errors as may be deemed best for the interests of the City.

I-2.09 QUANTITIES ESTIMATED ONLY

The estimate of quantities of the various items of work and materials, if set forth in the Proposal Form, is approximate only and is given solely to be used as a uniform basis for the comparison of Proposals.

The quantities actually required to complete the Contract work may be less or more than so estimated, and if awarded a Contract for the work specified, the Contractor agrees that he will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work assumed for comparison of Proposals and quantities of work actually performed. The City further reserves the right to vary the quantities in any amount.

I-2.10 COMPARISON OF PROPOSALS

Except jobs bid on a "One Lump Sum" basis, proposals will be compared on the basis of a total computed price arrived at by taking the sum of the estimated quantity of each item and the corresponding unit price of each item, and including any lump sum prices on individual items.

The computed total prices for individual Contract Items and the total computed price for the entire Contract, as entered by the Bidder in the Proposal Form, are for convenience only and are subject to correction in the tabulation and computation of the Proposals.

I-2.11 BASIS OF AWARD

The Contract will be awarded, if at all, to the lowest responsible Bidder or Bidders, as determined by the City and by the terms and conditions of the Contract Documents. Unless all bids are rejected, the award will be made within ninety (90) days after the opening of Proposals. The successful Bidder will be required to possess, or obtain, a valid City Occupational License.

I-2.12 INSURANCE REQUIRED

The successful Bidder and his subcontractors will be required to procure and pay for insurance covering the work in accordance with the provisions of Article 6.02 of the Agreement as indicated on special instructions pages beginning with INS-1.

I-2.13 NO ASSIGNMENT OF BID

No Bidder shall assign his bid or any rights thereunder.

I-2.14 NONDISCRIMINATION IN EMPLOYMENT

Contracts for work under this Proposal will obligate the contractors and subcontractors not to discriminate in employment practices.

Bidders must, if requested, submit with their initial bid a signed statement as to whether they have previously performed work subject to the President's Executive Order Nos. 11246 and 11375.

Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the Contract.

Successful Bidders must, if requested, submit a list of all subcontractors who will perform work on the project and written,

signed statement from authorized agents of the labor pools with which they will or may deal for employees on the work together with supporting information to the effect that said labor pools practices and policies are in conformity with Executive Order No. 11246 and that said labor pools will affirmatively cooperate in or offer no hindrance to the recruitment, employment and equal treatment of employees seeking employment and performing work under the Contract, or a certification as to what efforts have been made to secure such statements when such agents or labor pools have failed or refused to furnish them prior to the award of the Contract.

I-2.15 LABOR STANDARDS

The Bidder's attention is directed to the Contract Provisions of the Labor Standards for federally assisted projects which may be attached to and made a part of the Agreement.

I-2.16 NOTICE TO LABOR UNIONS

If applicable, the successful Bidder will be required to provide Labor Unions and other organizations of workers a completed copy of the form entitled "Notice to Labor Unions or Other Organizations of Workers", and such form may be made a part of the Agreement.

I-2.17 NOTICE TO PROSPECTIVE FEDERALLY-ASSISTED CONSTRUCTION CONTRACTORS

A Certification of Nonsegregated Facilities, as required by the May 9, 1967, Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted to said Secretary prior to the award of a federally-assisted construction and Contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause. The form of certification may be bound herein following the form of Bid Bond.

Contractors receiving federally-assisted construction Contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractor for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause:

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

"A Certification of Nonsegregated Facilities, as required by the May 9, 1967, Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause."

"Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide from the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause."

The United States requires a pre-award conference if a proposed construction contract exceeds one million dollars to determine if the the prospective contractor is in compliance with the Equal Employment Opportunity requirements of Executive Order 11246 of September 24, 1965. In such instances, a meeting may be scheduled at which the prospective contractor must specify what affirmative action he has taken or proposed to take to assure equal employment opportunity which must be approved by the United States before award of the contract will be authorized.

Bidders must be prepared to submit an Equal Employment Opportunity (EEO) plan at a pre-award conference. The plan must include bidding opportunities offered by the Bidder to minority subcontractors.

On October 13, 1971, President Nixon issued Executive Order 11246 emphasizing the government's commitment to the promotion of minority business enterprise. Accordingly, the United States is firmly

committed to the utilization of available resources to support this important program. U.S. agencies are most interested in realizing minority participation on the subject. Achieving equal employment opportunity compliance is required through Executive Order 11246. WE cannot emphasize too strongly that minority subcontractors be extended subcontractors bidding opportunities as but one step in your affirmative action policy.

Due to the importance of this contract, U.S. Agencies may conduct an EEO Conference prior to the award of the Contract. It is suggested that the responsive Bidder confirm the minority subcontractors he contacted for bids or quotations in his EEO plan submitted at the conference.

I-2.18 EEO AFFIRMATIVE ACTION REQUIREMENTS

By the submission of a Proposal, each Bidder acknowledges that he understands and will agree to be bound by the equal opportunity requirements of Federal regulations which shall be applicable throughout the performance of work under any contract awarded pursuant to solicitation. Each Bidder agrees that if awarded a contract, he will similarly bind contractually each subcontractor. In policies, each Bidder further understands and agrees that if awarded a contract, he must engage in Affirmative Action directed to promoting and ensuring equal employment opportunity in the work force used under the contract (and he must require contractually the same effort of all subcontractors whose subcontracts exceed \$100,000). The Bidder understands and agrees that "Affirmative Action" as used herein shall constitute a good faith effort to achieve and maintain minority employment in each trade in the on-site work force used on the project. ***** END of SECTION *****

CITY OF TAMPA INSURANCE REQUIREMENTS

During the life of the award/contract the Awardee/Contractor shall provide, pay for, and maintain insurance with companies authorized to do business in Florida, with an A.M. Best rating of B+ (or better) Class VII (or higher), or otherwise be acceptable to the City if not rated by A.M. Best. All insurance shall be from responsible companies duly authorized to do business in the State of Florida.

All commercial general liability insurance policies (and Excess or Umbrella Liability Insurance policies, if applicable) shall provide that the City is an additional insured as to the operations of the Awardee/Contractor under the award/contract including the additional insured endorsement, the subrogation waiver endorsement, and the Severability of Interest Provision. In lieu of the additional named insured requirement, if the Awardee/Contractor's company has a declared existing policy which precludes it from including additional insureds, the City may permit the Contractor to purchase an Owners and Contractors Protective Liability policy. Such policy shall be written in the name of the City at the same limit as is required for General Liability coverage. The policy shall be evidenced on an insurance binder which must be effective from the date of issue until such time as a policy is in existence and shall be submitted to the City in the manner described below as applicable to certificates of insurance.

The insurance coverages and limits required must be evidenced by a properly executed Acord 25 Certificate of Insurance form or its equivalent. Each Certificate must be personally manually signed by the Authorized Representative of the insurance company shown in the Certificate with proof that he/she is an authorized representative thereof. Thirty days' written notice must be given to the City of any cancellation, intent not to renew, or reduction in the policy coverages, except in the application of the aggregate liability limits provisions. Should any aggregate limit of liability coverage be reduced, it shall be immediately increased back to the limit required by the contract. The insurance coverages required herein are to be primary to any insurance carried by the City or any self-insurance program thereof.

The following coverages are required:

A. Commercial General Liability Insurance shall be provided on the most current Insurance Services Office (ISO) form or its equivalent. This coverage must be provided to cover liability arising from premises and operations, independent contractors, products and completed operations, personal and advertising injury, contractual liability, and XCU exposures (if applicable). Completed operations liability coverage shall be maintained for a minimum of one-year following completion of work. The amount of Commercial General Liability insurance shall not be less than the amount specified.

(a) \$1,000,000 per occurrence and a \$2,000,000 general aggregate for projects valued at \$2,000,000 or less. General aggregate limit for projects over that price shall equal or exceed the price of the project. An Excess or Umbrella Liability insurance policy can be provided to meet the required limit. Risk Management may be contacted for additional information regarding projects of this nature.

B. Automobile Liability Insurance shall be maintained in accordance with the laws of the State of Florida, as to the ownership, maintenance, and use of all owned, non-owned, leased, or hired vehicles. The amount of Automobile Liability Insurance shall not be less than the amount specified.

(a) \$500,000 combined single limit each occurrence bodily injury & property damage- for projects valued at \$100,000 and under

(b) \$1,000,000 combined single limit each occurrence bodily injury & property damage – for projects valued over \$100,000

C. Worker's Compensation and Employer's Liability Insurance shall be provided for all employees engaged in the work under the contract, in accordance with the Florida Statutory Requirements. The amount of the Employer's Liability Insurance shall not be less than:

(a) \$500,000 bodily injury by accident and each accident, bodily injury by disease policy limit, and bodily injury by disease each employee – for projects valued at \$100,00 and under

(b) \$1,000,000 bodily injury by accident and each accident, bodily injury by disease policy limit, and bodily injury by disease each –for projects valued over \$100,000

D. Excess Liability Insurance or Umbrella Liability Insurance may compensate for a deficiency in general liability, automobile, or worker's compensation insurance coverage limits. If the Excess or Umbrella policy is being provided as proof of coverage, it must name the City of Tampa as an additional insured (**IF APPLICABLE**).

E. Builder's Risk Insurance, specialized policy designed to cover the property loss exposures that are associated with construction of buildings. The amount of coverage should not be less than the amount of the project. **(IF APPLICABLE)**.

F. Installation Floater- a builder's risk type policy that covers specific type of property during its installation, is coverage required for highly valued equipment or materials such as compressors, generators, or other machinery that are not covered by the builder's risk policy **(IF APPLICABLE)**.

G. Longshoreman's & Harbor Worker's Compensation Act/Jones Act coverage shall be maintained for work being conducted upon navigable water of the United States. The limit required shall be the same limit as the worker's compensation/employer's liability insurance limit **(IF APPLICABLE)**.

H. Professional Liability shall be maintained against claims of negligence, errors, mistakes, or omissions in the performance of the services to be performed and furnished by the Awardee/Contractor or any of its subcontractors when it acts as a DESIGN PROFESSIONAL. The amount of coverage shall be no less than amount specified **(IF APPLICABLE)**.

(a) \$1,000,000 per incident and general aggregate. Note all claims made policies must provide the date of retroactive coverage.

The City may waive any or all of the above referenced insurance requirements based on the specific nature of goods or services to be provided under the award/contract.

ADDITIONAL INSURED - The City must be included as an additional insured by on the general and (Excess or Umbrella liability policies) if applicable. Alternatively, the Contractor may purchase a separate owners protective liability policy in the name of the City in the specified amount as indicated in the insurance requirements.

CLAIMS MADE POLICIES - If any liability insurance is issued on a claims made form, Contractor agrees to maintain uninterrupted coverage for a minimum of one year following completion and acceptance of the work either through purchase of an extended reporting provision, or through purchase of successive renewals with a retroactive

date not later than the beginning of performance of work for the City. The retroactive date must be provided for all claims made policies.

CANCELLATION/NON-RENEWAL - Thirty (30) days written notice must be given to the City of any cancellation, intent to non-renew or material reduction in coverages (except aggregate liability limits). However, ten (10) days notice may be given for non-payment of premium. Notice shall be sent to the City of Tampa Department of Public Works, 306 E. Jackson Street, Tampa, FL 33602.

NUMBER OF POLICIES - General and other liability insurance may be arranged under single policies for the full amounts required or by a combination of underlying policies with the balance provided by an excess or umbrella liability insurance policy.

WAIVER OF SUBROGATION - Contractor waives all rights against City, its agents, officers, directors and employees for recovery of damages to the extent such damage is covered under the automobile or excess liability policies.

SUBCONTRACTORS - It is the Contractor's responsibility to require all subcontractors to maintain adequate insurance coverage.

PRIMARY POLICIES - The Contractor's insurance is primary to the City's insurance or any self insurance program thereof.

RATING - All insurers shall be authorized to do business in Florida, and shall have an A.M. Best rating of B+ (or better), Class VII (or higher), or otherwise be acceptable to the City if not rated by A.M. Best.

DEDUCTIBLES - The Contractor is responsible for all deductibles. In the event of loss which would have been covered but for the presence of a deductible, the City may withhold from payment to Contractor an amount equal to the deductible to cover such loss should full recovery not be obtained under the insurance policy.

INSURANCE ADJUSTMENTS - These insurance requirements may be increased, reduced, or waived at the City's sole option with an appropriate adjustment to the Contract price.

Document updated on 12/22/2009 by RLD (Risk Management)

Instructions Regarding Use of the SLBE Goal Setting List

Bidders must solicit a subcontracting bid from ALL of the firms listed on the SLBEs list provided on the City's web site, and provide documentation of emails, faxes, phone calls, letters, or other communication with the firms a first step in demonstrating Good-Faith Efforts to achieve the goal set for SLBE participation on this contract.

The list is formatted to facilitate e-mailing of a solicitation to the listed firms by copying and pasting the email addresses.

The SLBE participation Goal is based upon the availability of the certified firms indicated on the attached list. The Goal and Requirements of the City's Equal Business Opportunity Program are stated in the Bid/Contract Document, Specifications.

SOLICITATION FOR SUBCONTRACTOR QUOTES

From:

OUR COMPANY NAME:

TELEPHONE NUMBER:

ADDRESS:

FAX NUMBER:

E-MAIL ADDRESS:

To Subcontractor:

Our firm is in the process of preparing a bid for a **City of Tampa Contract**. Please accept this notice as our request for quotes for the scope of work identified below. Please respond to this request by filling in the information below and returning via e-mail or fax to the address or number provided. Please contact us if you need any assistance in obtaining bonding, lines of credit, insurance, assistance in obtaining necessary equipment, supplies, materials, participation in a City-sponsored mentor-protégé program, or if you have any questions.

Plans and Specs for this project are posted at:

http://www.tampagov.net/dept_contract_administration/programs_and_services/construction_project_bidding/

CONTRACT NO.:

CONTRACT NAME:

CITY'S BID OPENING DATE:

DEADLINE FOR YOUR SUBCONTRACTOR BID OR RESPONSE:

SPECIFIC SCOPE OF WORK:

Please complete and submit with your subcontract bid or response:

YOUR FIRM'S NAME:

MAILING ADDRESS:

CITY:

STATE:

ZIP:

FAX NUMBER:

E-MAIL ADDRESS:

☐ Yes, my company is interested in quoting this project for the following items of work:

☐ No, my company will not quote this project for the following reason(s):

(Sample Suggested Sub Solicitation 3-9-9 Tampa MBDO)

Contract 14-C-00033; Tampa Riverwalk Doyle Carlton Drive and Seawall Repair

PROPOSAL

To the Mayor and City Council of the City of Tampa, Florida:

Name of Bidder _____

Business Phone Number and Email Address _____

Business Name and Mailing Address _____

Phone Number and Name of Contact Regarding Permits _____

Contractor/Qualifiers Name and Federal Identification Number _____

Date of Proposal _____

(If Bidder is a firm, fill in the following blanks):

Names and Residential Addresses of Partners

(If Bidder is a corporation, fill in the following blanks):

Organized under the laws of the State of _____

Names and Address of President

Name and Address of Vice President

Name and Address of Secretary

Names and Address of Treasurer

The above-named Bidder affirms and declares:

- (1) That the Bidder is of lawful age and that no other person, firm or corporation has any interest in this Proposal or in the Contract proposed to be entered into.
- (2) That this Proposal is made without any understanding, agreement or connection with any other person, firm, or corporation making Proposal for the same purposes, and is in all respects fair and without collusion or fraud.
- (3) That the Bidder is not in arrears to the City of Tampa, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation to the City of Tampa.
- (4) That no officer or employee or person whose salary is payable in whole or in part from the City Treasury is, shall be or become interested, directly or indirectly, as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the supplies, materials, or equipment and work or labor to which it relates, or in any portion of the profits thereof.
- (5) That the Bidder has carefully examined the site of the work and that, from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality, and quantity of materials and the kinds and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, affect the work or its performance.
- (6) That the Bidder
_____ Has; Treasury Number _____
_____ Has not
(Check applicable box)
previously performed work under the President's Executive Order Nos. 11246 and 11375.
- (7) That the undersigned, as Bidder, also declares that he has carefully examined and fully understands all the component parts of the Contract Documents and agrees that he will execute the Contract and finish the required Performance Bond and will completely perform the work in strict accordance with the terms of the Contract and the Contract Documents therein referred to for the following prices, to wit:

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price in Figures	Total Price in Figures
BASE BID						
101- 1	Mobilization	LS	1		\$	\$
102- 1	Maintenance of Traffic	LS	1		\$	\$
104-10-3	Staked Silt Fence	LF	3,066		\$	\$
104-11	Floating Turbidity Barrier	LF	1,850		\$	\$
104-15	Soil Tracking Prevention Device	EA	2		\$	\$
104-18	Inlet Protection System	EA	6		\$	\$
110- 1- 1	Clearing and Grubbing	LS	1		\$	\$
110- 4	Removal of Existing Pavement	SY	462		\$	\$
110-15-1	Tree Protection/ Tree Trimming/ Root Pruning	LS	1		\$	\$
110-73	Demolish Seawall and Cap	LF	172		\$	\$
162-2	Sod	SY	2,624		\$	\$
400-0-11	CIP Concrete Gravity Wall including concrete columns	LF	593		\$	\$
400-4-4	CIP Concrete Cantilevered Slab	LF	172		\$	\$
400-8	CIP Concrete Seawall and Cap	LF	172		\$	\$
440-1-20	Underdrain System - (Underdrain Pipe)	LF	160		\$	\$
440-70	Underdrain System (Cleanout/Inspection Box)	EA	3		\$	\$
440-73-2	Underdrain System (Outlet Pipe)	LF	87		\$	\$
520- 1- 10	Curb and Gutter Type F	LF	98		\$	\$
520- 2- 4	Curb and Gutter Type D	LF	99		\$	\$
521-72-4	CIP Concrete Vehicle Barrier Wall	LF	232		\$	\$
522- 1	Concrete Sidewalk (4")	SY	645		\$	\$
522- 2	At Grade Concrete Path	SY	3,090		\$	\$
526-1-2	Concrete Pavers (Furnish and Install)	SF	1,961		\$	\$

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price in Figures	Total Price in Figures
700-3-501	Sign Relocation	EA	1		\$	\$
711-11-121	Thermoplastic, Standard, White, Solid, 6"	LF	251		\$	\$
711-11-124	Thermoplastic, Standard, White, Solid, 18"	LF	111		\$	\$
SP-2.13	Project Aerial Photographs	LS	1		\$	\$
SP-2.14	Project Videotaping	LS	1		\$	\$
SP-6.03.1	Water Service Main	LF	1,775		\$	\$
SP-6.03.2	Water Flush-Mounted Quick Coupler and Cover	EA	12		\$	\$
SP-6.03.3	Drinking Fountain with Pet Fountain and Concrete Pad	EA	1		\$	\$
SP-10.15	Crushed Oyster Shell Groundcover 4" (Furnish & Install)	SY	221		\$	\$
SP-11.01	Reserve Parking Signs in Parking Meter Area	LS	1		\$	\$
SP-11.05	Water for Dust Control	1000/gal	30		\$	\$
SP-16.01-1	Helical Pulldown Micropiles w/Anchorage (F&I)	LF	2,860		\$	\$
SP-16.01-2	Helical Pulldown Micropiles - verification load tests	EA	2		\$	\$
SP-16.01-3	Helical Pulldown Micropiles - proof load test	EA	2		\$	\$
SP-16.02-1	Helical Tiebacks w/Anchorage (F&I)	LF	782		\$	\$
SP-16.02-2	Helical Tiebacks - performance load tests	EA	2		\$	\$
SP-16.02-3	Helical Tiebacks - proof load tests	EA	15		\$	\$
SP-17.03	Railing System (Furnish and Install)	LF	2,621		\$	\$

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price in Figures	Total Price in Figures
ELECTRICAL						
630-2-11	Lighting Homerun Circuit (Conduit) (Furnish and Install)	LF	3,665		\$	\$
630-2-11-2	Conduit, Boxes and Raceway for Fiber Optic System	LF	2,073		\$	\$
635-2-14	Pull Boxes	EA	16		\$	\$
639-1-121	Modify Power Service	LS	1		\$	\$
715-1-12	Lighting Homerun Circuit (Wire) (F&I)	LF	12,610		\$	\$
715-4-300-1	Single Arm Light Pole	EA	44		\$	\$
715-4-300-2	Double Arm Light Pole	EA	1		\$	\$
715-4-300-3	Double Arm Light Pole (One Arm longer than the Other)	EA	4		\$	\$
715-10-2	Light Pole Foundations	EA	50		\$	\$
715-11-119	Pole Mounted Light Fixtures	EA	65		\$	\$
715-11-129	Underdeck Light Fixtures	EA	7		\$	\$
715-11-139-1	Art Display Light Fixtures	EA	66		\$	\$
715-11-139-2	Light Fixtures for America America Public Art	EA	5		\$	\$
715-11-139-3	Light Fixtures for Levitating Nimbus Public Art & Trees	EA	11		\$	\$
715-11-139-4	Lockable Disconnect Switches for Public Art	EA	2		\$	\$
715-11-139-5	Relocate Pull Box or Light Fixture	EA	4		\$	\$
ARCHITECTURAL FEATURES						
SP-10.13.1	Screen Wall under Laurel Street Bridge	LS	1		\$	\$
SP-10.13.2	Screen Wall under I-275 Bridge	LS	1		\$	\$
SP-10.13.3	Monument Stand/Plaque/Foundation	EA	1		\$	\$
SP-10.14.1	America America Art Sculpture	LS	1		\$	\$
SP-10.14.2	Levitating Nimbus Art Sculpture	LS	1		\$	\$

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price in Figures	Total Price in Figures
HARDSCAPE FEATURES						
SP-10.12.1	Benches	EA	5		\$	\$
SP-10.12.2	Backless Benches	EA	2		\$	\$
SP-10.12.3	Cube Bench	EA	6		\$	\$
SP-10.12.4	Shade Structure/Swing	EA	3		\$	\$
SP-10.12.5	Bicycle Rack	EA	6		\$	\$
SP-10.12.6	Trash Receptacle	EA	4		\$	\$
SP-10.12.7	Bicycle Repair Station	EA	1		\$	\$
SP-11.17	Riverwalk Wayfinding Signage (Fabrication, Furnish and Installation)	LS	1		\$	\$
LANDSCAPING & IRRIGATION						
590-70	Irrigation System	LS	1		\$	\$
999-2	Landscape Complete	LS	1		\$	\$
2900-1	90 Day Maintenance	MONTH	3		\$	\$
SEALWALL REPAIR / REPLACEMENT						
101	Mobilization	LS	1		\$	\$
400-4-8	Class 4 Concrete Bulkhead	CY	750		\$	\$
411-1	Epoxy Materials for Crack Injection	GAL	45		\$	\$
411-2	Inject and Seal Crack	LF	400		\$	\$
415-1-8	Reinforcing Steel	LB	80,000		\$	\$
443-70-06	French Drain	LF	1,860		\$	\$
455-87	Tie-Rod Repair Type 1	EA	108		\$	\$
455-87	Tie-Rod Repair Type 2	EA	108		\$	\$

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price in Figures	Total Price in Figures
EXTRA WORK						
SP-11.16	Contingency Funds	LS	1	One Hundred Thousand Dollars and no/cents	\$ 100,000	\$ 100,000
SP-11.18	Skateboard Deterrent Allowance	LS	1	Thirty Thousand Dollars and no/cents	\$ 30,000	\$ 30,000
TOTAL BID:					\$	\$

Computed Total Price In Words:

_____ dollars and _____ cents.

Computed Total Price in Figures: \$_____

The bidder acknowledges that the following addenda have been received and that the changes covered by the addendum(s) have been taken into account in this proposal: #1 ____ #2 ____ #3 ____ #4 ____ #5 ____.

The bidder acknowledges the requirements of the City of Tampa's Equal Business Opportunity Program.

Bidder acknowledges that included in the various items of the proposal and the Total Bid Price are costs for complying with the Florida Trench Safety Act (90096), (Laws of Fla.) effective October 1, 1990. The bidder further identifies the costs to be summarized below:

	Trench Safety Measure (Description)	Unit of Measure (LF, SY)	Unit Quantity	Unit Cost	Extended Cost
A.	_____	_____	_____	_____	_____
B.	_____	_____	_____	_____	_____
C.	_____	_____	_____	_____	_____
D.	_____	_____	_____	_____	_____

Total Cost \$_____

Signed _____

Failure to complete the above may result in the bid being declared non-responsive.

Accompanying this Proposal is a certified check, cashier's check or Bid Bond (form included herein must be used) on the form at least five (5) percent of the total amount of the Proposal which check shall become the property of the

_____ of _____
(Name of Bank or Surety) (City & State)

City of Tampa, or which bond shall become forthwith due and payable to the City of Tampa, if this Proposal shall be accepted by the City of Tampa and the undersigned shall fail to execute a contract with and to furnish the required Performance Bond and Payment Bond to the City of Tampa within twenty (20) days after the date of receipt of written Notice of Award by the City of Tampa to the undersigned so to do.

Dated _____, 2014

(Name of Bidder)

(Address of Bidder)

(Signature)

(Title)

Where Bidder is a Corporation:

Attest:

Secretary

AFFIX
CORPORATE
SEAL

(ACKNOWLEDGMENT OF PRINCIPAL)

STATE OF _____)
) SS:
COUNTY OF _____)

For a Corporation:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ of _____, a _____ corporation, on behalf of the corporation. He/she is ____ personally known or has ____ produced _____ as identification.

Notary

My Commission Expires:

For an Individual:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ who is ____ personally known to me or has ____ produced _____ as identification.

Notary

My Commission Expires:

For a Firm:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ who signed on behalf of the said firm. He/she is ____ personally known or has ____ produced _____ as identification.

Notary

My Commission Expires:



Page 1 of 4 DMI – Solicited/Utilized
City of Tampa –DMI -Schedule of All Sub-(Contractors/Consultants/Suppliers) Solicited
(FORM MBD-10)

Contract No.: _____ Contract Name: _____
Contractor Name: _____ Address: _____
Federal ID: _____ Phone: _____ Fax: _____ Email: _____

☐ No Firms were contacted/solicited for this contract.

☐ No Firms were contacted because: _____

☐ See attached documents with supplemental information.

NIGP Code General Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

This DMI Schedule Must Be Submitted with the Bid or Proposal (Do Not Modify This Form)

S = SLBE W=WMBE	Company Name Address Phone & Fax	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic Am. AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade or Services NIGP Code (listed above)	Contact Method L=Letter F=Fax E=Email P=Phone	Quote or Resp. Rec'd Y/N
Federal ID					

It is hereby certified that the information provided is an accurate and true account of contacts and solicitations for sub – contracting opportunities on this contract. **This form must be completed and submitted with the bid or proposal.** Modifying or failing to sign DMI forms may result in Non-Compliance and/or deemed non-responsive.

Signed: _____ Name/Title: _____ Date: _____



Page 2 of 4DMI – Solicited/Utilized

Instructions for completing The Sub-(Contractors/Consultants/ Suppliers) Solicited Form (Form MBD-10)

This form must be submitted with all bids or proposals. All subcontractors (regardless of ownership or size) solicited and subcontractors from whom unsolicited quotations were received must be included on this form. The instructions that follow correspond to the headings on the form required to be completed. Note: Ability or desire to self-perform all work shall not exempt the prime from Good Faith Efforts when Goal has been established.

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business.
- **Address.** The physical address of your business.
- **Federal ID.FIN.** A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Firms were contacted/solicited for this contract.** Checking the box indicates that a pre-determined Subcontract Goal was not set by the City resulting in your business not using subcontractors and will self-perform all work. If during the performance of the contract you employ subcontractors, the City must pre-approve subcontractors. Use of the “Sub-(Contractors/Consultants/Suppliers) Payments” form must be submitted with your invoices. Note: Certified SLBE or WMBE firms bidding as Primes are not exempt from outreach and solicitation of subcontractors.
- **No Firms were contacted because.** Provide brief explanation why no firms were contacted/solicited.
- **See attached documents.** Check box, if after you have completed the DMI Form in its entirety, you are providing any additional documentation relating to the form. All DMI data not submitted on the MBD Form-10 must be in the same format and have all requested data from MBD Form-10 included.

The following instructions are for information of any and all subcontractors solicited.

- **“S” = SLBE, “W” = WMBE.** Enter “S” for firms Certified by the City as Small Local Business Enterprises and/or “W” for firms Certified by the City as Women/Minority Business Enterprise.
- **Federal ID.FIN.** A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials** Indicate the trade, service, or material provided by the subcontractor. NIGP codes are listed at top section of document.
- **Contact Method L=letter, F=fax, E=Email, P=Phone.** Indicate with letter the method of soliciting for bid.
- **Quote or Resp. (response) Rec’d (received) Y/N.** Indicate “Y” Yes if you received a quotation or if you received a response to your solicitation. Indicate “N” No if you received no response to your solicitation from the subcontractor.

If any additional information is required or you have any questions, you may call the Minority Business Development Office at (813) 274-5522.



Page 3 of 4DMI – Solicited/Utilized
City of Tampa –DMI Schedule of Sub-(Contractors/Consultants/Suppliers) to be Utilized
(FORM MBD-20)

Contract No.: _____ Contract Name: _____
Contractor Name: _____ Address: _____
Federal ID: _____ Phone: _____ Fax: _____ Email: _____

[] See attached documents.

[] No Subcontracting (of any kind) will be performed on this contract.

NIGP Code General Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

This DMI Schedule Must Be Submitted with the Bid or Proposal (Do Not Modify This Form)

Enter "S" for firms Certified as Small Local Business Enterprises, "W" for firms Certified as Women/Minority Business Enterprise

S = SLBE W=WMBE	Company Name Address Phone & Fax	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic Am. AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade, Services, or Materials NIGP Code Listed above	Amount of Quote. Letter of Intent if available.	Percent of Scope/Contract %
Federal ID					

Total Subcontract/Supplier Utilization \$ _____

Total SLBE Utilization \$ _____

Total WMBE Utilization \$ _____

Percent SLBE Utilization of Total Bid/Proposal Amt. ____% Percent WMBE Utilization of Total Bid/Proposal Amt. ____%

It is hereby certified that the following information is a true and accurate account of utilization for sub-contracting opportunities on this contract. **This form must be completed and submitted with the bid or proposal.** Modifying or failing to sign DMI forms may result in Non-Compliance and/or deemed non-responsive.

Signed: _____ Name/Title: _____ Date: _____



Page 4 of 4DMI – Solicited/Utilized

Instructions for completing The Sub-(Contractors/Consultants/ Suppliers) to be Utilized Form (Form MBD-20)

This form must be submitted with all bids or proposals. All subcontractors projected to be utilized must be included on this form.

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business.
- **Address.** The physical address of your business.
- **Federal ID.FIN.** A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Subcontracting (of any kind) will be performed on this contract.** Checking box indicates your business will not use subcontractors when no Subcontract Goal has been set by the City, but will self-perform all work. When subcontractors are utilized during the performance of the contract, the “Sub-(Contractors/Consultants/Suppliers) Payments” form must be submitted with your invoices. Note: Certified SLBE or WMBE firms bidding as Primes are not exempt from outreach and solicitation of subcontractors.
- **See attached documents.** Check if you have provided any additional documentation relating to the utilization of subcontractors.
-

The following instructions are for information of Any and All subcontractors to be utilized.

- **Federal ID.FIN.** A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **“S” = SLBE, “W” = WMBE.** Enter “S” for firms Certified by the City as Small Local Business Enterprises and/or “W” for firms Certified by the City as Women/Minority Business Enterprise.
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials (NIGP code if Known)** Indicate the trade, service, or material provided by the subcontractor. NIGP codes are available at <http://www.tampagov.net/mbd>.
- **Amount of Quote, Letters of Intent** (required for both SLBEs and WMBEs)
- **Percent of Work/Contract.** Indicate the percent of the total contract price the subcontract(s) represent.
- **Total Subcontract/Supplier Utilization.** – Provide total dollar amount of all subcontractors/suppliers projected to be used for the contract. (Dollar amounts may not apply to CCNA proposals.)
- **Total SLBE Utilization.** Provide total dollar amount for all projected SLBE subcontractors/Suppliers used for this contract. (Dollar amounts may not apply to CCNA proposals.)
- **Total WMBE Utilization.** Provide total dollar amount for all projected WMBE subcontractors/Suppliers used for this contract. (Dollar amounts may not apply to CCNA proposals.)
- **Percent SLBE Utilization.** Total amount allocated to SLBEs divided by the total bid amount. (Dollar amounts may not apply to CCNA proposals.)
- **Percent WMBE Utilization.** Total amount allocated to WMBEs divided by the total bid/proposal amount. (Dollar amounts may not apply to CCNA proposals.)

If any additional information is required or you have any questions, you may call the Minority Business Development Office at (813) 274-5522.

TAMPA BID BOND
Contract 14-C-00033; Tampa Riverwalk Doyle Carlton Drive and Seawall Repair

KNOW ALL MEN BY THESE PRESENTS, that we, _____

(hereinafter called the Principal) and _____

(hereinafter called the Surety) a Corporation chartered and existing under the laws of the State of _____, with its principal offices in the City of _____, and authorized to do business in the State of Florida, are held and firmly bound unto the City of Tampa, a Municipal Corporation of Hillsborough County, Florida, in the full and just sum of 5% of the amount of the (Bid) (Proposal) good and lawful money of the United States of America, to be paid upon demand of the City of Tampa, Florida, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally and firmly these presents.

WHEREAS, the Principal is about to submit, or has submitted to the City of Tampa, Florida, a Proposal for the construction of certain facilities for the City designated Contract 14-C-00033, Tampa Riverwalk Doyle Carlton Drive and Seawall Repair.

WHEREAS, the Principal desires to file this Bond in accordance with law, in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE: The conditions of this obligation are such that if the Proposal be accepted, the Principal shall, within twenty (20) days after the date of receipt of written Notice of Award, execute a contract in accordance with the Proposal and upon the terms, conditions and price set forth therein, in the form and manner required by the City of Tampa, Florida and execute a sufficient and satisfactory Public Construction Bond payable to the City of Tampa, Florida in an amount of one hundred percent (100%) of the total contract price, in form and with security satisfactory to said City, then this Bid Bond obligation is to be void; otherwise to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City, upon demand, the amount thereof, in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day of _____, 2014.

Principal

BY _____

TITLE _____

BY _____

TITLE _____

(SEAL)

Producing Agent

Producing Agent's Address

Name of Agency

The addition of such phrases as "not to exceed" or like import shall render the (Bid) (Proposal) non-responsive.

AGREEMENT

For furnishing all labor, materials and equipment, together with all work incidental thereto, necessary and required for the performance of the work for the construction of Contract 14-C-00033 in accordance with your Proposal dated _____, amounting to a total of \$ _____ as completed in accordance with subsections I-2.09 and I-2.10 of the Instruction to Bidders.

THIS AGREEMENT, made and entered into in triplicate, this ____ day of _____, 2014, between the City of Tampa, Florida, hereinafter called the City, and hereinafter called the Contractor.

WITNESSETH that, in consideration of the mutual stipulations, agreements, and covenants herein contained, the parties hereto have agreed and hereby agree with each other, the Party of the First Part for itself, its successors and assigns, and the Party of the Second Part for itself, or himself, or themselves, and its successors and assigns, or his or their executors, administrators and assigns, as follows:

Contract 14-C-00033; Tampa Riverwalk Doyle Carlton Drive and Seawall Repair, shall include, but not be limited to, furnishing all labor, materials and equipment to install approximately 2,050 LF of concrete walkway on land with a portion cantilevered over water, varying in width, to provide an ADA compatible walkway for both bikes and pedestrians connecting the Riverwalk from the Straz Center to Water Works Park; features include benches, planters, shade structures, railing, public art, decorative lighting, landscaping and irrigation; repair of the seawall along the new portion of the Riverwalk along Doyle Carlton Drive with all associated work required for a complete project in accordance with the Contract Documents.

Contract Documents referred to in Article 1.01 of this Agreement also includes this volume, applicable standard drawings, the plans and any provisions referred to whether actually attached or not.

TAMPA AGREEMENT

SECTION 1 GENERAL

ARTICLE 1.01 THE CONTRACT

Except for titles, subtitles, headings, running headlines, and tables of contents (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, constitute the Contract:

The Notice to Bidders;
The Instructions to Bidders, including Special Instructions and General Instructions;
The Proposal;
The Bid Bond;
The Certification of Nonsegregated Facilities;
The Notice of Award;
The Agreement;
The Performance Bond;
The Notice To Proceed;
The Specifications, including the General Provisions, the Workmanship and Materials, the Specific Provisions or the Contract Items
The Plans;
All Supplementary Drawings Issued after award of the Contract;
All Addenda issued by the City prior to the receipt of proposals;
All provisions required by law to be inserted in this Contract, whether actually inserted or not.

ARTICLE 1.02 DEFINITIONS

The following words and terms, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless different meaning is clear from the context:

(a)"City" shall mean the City of Tampa, Florida, represented by its Mayor and City Council, Party of the First Part, or such other City official as shall be duly empowered to act for the City on matters relating to this Contract.

(b)"Contractor" shall mean the Party of the Second Part hereto, whether corporation, firm or individual, or any combination thereof, and its, their, or his successors, personal representatives, executors, administrators, and assigns, and any person, firm or corporation who or which shall at any time be substituted in the place of the Party of the Second Part under this Contract.

(c)"Engineer" shall mean the Director of the Department or his duly authorized representative.

(d)"Consultant" shall mean the engineering or architectural firm or individual employed by the City to consult with and advise the City in the construction of the project.

(e)"Surety" shall mean any person, firm or corporation that has executed as Surety the Contractor's Performance Bond securing the performance of this Contract.

(f)"The Work" shall mean everything expressly or implied required to be furnished and done by the Contractor under the Contract, and shall include both Contract Work

and Extra Work.

(g)"Contract Work" shall mean everything expressly or implied required to be furnished and done by the Contractor by any one or more of the Contract parts referred to in Article 1.01 hereof, except Extra Work, as hereinafter defined; it being understood that, in case of any inconsistency in or between any part or parts of this Contract, the Engineer shall determine which shall prevail.

(h)"Contract" or "Contract Documents" shall mean each of the various part of the Contract referred to in Article 1.01 hereof, both as a whole and severally.

(i)"Extra Work" shall mean work other than that required either expressly or implied by the contract in its present form.

(j)"Plans" shall mean only those drawings specifically referred to as such in these documents, or in any Addendum. Drawings issued after the execution of the Contract to explain further, or to illustrate, or to show changes in the work, will be known as "Supplementary Drawings" and shall be binding upon the Contractor with the same force as the Plans.

(k)"Specifications" shall mean all of the directions, requirements, and standards of performance applying to the work, as hereinafter detailed and designated as such, or which may be issued in an addendum.

(l)"Addendum or Addenda" shall mean the additional contract provisions issued in writing prior to the receipt of bids.

(m)"Notice" shall mean written notice. Notice shall be served upon the Contractor, either personally or by leaving the said notice at his residence or with any employee found on the work, or addressed to the Contractor at the residence or place of business given in his proposal and deposited in a postpaid wrapper in any post office box regularly maintained by the United States Post Office.

(n)"Project" shall mean the entire improvement package or related work. The "project" may consist of several different, but related, contracts.

(o)"Site" shall mean, and be limited to, the area upon or in which the Contractor's operations are carried on and such other appropriate areas as may be designed as such by the Engineer.

(p)"Subcontractor" shall mean any person, firm, or corporation, other than employees of the Contractor, who or which contracts with the Contractor to furnish, or actually furnishes labor, or labor and materials, or labor and equipment or labor, materials, and equipment at the site.

(q)Whenever in the Contract the words "directed", "required", "permitted", "ordered", "designated", "prescribed", and words of like import are used, they shall imply the direction, requirement, permission, order, designation, or prescription of the Engineer; and "approved", "acceptable", "satisfactory", "in the judgement of", and words of like import shall mean approved by, or acceptable to, or satisfactory to, or in the judgment of the Engineer.

(r)Whenever in the Contract the word "day" is used, it shall mean calendar day.

(s)"Final Acceptance" shall mean acceptance of the

work as evidenced by an official resolution of the City. Such acceptance shall be deemed to have taken place only if and when an approving resolution has been adopted by the City Council. The final acceptance shall be signed only after the City has assured itself by tests, inspection, or otherwise, that all of the provisions of the Contract have been carried out to its satisfaction.

(t)"Eastern Standard Time" shall be construed as the time being observed in the City on the day proposals are received or other documents issued or signed.

SECTION 2 POWERS OF THE CITY'S REPRESENTATIVES

ARTICLE 2.01 THE ENGINEER

It is covenanted and agreed that the Engineer, in addition to those matters elsewhere herein expressly made subject to his determination, direction, or approval, shall have the power, subject to such express provisions and limitations herein contained as are not in conflict herewith, and subject to review by the Mayor and City Council:

(a)To monitor the performance of the work.

(b)To determine the amount, kind, quality, sequence, and location of the work to be paid for hereunder and, when completed, to measure such work for payment.

(c)To determine all questions of an engineering character in relation to the work, to interpret the Plans, Specifications and Addenda.

(d)To determine how the work of this Contract shall be coordinated with the work of other contractors engaged simultaneously on this project.

(e)To make minor changes in the work as he deems necessary, provided such changes do not result in a net increase in the cost to the City or to the Contractor of the work to be done under the Contract.

(f)To amplify the Plans, add explanatory information and furnish additional Specifications and Drawings consistent with the intent of the Contract Documents.

The power of the Engineer shall not be limited to the foregoing enumeration, for it is the intent of this Contract that all of the work shall be subject to his determinations and approval, except where the determination or approval of someone other than the Engineer is expressly called for herein and except as subject to review by the Mayor and City Council. All orders of the Engineer requiring the Contractor to perform work as Contract work shall be promptly obeyed by the Contractor.

The Engineer shall not, however, have the power to issue an extra work order, and the performance of such work on the order of the Engineer without previously obtaining written confirmation thereof from the Mayor in accordance with Article 7.02 hereof may constitute a waiver of any right to extra compensation therefor. The Contractor is warned that the Engineer has no power to change the terms and provisions of this Contract, except minor changes where such change results in no net increase in the Contract Price.

ARTICLE 2.02 DIRECTOR

The Director of the Department in addition to those matters

expressly made subject to his determination, direction or approval in his capacity as "Engineer", shall also have the power:

(a)To review any and all questions in relation to this Contract and its performance, except as herein otherwise specifically provided, and his determination upon such review shall be final and conclusive upon the Contractor.

(b)With the approval of the Mayor and City Council to authorize modifications or changes in the Contract so as to require: (1) the performance of extra work, or (2) the omission of Contract work whenever he deems it in the interest of the City to do so, or both.

(c)To suspend the whole or any part of the work whenever, in his judgment, such suspension is required: (1) in the interest of the City generally, or (2) to coordinate the work of the various Contractors engaged on this project, or (3) to expedite the completion of the entire project, even though the completion of this particular Contract may be thereby delayed, without compensation to the Contractor for such suspension other than extending the time for the completion of the work, as much as it may have been, in the opinion of the City, delayed by such a suspension.

(d)If, before the final acceptance of all the work contemplated herein, it shall be deemed necessary to take over, use, occupy, or operate any part of the completed or partly completed work, the Engineer shall have the right to do so and the Contractor will not, in any way, interfere with or object to the use, occupation, or operation of such work by the City after receipt of notice in writing from the Engineer that such work or part thereof will be used by the City on and after the date specified in such notice. Such taking over, use, occupancy or operation of any part of the completed or partially completed work shall not constitute final acceptance or approval of any such part of the work.

ARTICLE 2.03 NO ESTOPPEL

The City shall not, nor shall any department, officer, agent, or employee thereof, be bound, precluded, or estopped by any determination, decision, acceptance, return, certificate, or payment made or given under or in connection with this Contract by any officer, agent or employee of the City at any time either before or after final completion and acceptance of the work and payment therefor: (a) from showing the true and correct classification, amount, quality, or character of the work done, or that any determination, decision, acceptance, return certificate or payment is untrue, incorrect or improperly made in any particular, or that the work or any part thereof does not in fact conform to the requirements of the Contract Documents, and (b) from demanding and recovering from the Contractor any overpayments made to him or such damages as it may sustain by reason his failure to comply with the requirements of the Contract of Documents, or both.

ARTICLE 2.04 NO WAIVER OF RIGHTS

Neither the inspection, nor any order, measurements or certificate of the City or its employees, officers, or agents, nor by any order of the City for payment of money, nor any money, nor payments for or acceptance of the whole or any part of the work by the City, nor any extension of time, nor any changes in the Contract, Specifications or Plans, nor any possession by the City or its employees shall operate as a

waiver of any provisions of this Contract, nor any power herein provided nor shall any waiver of any breach of this Contract be held as a waiver of any other subsequent breach.

Any remedy provided in this Contract shall be taken and construed as cumulative, namely, in addition to each and every other suit, action, or legal proceeding. The City shall be entitled as of right to an injunction against any breach of the provisions of this Contract.

SECTION 3 PERFORMANCE OF WORK

ARTICLE 3.01 CONTRACTOR'S RESPONSIBILITY

The Contractor shall do all the work and furnish, at his own cost and expense, all labor, materials, equipment, and other facilities, except as herein otherwise provided, as may be necessary and proper for performing and completing the work under this Contract. The Contractor shall be responsible for the entire work until completed and finally accepted by the City.

The work shall be performed in accordance with the true intent and meaning of the Contract Documents. Unless otherwise expressly provided, the work must be performed in accordance with the best modern practice, with materials as specified and workmanship of the highest quality, all as determined by and entirely to the satisfaction of the Engineer.

Unless otherwise expressly provided, the means and methods of construction shall be such as the Contractor may choose, subject, however, to the approval of the Engineer. Only adequate and safe procedure, methods, structures and equipment shall be used. The Engineer's approval or the Engineer's failure to exercise his right thereon shall not relieve the Contractor of obligations to accomplish the result intended by the Contract, nor shall such create a cause of action for damages.

ARTICLE 3.02 COMPLIANCE WITH LAWS

The Contractor must comply with all local, State and Federal laws, rules, ordinances and regulations applicable to this Contract and to the work done hereunder, and must obtain, at his own expense, all permits, licenses or other authorization necessary for the prosecution of the work.

No work shall be performed under this Contract on Sundays, legal holidays or after regular working hours without the express permission of the Engineer. Where such permission is granted, the Engineer may require that such work be performed without additional expense to the City.

ARTICLE 3.03 INSPECTION

During the progress of the work and up to the date of final acceptance, the Contractor shall, at all times, afford the representatives of the City, the Florida Department of Environmental Regulation, and if applicable, the Federal Environmental Protection Agency and the Federal Department of Labor every reasonable, safe and proper facility for inspecting the work done or being done at the

site. The inspection of any work shall not relieve the Contractor of any of his obligations to perform proper and satisfactory work as herein specified. Finished or unfinished work found not to be in strict accordance with the Contract shall be replaced as directed by the Engineer, even though such work may have been previously approved and payment made therefor.

The City shall have the right to reject materials and workmanship which are defective or require their correction. Rejected work and materials must be promptly removed from the site, which must at all times be kept in a reasonably clean and neat condition.

Failure or neglect on the part of the City to condemn or reject bad or inferior work or materials shall not be construed to imply an acceptance of such work or materials, if it becomes evident at any time prior to the final acceptance of the work by the City. Neither shall it be construed as barring the City at any subsequent time from the recovery of damages of such a sum of money as may be needed to build anew all portions of the work in which inferior work or improper materials were used, wherever found.

Should it be considered necessary or advisable by the City at any time before final acceptance of the entire work to make examinations of work already completed, by removing or tearing out all or portions of such work, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material for that purpose. If such work is found to be defective in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray all expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the cost of examination and restoration of the work shall be considered an item of extra work to be paid for in accordance with the provisions of Article 7.02 hereof.

ARTICLE 3.04 PROTECTION

During performance and until final acceptance, the Contractor shall be under an absolute obligation to protect the finished and unfinished work against any damage, loss, or injury. The Contractor shall take proper precaution to protect the finished work from loss or damage, pending completion and the final acceptance of all the work included in the entire Contract, provided that such precaution shall not relieve the Contractor from any and all liability and responsibility for loss or damage to the work occurring before final acceptance by the City. Such loss or damage shall be at the risk of and borne by the Contractor, whether arising from acts or omissions of the Contractor or others. In the event of any such loss or damage, the Contractor shall forthwith repair, replace, and make good the work without extension of time therefor, except as may be otherwise provided herein.

The provisions of this Article shall not be deemed to create any new right of action in favor of third parties against the Contractor or the City.

ARTICLE 3.05 PRESERVATION OF PROPERTY

The Contractor shall preserve from damage all property along the line of the work, or which is in the vicinity of or is in anywise affected by the work, the removal or destruction of which is not called for by the Plans. This applies, but is not limited, to the public utilities, trees, lawn areas, building monuments, fences, pipe and underground structures, public streets (except natural wear and tear of streets resulting from legitimate use thereof by the Contractor), and wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor and at his own expense.

In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the City may, upon forty-eight (48) hour written notice, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract. Nothing in this clause shall prevent the Contractor from receiving proper compensation for the removal, damage, or replacement of any public or private property not shown on the Plans, when this is made necessary by alteration of grade or alignment authorized by the Engineer, provided that such property has not been damaged through fault of the Contractor, his employees or agents.

ARTICLE 3.06 BOUNDARIES

The Contractor shall confine his equipment, apparatus, the storage of materials, supplies and apparatus of his workmen to the limits indicated on the plans, by law, ordinances, permits or direction of the Engineer.

ARTICLE 3.07 SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91- 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL91-54).

ARTICLE 3.08 TAXES

All taxes of any kind and character payable on account of the work done and materials furnished under this Contract shall be paid by the Contractor and shall be deemed to have been included in his bid. The laws of the State of Florida provide that sales and use taxes are payable by the Contractor upon the tangible personal property incorporated in the work and such taxes shall be paid by the Contractor and shall be deemed to have been included in his bid.

ARTICLE 3.09 ENVIRONMENTAL CONSIDERATIONS

The Contractor, in the performance of the work under this Contract, shall comply with all Local, State and Federal laws, statutes, ordinances, rules and regulations applicable to protection of the environment; and, in the event he violates any of the provisions of same, he shall be answerable to the Local, State and Federal agencies designated by law to protect the environment. In the event the City receives, from any of the environmental agencies, a citation which is occasioned by an act or omission of the Contractor or his

subcontractor or any officers, employees or agents of either, it is understood and agreed that the Contractor shall automatically become a party-respondent under said citation; and the City immediately shall notify the Contractor and provide him with a copy of said citation.

The Contractor shall comply with the requirements of the citation and correct the offending condition(s) within the time stated in said citation and further shall be held fully responsible for all fines and/or penalties.

SECTION 4 TIME PROVISIONS

ARTICLE 4.01 TIME OF START AND COMPLETION

The Contractor must commence work within thirty (30) days subsequent to the date of the receipt of the "Notice to Proceed" by the City unless otherwise provided in the Specific Provisions and Special Instructions. Time being of the essence of this Contract, the Contractor shall thereafter prosecute the work diligently, using such means and methods of construction as well as secure its full completion in accordance with the requirements of the Contract Documents no later than the date specified therefor, or on the date to which the time for completion may be extended.

The Contractor must complete the work covered by this Contract in the number of consecutive calendar days set forth in the Instructions to Bidders, unless the date of completion is extended pursuant to the provisions of Article 4.05 hereof. The period for performance shall start from the date of signing of this Agreement by the City.

The actual date of completion will be established after a final inspection as provided in Article 4.07 hereof.

ARTICLE 4.02 PROGRESS SCHEDULE

To enable the work to be laid out and prosecuted in an orderly and expeditious manner, the Contractor shall submit to the Engineer a proposed progress schedule within fifteen (15) days after the award of this Contract.

The schedule shall state the Contract starting date, time for completion and date of completion and shall show the anticipated time of starting and completion of each of the various operations to be performed under this Contract, together with all necessary and appropriate information regarding sequence and correlation of work and an estimated time required for the delivery of all materials and equipment required for the work. The proposed schedule shall be revised as directed by the Engineer until finally approved by him, and, after such approval, shall be strictly adhered to by the Contractor. The approved progress schedule may be changed only with the written permission of the Engineer.

If the Contractor shall fail to adhere to the approved progress schedule or the schedule as revised, he shall promptly adopt such other or additional means and methods of construction as will make up for the time lost, and will assure completion in accordance with the contract time.

ARTICLE 4.03 APPROVAL REQUESTS

From time to time, as the work progresses and in the sequence indicated by the approved schedule, the Contractor must submit to the Engineer a specific request, in writing, for each item of information or approval required of him by the Contract. These requests must be submitted sufficiently in advance of the date upon which the information or approval is actually required by the Contractor to allow for the time the Engineer may take to act upon such submissions or resubmissions. The Contractor shall not have any right to an extension of time on account of delays due to his failure to submit his requests for the required information or the required approval in accordance with these requirements.

ARTICLE 4.04 COORDINATION WITH OTHER CONTRACTORS

During progress of the work, other Contractors may be engaged in performing other work on this project or on other projects on the site. In that event, the Contractor shall coordinate the work to be done hereunder with the work of such other Contractors in such manner as the Engineer may direct.

ARTICLE 4.05 EXTENSION OF TIME

If such an application is made, the Contractor shall be entitled to an extension of time for delay in completion of the work should the Contractor be obstructed or delayed in the commencement, prosecution or completion of any part of said work by any act or delay of the City, or by acts or omissions of other Contractors on this project, or by a riot, insurrection, war, pestilence, acts of public authorities, fire, lightning, hurricanes, earthquakes, tornadoes, floods, extremely abnormal and excessive inclement weather as indicated by the records of the local weather bureau for a five-year period preceding the date of the Contract, or by strikes, or other causes, which causes of delay mentioned in this Article, in the opinion of the City, are entirely beyond the expectation and control of the Contractor.

The Contractor shall, however, be entitled to an extension of time for such causes only for the number of days of delay which the City may determine to be due solely to such causes and only to the extent that such occurrences actually delay the completion of the project and then only if the Contractor shall have strictly complied with all of the requirements of Articles 4.01, 4.02, 4.03 and 4.04 hereof. It is hereby understood that the determination by the Engineer as to the order and sequence of the work shall not in itself constitute a basis for extension of time.

The determination made by the City on an application for an extension of time shall be binding and conclusive on the Contractor.

Delays caused by failure of the Contractor's materialmen, manufacturers, and dealers to furnish approved working drawings, materials, fixtures, equipment, appliances, or other fittings on time or failure of subcontractors to perform their work shall not constitute a basis of extension of time.

The Contractor agrees to make no claim for damages for delay in the performance of this Contract occasioned by any

act or omission to act of the City or any of its representatives or because of any injunction which may be brought against the City or its representatives and agrees that any such claim shall be fully compensated for by an extension of time to complete performance of the work as provided herein.

ARTICLE 4.06 LIQUIDATED DAMAGES

It is mutually agreed between the parties that time is the essence of this Contract and that there will be on the part of the City considerable monetary damage in the event the Contractor should fail to complete the work within the time fixed for completion in the Contract or within the time to which such completion may have been extended.

The amount per day set forth in the Instructions to Bidders is hereby agreed upon as the liquidated damages for each and every calendar day that the time consumed in completing the work under this Contract exceeds the time allowed.

This amount shall, in no event, be considered as a penalty or otherwise than as the liquidated and adjusted damages to the City because of the delay and the Contractor and his Surety agree that the stated sum per day for each such day of delay shall be deducted and retained out of the monies which may become due hereunder and if not so deductible, the Contractor and his Surety shall be liable therefor.

ARTICLE 4.07 FINAL INSPECTION

When the work has been completed in accordance with the requirements of the Contract and final cleaning up performed, a date for final inspection of the work by the Engineer shall be set by the Contractor in a written request therefor, which date shall be not less than ten (10) days after the date of such request. The work will be deemed complete as of the date so set by the Contractor if, upon such inspection, the Engineer determines that no further work remains to be done at the site.

If such inspection reveals items of work still to be performed, however, the Contractor shall promptly perform them and then request a reinspection. If, upon such inspection, the Engineer determines that the work is complete, the date of final completion shall be deemed to be the last day of such reinspection.

SECTION 5 SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 5.01 LIMITATIONS AND CONSENT

The Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract or of his right, title, or interest therein, or his power to execute such Contract, or to assign any monies due or to become due thereunder to any other person, firm or corporation unless the previous written consent of the City shall first be obtained thereto and the giving of any such consent to a particular subcontract or assignment shall not dispense with the necessity of such consent to any further or other assignment.

Before making any subcontract, the Contractor must submit a

written statement to the Engineer, giving the name and address of the proposed contractor, the portion of the work and materials which he is to perform and furnish and any other information tending to prove that the proposed subcontractor has the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and conditions of this Contract.

If the City finds that the proposed subcontractor is qualified, the Contractor will be notified in writing. The City may revoke approval of any subcontractor when such subcontractor evidences an unwillingness or inability to perform his work in strict accordance with these Contract Documents. Notice of such revocation of approval will be given in writing to the Contractor.

The Contractor will promptly, upon request, file with the City a conformed copy of the subcontract. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of these Contract Documents, insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontracts that the City may exercise over the Contractor under provisions of these Contract Documents.

The Contractor shall be required to perform with his own forces at least twenty-five (25) percent of the work, unless written consent to subcontract a greater percentage of the work is first obtained from the City.

ARTICLE 5.02 RESPONSIBILITY

The approval by the City of a subcontractor shall not relieve the Contractor of any of his responsibilities, duties, and liabilities hereunder. The Contractor shall be solely responsible to the City for the acts or defaults or omissions of his subcontractor and of such subcontractor's officers, agents, and employees, each of whom shall for all purposes be deemed to be the agent or employee of the Contractor. Nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and the City.

SECTION 6 SECURITY AND GUARANTY

ARTICLE 6.01 CONTRACT SECURITY

The Contractor shall execute and deliver to the City a Performance Bond on the form as provided herein, in an amount at least equal to one hundred (100) percent of the full Contract price, such Bond to be executed by a surety company acceptable to the City. The surety on such Performance Bond shall be a surety company duly authorized to do business in the State of Florida, and the Bond shall be issued or countersigned by a local resident producing agent of such surety company who is a resident of the State of Florida, regularly commissioned and licensed in said State, and satisfactory evidence of the authority of the person or persons executing such Bond shall be submitted with the Bond. The Performance Bond shall serve as security for the faithful performance of this Contract, including

maintenance and guaranty provisions, and for the payment of all persons performing labor and furnishing materials in connection with the Contract. The premiums on the Performance Bond shall be paid by the Contractor.

If, at any time, the City shall become dissatisfied with any surety or sureties then upon the Performance Bond, or if for any other reason such bond shall cease to be adequate security for the City, the Contractor shall, within five days after notice so to do, substitute an acceptable Bond in such form and sum and signed by such other sureties as may be satisfactory to the City. The premiums on such Bond shall be paid by the Contractor. No further partial payments shall be deemed due or shall be made until the new sureties have qualified.

ARTICLE 6.02 CONTRACTORS INSURANCE

Insurance required shall be as indicated on Special Instructions pages beginning with "INS-1"

ARTICLE 6.03 AGAINST CLAIMS AND LIENS

The City may withhold from the Contractor as much as any approved payments to him as may, in the opinion of the City, be necessary to secure (a) just claims of any persons supplying labor or materials to the Contractor or any of his subcontractors for the work then due and unpaid; (b) loss due to defective work not remedied, or (c) liability, damage, or loss due to injury to persons or damages to the work or property of other contractors, subcontractors, or others, caused by the act or neglect of the Contractor or of any of his subcontractors. The City shall have the right, as agent for the Contractor, to apply any such amounts so withheld in such manner as the City may deem proper to satisfy such claims or to secure such protection. Such application of such money shall be deemed payments for the account of the Contractor.

ARTICLE 6.04 MAINTENANCE AND GUARANTY

The Contractor hereby guarantees all the work furnished under this Contract against any defects in workmanship and materials for a period of one year following the date of final acceptance of the work by the City. Under this guarantee, the Contractor hereby agrees to make good, without delay, at his own expense, any failure of any part of the work due to faulty materials or manufacture, construction, or installation, or the failure of any equipment to perform satisfactorily all the work put upon it within the limits of the Contract Documents, and further, shall make good any damage to any part of the work caused by such failure. It is hereby agreed that the Performance Bond shall fully cover all guarantees contained in this Article.

It is also agreed that all warranties, expressed or implied, inure to the benefit of the City and are enforceable by the City.

SECTION 7 CHANGES

ARTICLE 7.01 MINOR CHANGES

The City reserves the right to make such additions, deductions, or changes to this Contract from time to time as

it deems necessary and in a manner not materially affecting the substance thereof or materially changing the price to be paid in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed. This Contract shall in no way be invalidated by any such additions, deductions, or changes, and no claim by the Contractor shall be made for any loss of anticipated profits thereby.

Construction conditions may require that minor changes be made in the location and installation of the work and equipment to be furnished and other work to be performed hereunder, and the Contractor when ordered by the Engineer, shall make such adjustments and changes in said locations and work as may be necessary, without additional cost to the City, provided such adjustments and changes do not alter the character, quantity of cost of the work as a whole, and provided further that Plans and Specifications showing such adjustments and changes are furnished to the Contractor by the City within a reasonable time before any work involving such adjustment and changes is begun. The Engineer shall be the sole judge of what constitutes a minor change for which no additional compensation shall be allowed.

ARTICLE 7.02 EXTRA WORK

The City may at any time by a written order and without notice to the sureties require the performance of such extra work as it may find necessary or desirable. An order for extra work shall be valid only if issued in writing and signed by the Mayor and the work so ordered must be performed by the Contractor.

The amount of compensation to be paid to the Contractor for any extra work as so ordered shall be determined as follows:

(a) By such applicable unit prices, if any, as are set forth in the Proposal; or

(b) If no such unit prices are set forth then by a lump sum or other unit prices mutually agreed upon by the City and the Contractor; or

(c) If no such unit prices are set forth in the Proposal and if the parties cannot agree upon a lump sum or other unit prices then by the actual net cost in money to the Contractor of the extra work performed, which cost shall be determined as follows:

(1) For all labor and foreman in direct charge of the authorized operations, the Contractor shall receive the current local rate of wages to be agreed upon, in writing, before starting such work for each hour that said labor and foremen are actually engaged thereon, to which shall be added an amount equal to 25 percent of the sum thereof which shall be considered and accepted as full compensation for general supervision, FICA taxes, contributions under the Florida Unemployment Compensation Act, insurance, bond, subcontractor's profit and overhead, the furnishing of small tools and miscellaneous equipment used, such as picks, shovels, hand pumps, and similar items.

(2) For all materials used, the Contractor shall receive the actual cost of such materials delivered at the site or previously approved delivery point as established by original receipted bills. No percentage shall be added to this cost.

(3) For special equipment and machinery such as power-driven pumps, concrete mixers, trucks, and tractors, or other equipment, required for the economical performance of the authorized work, the Contractor shall receive payment based on the average local area rental price for each item of equipment and the actual time of its use on the work. No percentage shall be added to this sum.

(4) Records of extra work done under this procedure shall be reviewed at the end of each day by the Contractor or his representative and the Engineer. Duplicate copies of accepted records shall be made and signed by both Contractor or his representative and the Engineer, and one copy retained by each.

Request for payment for approved and duly authorized extra work shall be submitted in the same form as Contract work or in the case of work performed under paragraph (c) (1) above upon a certified statement supported by receipted bills. Such statement shall be submitted for the current Contract payment for the month in which the work was done.

ARTICLE 7.03 DISPUTED WORK

If the Contractor is of the opinion that any work required, necessitated, or ordered violates the terms and provisions of this Contract, he must promptly notify the Engineer, in writing, of his contentions with respect thereto and request a final determination thereof. If the Engineer determines that the work in question is Contract work and not extra work or that the order complained of is proper, he will direct the Contractor to proceed and the Contractor shall promptly comply. In order, however, to reserve his right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within five (5) days after receiving notice of the Engineer's determination and direction, notify the City in writing that the work is being performed or that the determination and direction is being complied with under protest. Failure of the Contractor to notify shall be deemed as a waiver of claim for extra compensation or damages therefor.

Before final acceptance by the City, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto. Final determinations and decisions, in case any questions shall arise, shall constitute a condition precedent to the right of the Contractor to receive the money therefor until the matter in question has been adjusted.

ARTICLE 7.04 OMITTED WORK

The City may at any time by a written order and without notice to the sureties require the omission of such Contract work as it may find necessary or desirable.

An order for omission of work shall be valid only if signed by the Mayor and the work so ordered must be omitted by the Contractor. The amount by which the Contract price shall be reduced shall be determined as follows:

(a) By such applicable unit prices, if any, as are set forth in the Contract; or

(b) By the appropriate lump sum price set forth in the Contract; or

(c) By the fair and reasonable estimated cost to the City

of such omitted work as determined by the Engineer and approved by the City.

SECTION 8 CONTRACTOR'S EMPLOYEES

ARTICLE 8.01 CHARACTER AND COMPETENCY

The Contractor and his subcontractors shall employ upon all parts of the work herein contracted for only competent, skillful, and trustworthy workers. Should the Engineer at any time give notice, in writing, to the Contractor or his duly authorized representative on the work that any employee in his opinion is incompetent, unfaithful, disorderly, careless, unobservant of instructions, or in any way a detriment to the satisfactory progress of the work, such employee shall immediately be dismissed and not again allowed upon the site.

ARTICLE 8.02 SUPERINTENDENCE

The Contractor shall give his personal supervision to the faithful prosecution of the work and in case of his absence shall have a competent, experienced, and reliable supervisor or superintendent, acceptable to the Engineer on the site who shall follow without delay all instructions of the Engineer in the prosecution and completion of the work and every part thereof, in full authority to supply workers, material, and equipment immediately. He shall keep on hand at all times copies of the Contract Documents.

ARTICLE 8.03 EMPLOYMENT OPPORTUNITIES

The Contractor shall, in the performance of the work required to be done under this Contract, employ all workers without discrimination regarding race, creed, color, sex or national origin and must not maintain or provide facilities that are segregated on the basis of race, color, creed or national origin.

ARTICLE 8.04 RATES OF WAGES

On federally assisted projects, the rates of wages to be paid under this Contract shall not be less than the rates of wages set forth in Section 12 of this Agreement.

On other projects, no wage rate determination is included. Florida's Prevailing Wage Law (Section 215.19, Florida Statutes) was repealed effective April 25, 1979.

ARTICLE 8.05 PAYROLL REPORTS

The Contractor and each subcontractor shall, if requested to do so, furnish to the Engineer a duly certified copy of his payroll and also any other information required by the Engineer to satisfy him that the provisions of the law as to the hours of employment and rate of wages are being observed.

Payrolls shall be prepared in accordance with instructions furnished by the City and on approved forms. The Contractor shall not carry on his payroll any persons not employed by him. Subcontractor's employees shall be carried only on the payrolls of the employing subcontractor.

SECTION 9 CONTRACTOR'S DEFAULT

ARTICLE 9.01 CITY'S RIGHT AND NOTICE

It is mutually agreed that: (a) if the Contractor fails to begin work when required to do so, or (b) if at any time during the progress of the work it shall appear to the Engineer that the Contractor is not prosecuting the work with reasonable speed, or is delaying the work unreasonably and unnecessarily, or (c) if the force of workmen or quality or quantity of material furnished are not sufficient to insure completion of the work within the specified time and in accordance with the Specifications hereto attached, or (d) if the Contractor shall fail to make prompt payments for materials or labor or to subcontractors for work performed under the Contract, or (e) if legal proceedings have been instituted by others than the City in such manner as to interfere with the progress of the work and may subject the City to peril of litigation or outside claims of (f) if the Contractor shall be adjudged a bankrupt or make an assignment for the benefit of creditors, or (g) if in any proceeding instituted by or against the Contractor an order shall be made or entered granting an extension of time of payment, composition, adjustment, modification, settlement or satisfaction of his debts or liabilities, or (h) if a receiver or trustee shall be appointed for the Contractor or the Contractor's property, or (i) if the Contract or any part thereof shall be sublet without the consent of the City being first obtained in writing, or (j) if this Contract or any right, monies, or claim thereunder shall be assigned by the Contractor, otherwise than as herein specified, or (k) if the Contractor shall fail in any manner of substance to observe the provisions of this Contract, or (l) if any of the work, machinery, or equipment shall be defective, and shall not be replaced as herein provided, or (m) if the work to be done under this Contract shall be abandoned, then such fact or conditions shall be certified by the Engineer and thereupon the City without prejudice to any other rights or remedies of the City, shall have the right to declare the Contractor in default and so notify the Contractor by a written notice, setting forth the ground or grounds upon which such default is declared and the Contractor must discontinue the work, either as a portion of the work or the whole thereof, as directed.

ARTICLE 9.02 CONTRACTOR'S DUTY UPON DEFAULT

Upon receipt of notice that his Contract is in default, the Contractor shall immediately discontinue all further operations on the work or such part thereof, and shall immediately quit the site or such part thereof, leaving untouched all plant, materials, equipment, tools, and supplies.

ARTICLE 9.03 COMPLETION OF DEFAULTED WORK

The City, after declaring the Contractor in default, may then have the work completed or the defective equipment or machinery replaced or anything else done to complete the work in strict accordance with the Contract Documents by such means and in such manner, by Contract with or without public letting, or otherwise, as it may deem advisable,

utilizing for such purpose without additional cost to the City such of the Contractor's plant, materials, equipment, tools, and supplies remaining on the site, and also such subcontractors as it may deem advisable.

The City shall reimburse all parties, including itself, for the expense of such completion, including liquidated damages, if any, and the cost of reletting. The City shall deduct this expense from monies due or to become due to the Contractor under this Contract, or any part thereof, and in case such expense is more than the sum remaining unpaid of the original contract price, the Contractor and his sureties shall pay the amount of such deficiency to the City.

ARTICLE 9.04 PARTIAL DEFAULT

In case the City shall declare the Contractor in default as to a part of the work only, the Contractor shall discontinue such part, shall continue performing the remainder of the work in strict conformity with the terms of the Contract, and shall in no way hinder or interfere with any other contractor or person whom the City may engage to complete the work as to which the Contractor was declared in default.

SECTION 10 PAYMENTS

ARTICLE 10.01 PRICES

For the Contractor's complete performance of the work, the City will pay and the Contractor agrees to accept, subject to the terms and conditions hereof, the lump sum prices or unit prices in the Contractor's Proposal and the award made therein, plus the amount required to be paid for any extra work ordered under Article 7.02 hereof, less credit for any work omitted pursuant to Article 7.04 hereof. Under unit price items, the number of units actually required to complete the work under the Contract may be more than stated in the Proposal. The Contractor agrees that no claim will be made for any damages or for loss of profits because of a difference between the quantities of the various classes of work assumed and stated in the Proposal Form as a basis for comparing Proposals and the quantities of work actually performed.

The sum as awarded for any lump sum Contract or lump sum Contract Item shall represent payment in full for all of the various classes of work, including materials, equipment, and labor necessary or required to complete, in conformity with the Contract Document, the entire work shown, indicated or specified under the lump sum Contract or lump sum Contract Item.

The amount as awarded as a unit price for any unit price Contract Item shall represent payment in full for all the materials, equipment, and labor necessary to complete, in conformity with the Contract Documents, each unit of work shown, specified, or required under the said unit price Contract Item.

No payment other than the amount as awarded will be made for any class of work included in a lump sum Contract Item or a unit price Contract Item, unless specific provision is

made therefor in the Contract Documents.

ARTICLE 10.02 SUBMISSION OF BID BREAKDOWN

Within fifteen (15) days after the execution of this Contract, the Contractor must submit to the Engineer in duplicate an acceptable breakdown of the lump sums and unit prices bid for items of the Contract, showing the various operations to be performed under the Contract, as described in the progress schedule required under Article 4.02 hereof, and the value of each of such operations, the total of such items to equal the total price bid. The Contractor shall also submit such other information relating to the bid prices as may be required and shall revise the bid breakdown as directed. Thereafter, the breakdown may be used for checking the Contractor's applications for partial payments hereunder but shall not be binding upon the City or the Engineer for any purpose whatsoever.

ARTICLE 10.03 REPORTS, RECORDS AND DATA

The Contractor shall furnish to the Engineer such schedules of quantities and costs, progress schedules, reports, invoices, delivery tickets, estimates, records, and other data as the Engineer may request concerning work performed or to be performed and the materials furnished under the Contract.

ARTICLE 10.04 PAYMENTS BY CONTRACTOR

The Contractor shall pay (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered, (b) for all materials, tools, and equipment delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which such materials, tools, and equipment are incorporated or used, and (c) to each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors, to the extent of each subcontractor's interest therein; and proof of such payments or releases therefor shall be submitted to the Engineer upon request.

ARTICLE 10.05 PARTIAL PAYMENTS

On or about the first of each month, the Contractor shall make and certify an estimate, on forms prescribed by the City, of the amount and fair value of the work done, and may apply for partial payment therefor. The Contractor shall revise the estimate as the Engineer may direct. When satisfactory progress has been made, and shows that the value of the work completed since the last payment exceeds one percent (1%) of the total Contract price in amount, the Engineer will issue a certificate that such work has been completed and the value thereof. The City will then issue a voucher to the Contractor in accordance with the following schedule:

FOR CONTRACT AMOUNTS UNDER \$250,000

(A) In the amount of ninety percent (90%) of the value of the work completed as certified until construction is one hundred percent (100%) complete (operational or beneficial occupancy), the withheld amount may be reduced below ten percent (10%), at the Engineer's option, to only that amount necessary to assure completion.

FOR CONTRACT AMOUNTS OVER \$250,000

(A) In the amount of ninety percent (90%) of the value of the work completed as certified until construction is fifty percent (50%) complete.

(B) When the dollar value, as determined by the Engineer, of satisfactorily completed work in place is greater than fifty percent (50%) of the original contract price, vouchers for partial payment will be issued by the City to the Contractor in the amount of one hundred percent (100%) of the value of the work, above 50%, completed as certified for that payment period.

(C) If the Contractor has performed satisfactorily and the work is substantially complete (operational or beneficial occupancy) the withheld amount may be reduced, at the Engineer's option, to only that amount necessary to assure completion.

In addition to the Conditions set forth in (A), (B), and (C) above, payments will always be less any sums that may be retained or deducted by the City under the terms of any of the contract documents and less any sums that may be retained to cover monetary guarantees for equipment, materials or progress performance.

Payment on estimates made on or about the first of the month may be expected on or about the 20th of the month.

Unless specified otherwise in the Contract Items, the delivered cost of equipment and nonperishable materials suitably stored at the site of the work and tested for adequacy may be included in the Contractor's application for partial payment provided, however, that the Contractor shall furnish evidence satisfactory to the City that the Contractor is the unconditional owner and in possession of such materials or equipment. The amount to be paid will be 90 percent of the invoice cost to the Contractor which cost shall be supported by receipted bills within 30 days of the date of payment by the City to the Contractor. Such payment shall not relieve the Contractor from full responsibility for completion of the work and for protection of such materials and equipment until incorporated in the work in a permanent manner as required by the Contract Documents.

Before any payment will be made under this Contract, the Contractor and every subcontractor, if required, shall deliver to the Engineer a written, verified statement, in satisfactory form, showing in detail all amounts then due and unpaid by such Contractor or subcontractor to all laborers, workmen, and mechanics, employed by him under the Contract for the performance of the work at the site thereof, for daily or weekly wages, or to other persons for materials, equipment, or supplies delivered at the site of the work during the period covered by the payment under consideration.

ARTICLE 10.06 FINAL PAYMENT

Under determination of satisfactory completion of the work under this Contract as provided in Article 4.07 hereof, the Engineer will prepare the final estimate showing the value of the completed work. This estimate will be prepared within 30 days after the date of completion or as soon thereafter as the necessary measurements and computations can be made.

All prior certificates and estimates, being approximate only, are subject to correction in the final estimate and payment.

When the final estimate has been prepared and certified by Engineer, he will submit to the Mayor and City Council the final certificate stating that the work has been completed and the amount based on the final estimate remaining due to the Contractor. The City will then accept the work as fully completed and will, not later than 30 days after the final acceptance, as defined in Article 1.02, of the work done under this Contract, pay the Contractor the entire amount so found due thereunder after deduction of all previous payments and all percentages and amounts to be kept and retained under provisions of this Contract; provided, however, and it is understood and agreed that, as a precedent to receiving final payment, the Contractor shall submit to the City a sworn affidavit that all bills for labor, service, materials, and subcontractors have been paid and that there are no suits pending in connection with this work. The City, at its option, may permit the Contractor to execute a separate surety bond in a form satisfactory to the City. The surety bond shall be in the full amount of the suit or suits.

Neither the final payment nor any part of the retained percentage shall be paid until the Contractor, if required, shall furnish the City with a complete release from any should remain unsatisfied after all payments are made, the Contractor shall refund to the City all monies which the City may be compelled to pay in discharging such claim, including incidental costs and attorney's fees.

ARTICLE 10.07 ACCEPTANCE OF FINAL PAYMENT

The acceptance by the Contractor, or by anyone claiming by or through him, of the final payment shall operate as and shall be a release to the City and every officer and agent thereof from any and all claims and liability to the Contractor for anything done or furnished in connection with the work or project and for any act or neglect of the Contractor or of any others relating to or affecting the work. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance Bond.

SECTION 11 MISCELLANEOUS PROVISIONS

ARTICLE 11.01 CONTRACTOR'S WARRANTIES

In consideration of, and to induce the award of this contract to him, the Contractor represents and warrants:

(a) That he is not in arrears to the City upon debt or contract, and he is not a defaulter, as surety, contractor, or otherwise.

(b) That he is financially solvent and sufficiently experienced and competent to perform the work.

(c) That the work can be performed as called for by the Contract Documents.

(d) That the facts stated in his proposal and the information given by him are true and correct in all respects.

(e) That he is fully informed regarding all the conditions affecting the work to be done and labor and materials to be

furnished for the completion of this Contract, and that his information was secured by personal investigation and research.

ARTICLE 11.02 PATENTED DEVICES, MATERIAL AND PROCESSES

It is mutually understood and agreed that Contract prices include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. Whenever the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall indemnify and save harmless the City, its officers, agents and employees from any and all claims for infringement by reason of the use of any such patented design, device, tool, material, equipment, or process, to be performed under the Contract, and shall indemnify the said City, its officers, agents, and employees for any costs, expenses, and damages which may be incurred by reason of such infringement at any time during the prosecution or after completion of the work.

ARTICLE 11.03 SUITS AT LAW

In case any action at law or suit in equity may or shall be brought against the City or any of its officers, agents, or employees for or on account of the failure, omission, or neglect of the Contractor or his subcontractors, employees, or agents, to do or perform any of the covenants, acts, matters, or things by this Contract undertaken to be done or performed by the Contractor or his subcontractors, employees, or agents, or from any injuries done to property or persons and caused by the negligence or alleged negligence of the Contractor or his subcontractors, employees, or agents, or in any other manner arising out of the performance of this Contract, then the Contractor shall immediately assume and take charge of the defense of such actions or suits in like manner and to all intents and purposes as if said actions or suits have been brought directly against the Contractor, and the Contractor shall also indemnify and save harmless the City, its officers, agents, and employees from any and all loss, cost or damage whatever arising out of such actions or suits, in like manner and to all intents and purposes as if said actions or suits have been brought directly against the Contractor.

The Contractor shall and does hereby assume all liability for and agrees to indemnify the City or its Engineer against any or all loss, costs, damages, and liability for any or by reason of any lien, claims or demands, either for materials purchased or for work performed by laborers, mechanics, and others and from any damages, costs, actions, or causes of action and judgement arising from injuries sustained by mechanics, laborers, or other persons by reason of accidents or otherwise, whether caused by the carelessness or inefficiency or neglect of said Contractor, his subcontractors, agents, employees, workmen or otherwise.

ARTICLE 11.04 CLAIMS FOR DAMAGES

If the Contractor shall claim compensation for any damage sustained, other than for extra or disputed work covered by Article 7.02 and 7.03 hereof, by reason of any act or omission of the City, its agents, or any persons, he shall, within five days after sustaining such damage, make and

deliver to the Engineer a written statement of the nature of the damage sustained and of the basis of the claim against the City. On or before the 15th of the month succeeding that in which any damage shall have been sustained, the Contractor shall make and deliver to the Engineer an itemized statement of the details and amounts of such damage, duly verified by the Contractor. Unless such statements shall be made delivered within the times aforesaid, it is stipulated that and all claims for such compensation shall be forfeited and invalidated, and the Contractor shall not be entitled to payment on account of such claims.

ARTICLE 11.05 NO CLAIMS AGAINST INDIVIDUALS

No claim whatsoever shall be made by the Contractor against any officer, agent, employee of the City for, or on account of, anything done or omitted to be done in connection with this Contract.

ARTICLE 11.06 LIABILITY UNAFFECTED

Nothing herein contained shall in any manner create any liability against the City on behalf of any claim for labor, services, or materials, or of subcontractors, and nothing herein contained shall affect the liability of the Contractor or his sureties to the City or to any workmen or materialsmen upon bond given in connection with this Contract.

ARTICLE 11.07 INDEMNIFICATION PROVISIONS

Whenever there appears in this Agreement, or in the other Contract Documents made a part hereof, an indemnification provision within the purview of Chapter 725.06, Laws of Florida, the monetary limitation on the extent of the indemnification under each such provision shall be One Million Dollars or a sum equal to the total Contract price, whichever shall be the greater.

ARTICLE 11.08 UNLAWFUL PROVISIONS DEEMED STRICKEN

If this contract contains any unlawful provisions not an essential part of the Contract and which shall not appear to have a controlling or material inducement to the making thereof, such provisions shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the Contract without affecting the binding force of the remainder.

ARTICLE 11.09 LEGAL PROVISIONS DEEMED INCLUDED

Each and every provision of any law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein and if, through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon application of either party the Contract shall forthwith be physically amended to make such insertion.

ARTICLE 11.10 DEATH OR INCOMPETENCY OF CONTRACTOR

In the event of death or legal incompetency of a Contractor who shall be an individual or surviving member of a contracting firm, such death or adjudication of incompetency

shall not terminate the Contract, but shall act as default hereunder to the effect provided in Article 9.01 hereof and the estate of the Contractor and his surety shall remain liable hereunder to the same extent as though the Contractor had lived. Notice of default, as provided in Article 9.01 hereof, shall not be required to be given in the event of such death or adjudication of incompetency.

ARTICLE 11.11 NUMBER AND GENDER OF WORDS

Whenever the context so admits or requires, all references herein in one number shall be deemed extended to and including the other number, whether singular or plural, and the use of any gender shall be applicable to all genders.

ARTICLE 11.12 ACCESS TO RECORDS

Representatives of Federal Agencies, if applicable, and the State of Florida shall have access to the work whenever it is in preparation of progress. On federally assisted projects the Federal Agency, the Comptroller General of the United States, or any authorized representative shall have access to any books, documents, papers, and records of the Contractor which are pertinent to the project for the purpose of making audit, examination, excerpts, and transcription thereof.

SECTION 12 LABOR STANDARDS

ARTICLE 12.01 LABOR STANDARDS

The Contractor shall comply with all of the regulations set forth in "Labor Standards Provisions for Federally Assisted Construction Contracts", which may be attached, and any applicable Florida Statutes.

ARTICLE 12.02 NOTICE TO LABOR UNIONS

If required, the Contractor shall provide Labor Unions and other organizations of workers, and shall post, in a conspicuous place available to employees or applicants for employment, a completed copy of the form entitled "Notice to Labor Unions or Other Organizations of Workers" attached to and made a part of this Agreement.

ARTICLE 12.03 SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91- 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54). Nothing in these Acts shall be construed to supersede or in any manner affect any worker's compensation law or statutory rights, duties, or liabilities of employers and employees under any law with respect to injuries, diseases, or death of employees arising out of, or in the course of, employment.

ARTICLE 12.04 EEO AFFIRMATIVE ACTION REQUIREMENTS

The Contractor understands and agrees to be bound by the equal opportunity requirements of Federal regulations which shall be applicable throughout the performance of work under this Contract. The Contractor also agrees to similarly

bind contractually each subcontractor. In policies, the Contractor agrees to engage in Affirmative Action directed at promoting and ensuring equal employment opportunity in the work force used under the Contract (and the Contractor agrees to require contractually the same effort of all subcontractors whose subcontractors exceed \$100,000). The Contractor understands and agrees that "Affirmative Action" as used herein shall constitute a good faith effort to achieve and maintain minority employment in each trade in the on-site work force used on the Contract.

ARTICLE 12.05 PREVAILING RATES OF WAGES

Florida's prevailing wage law was repealed effective April 25, 1979.

For Federally assisted projects, appropriate prevailing wage rate determinations are indicated on pages beginning with WR-1.

* * * * *

TAMPA
AGREEMENT

IN WITNESS THEREOF, the parties have hereunto set their hands and seals, and such of them as are corporation have caused these present to be signed by their duly authorized officers.

CITY OF TAMPA, FLORIDA

Bob Buckhorn, Mayor
(SEAL)

ATTEST:

City Clerk

Approved as to Form:

The execution of this document was authorized
by Resolution No. _____

Justin R. Vaske, Assistant City Attorney

Contractor

By: _____
(SEAL)

Title:

ATTEST:

Secretary

TAMPA AGREEMENT (ACKNOWLEDGMENT OF PRINCIPAL)

STATE OF _____)
) SS:
COUNTY OF _____)

For a Corporation:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ of _____, a _____ corporation, on behalf of the corporation. He/she is ____ personally known or has ____ produced _____ as identification.

Notary

My Commission Expires:

For an Individual:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ who is ____ personally known to me or has ____ produced _____ as identification.

Notary

My Commission Expires:

For a Firm:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ of _____, 2014 by _____ who signed on behalf of the said firm. He/she is ____ personally known or has ____ produced _____ as identification.

Notary

My Commission Expires:

PUBLIC CONSTRUCTION BOND

Bond No. (enter bond number)_____

Name of Contractor:_____

Principal Business Address of Contractor:_____

Telephone Number of Contractor:_____

Name of Surety (if more than one list each):_____

Principal Business Address of Surety:_____

Telephone Number of Surety:_____

Owner is The City of Tampa, Florida

Principal Business Address of Owner:_____ 306 E Jackson St, Tampa, FL 33602

_____ Contract Administration Department (280A4N)

Telephone Number of Owner:_____ 813/274-8456

Contract Number Assigned by City to contract which is the subject of this bond:_____

Legal Description or Address of Property Improved or Contract Number is:_____

General Description of Work and Services:_____

KNOW ALL MEN BY THESE PRESENTS That we, _____

(Name of Contractor)

as Principal, hereinafter called CONTRACTOR, of the State of _____, and

(Name of Surety)

a corporation organized and existing under and by virtue of the laws of the State of _____, and regularly authorized to do business in the State of Florida, as SURETY, are held and firmly bound unto the City of Tampa, a municipal corporation organized and existing under the laws of the State of Florida, hereinafter called Owner, in the penal sum of _____ Dollars and _____ Cents (\$ _____), lawful money of the United States of America, for the payment whereof well and truly to be made, we bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, _____, 20____, between Principal and Owner for construction of _____, the contract being made a part of this bond by reference, in the time and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1) (Section 713.01), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.
5. Contractor and Surety acknowledge that the Work for which this bond has been issued may be one of several such contract documents for a group of projects. This bond does not secure covenants to pay for or to perform design services survey or program management services. The Owner/Obligee is expected to reasonably account for damages that are caused to Owner with respect to Principal's (Contractor's) default in performance of the scope of the Work incorporated by reference into the bond, and notwithstanding any contractual or common law remedy permitted to Owner as against Contractor, the obligation of Surety for any damages under this bond shall be determined by the cost of completion of the Work less the contract balance unpaid upon default of Contractor for the Work plus liquidated damages at the rate of \$500.00 per day for delays by the Contractor and/or Surety in reaching substantial completion.
6. The notice requirements for claimants and conditions for entitlement to payment set forth in Section 255.05, Fla. Stat. and the limitations period to actions upon Section 255.05, Fla. Stat. bonds apply to claimants seeking payment from surety under this bond. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05, Florida Statutes.
7. The Surety, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the contract documents or other Work to be performed hereunder, or the specifications referred to therein shall in any way affect its obligations under this bond, and it does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to Work or to the specifications.

8. The above SURETY states that it has read all of the Contract Documents made by the CONTRACTOR with the CITY, hereto attached, and the terms and conditions of the contract and work, and is familiar therewith and in particular those portions of the Agreement concerning the guaranty of such CONTRACTOR for a period of one year following the date of the final acceptance of the completed work under the Contract by the CITY, all of which this BOND includes.

DATED ON _____, 20____

(Name of Principal)

(Name of Surety)

(Principal Business Address)

(Surety Address)

By _____

By _____
(As Attorney in Fact)*

Title _____

Telephone Number of Surety

Telephone Number of Principal

Accepted by City of Tampa:

Countersignature:

By _____
Bob Buckhorn, Mayor

(Name of Local Agency)

Date: _____ 20____

(Address of Resident Agent)

By _____

Approved as to legal sufficiency:

Title _____

By _____
Assistant City Attorney

Telephone Number of Local Agency

Date: _____, 20____

*(As Attorney in Fact) attach Power of Attorney and Current Certificate with Original Signature

SPECIFICATIONS GENERAL PROVISIONS

SECTION 1 SCOPE AND INTENT

G-1.01 DESCRIPTION

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

G-1.02 WORK INCLUDED

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all required permits. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Provisions, for which there are no specific Contract Items, shall be considered as part of the overhead cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made therefor.

The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his plant and equipment, prior approval of the Engineer notwithstanding.

G-1.03 PUBLIC UTILITY INSTALLATIONS AND STRUCTURES

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes, and all other appurtenances and facilities pertaining thereto whether owned or controlled by the City, other governmental bodies or privately owned by individuals, firms, or corporations, and used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the work.

The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself

fully of the character, condition and extent of all such installations and structures as may be encountered and as may affect the construction operations.

The Contractor shall protect all public utility installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the Engineer. The Contractor shall so arrange his operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the Plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as directed by the Engineer. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the City or other governmental body which are shown on the Plans to be removed, relocated, replaced or rebuilt by the Contractor shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various Contract Items. No separate payment shall be made therefor.

Where public utility installations or structures owned or controlled by the City or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the Engineer, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction or such work may be ordered, in writing by the Engineer, for the Contractor to accomplish. If such work is accomplished by the utility having jurisdiction it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be paid for as extra work as provided for in Article 7.02 of the Agreement.

The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the owners thereof to that end.

All City and other governmental utility departments and other owners of public utilities, which may be affected by the work, will be informed in writing by the Engineer within two weeks after the execution of the Contract or Contracts covering the work. Such notice will set out, in general, and direct attention to, the responsibilities of the City and other governmental

utility departments and other owners of public utilities for such installations and structures as may be affected by the work and will be accompanied by one set of Plans and Specifications covering the work under such Contract or Contracts.

In addition to the general notice given by the Engineer, the Contractor shall give written notice to all City and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight (48) hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Underground Utility Notification Center for Excavators (Call Candy)".

The maintenance, repair, removal, relocation, or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the Engineer.

SECTION 2 PLANS AND SPECIFICATIONS

G-2.01 PLANS

The Plans referred to in the Contract Documents bear the general project name and number as shown in the Notice To Bidders.

When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

G-2.02 COPIES FURNISHED TO CONTRACTOR

After the Contract has been executed, the Contractor will be furnished with five sets of paper prints, the same size as the original drawings, of each sheet of the Plans and five copies of the Specifications. Additional copies of the Plans and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

The Contractor shall furnish each of the subcontractors, manufacturers, and material suppliers such copies of the Contract Documents as may be required for his work.

G-2.03 SUPPLEMENTARY DRAWINGS

When, in the opinion of the Engineer, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer and five paper prints thereof will be given to the Contractor.

The Supplementary Drawings shall be binding upon the Contractor with the same force as the Plans. Where such Supplementary Drawings require either less or more than the estimated quantities of work, credit to the City or compensation therefor to the Contractor shall be subject to the terms of the Agreement.

G-2.04 CONTRACTOR TO CHECK PLANS AND DATA

The Contractor shall verify all dimensions, quantities, and details shown on the Plans, Supplementary Drawings, Schedules, Specifications, or other data received from the Engineer, and shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions as full instructions will be furnished by the Engineer, should such errors or omissions be discovered. All schedules are given for the convenience of the Engineer and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

G-2.05 SPECIFICATIONS

The specifications consist of four parts, the General Provisions, the Technical Specifications, the Special Provisions and the Contract Items. The General Provisions and Technical Specifications contain general requirements which govern the work. The Special Provisions and the Contract Items modify and supplement these by detailed requirements for the work and shall always govern, whenever there appears to be conflict.

G-2.06 INTENT

All work called for in the Specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

SECTION 3 WORKING DRAWINGS

G-3.01 SCOPE

The Contractor shall promptly prepare and submit layout, detail and shop drawings to insure proper construction, assembly, and installation of the work using those materials and methods as hereafter specified under the Technical Specifications, Special Provisions and Contract Items.

These drawings shall accurately and distinctly present the following:

- a. All working and erection dimensions.
- b. Arrangements and sectional views.
- c. Necessary details, including complete information for making connections between work under this Contract and work under other Contracts.
- d. Kinds of materials and finishes.
- e. Parts listed and description thereof.

Drawings for mechanical equipment shall present, where applicable, such data as dimensions, weight and performance characteristics. These data shall show conformance with the performance characteristics and other criteria incorporated in the Plans and Specifications.

Each drawing shall be dated and shall contain the name of the project, Division number and description, the technical specifications section number, names of equipment or materials and the location at which the equipment or materials are to be installed. Location shall mean both physical location and location relative to other connected or attached material. The Engineer will return unchecked any submittal which does not contain complete data on the work and full information on related matters.

Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

The Contractor shall review all working drawing submittals before transmitting them to the Engineer to determine that they comply with requirements of the Specifications. Drawings which are incomplete or are not in compliance with the Contract Documents shall not be submitted for processing by the Engineer. The Contractor shall place his stamp of approval on all working drawings submitted to the Engineer to indicate compliance with the above.

G-3.02 APPROVAL

If the working drawings show departures from the Contract requirements, the Contractor shall make specific mention thereof in his letter of submittal; otherwise approval of such submittals shall not constitute approval of the departure. Approval of the drawings shall constitute approval of the subject matter thereof only and not of any structure, material, equipment, or apparatus shown or indicated.

The approval of drawings will be general and shall not relieve the Contractor of responsibility for the accuracy of such drawings, nor for the proper fitting and construction of the work, nor for the furnishing of materials or work required by the Contract and not indicated on the drawings. No work called for by working drawings shall be done until such drawings have been approved by the Engineer.

The procedure in seeking approval of the working drawings shall be as follows:

1. The Contractor shall submit four complete sets of drawings

and other descriptive data together with one copy of a letter of transmittal to the Engineer for approval. The letter of transmittal shall contain the name of the project, contract number, technical specifications section number, the name of the Contractor, a list of drawings with numbers and titles, and any other pertinent information.

2. Drawings or descriptive data will be stamped "Approved", "Approved Subject to Corrections Marked", or "Examined and Returned for Correction" and one copy with a letter of transmittal will be returned to the Contractor.

3. If a drawing or other data is stamped "Approved", the Contractor shall insert the date of approval on five additional copies of the document and transmit the five copies to the Engineer together with one copy of a letter of transmittal containing substantially the same information as described in Instruction 1. above.

4. If a drawing or other data is stamped "Approved Subject to Corrections Marked", the Contractor shall make the corrections indicated and proceed as in Instruction 3., above.

5. If a drawing or data is stamped "Examined and Returned for Correction", the Contractor shall make the necessary corrections and resubmit the documents as set forth in Instruction 1., above. The letter of transmittal shall indicate that this is a resubmittal.

The Contractor shall revise and resubmit the working drawings as required by the Engineer, until approval thereof is obtained.

SECTION 4 MATERIALS AND EQUIPMENT

G-4.01 GENERAL REQUIREMENTS

All materials, appliances, and types or methods of construction shall be in accordance with the Specifications and shall, in no event, be less than that necessary to conform to the requirements of any applicable laws, ordinances, and codes.

All materials and equipment shall be new, unused, and correctly designed. They shall be of standard first grade quality, produced by expert personnel, and intended for the use for which they are offered. Materials or equipment which, in the opinion of the Engineer, are inferior or of a lower grade than indicated, specified, or required will not be accepted.

The quality of Workmanship and Materials entering into the work under this Contract shall conform to the requirements of the pertinent sections, clauses, paragraphs, and sentences, both directly and indirectly applicable thereto, of that part of the Technical Specifications, whether or not direct reference to such occurs in the Contract Items.

Equipment and appurtenances shall be designed in conformity with ANSI, ASME, IEEE, NEMA and other

generally accepted standards and shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions of operation. All bearings and moving parts shall be adequately protected against wear by bushings or other approved means and shall be fully lubricated by readily accessible devices. Details shall be designed for appearance as well as utility. Protruding members, joints, corners, gear covers, and the like, shall be finished in appearance. All exposed welds shall be ground smooth and the corners of structural shapes shall be mitered.

Equipment shall be of the approximate dimensions as indicated on the Plans or as specified, shall fit the spaces shown on the Plans with adequate clearances, and shall be capable of being handled through openings provided in the structure for this purpose. The equipment shall be of such design that piping and electrical connections, ductwork, and auxiliary equipment can be assembled and installed without causing major revisions to the location or arrangement of any of the facilities.

Machinery parts shall conform exactly to the dimensions shown on the working drawings. There shall be no more fitting or adjusting in setting up a machine than is necessary in assembling high grade apparatus of standard design. The equivalent parts of identical machines shall be made interchangeable. All grease lubricating fittings on equipment shall be of a uniform type. All machinery and equipment shall be safeguarded in accordance with the safety codes of the ANSI and applicable state and local codes.

G-4.02 MANUFACTURER

The names of proposed manufacturers, suppliers, material, and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval, as early as possible, to afford proper investigation and checking. Such approval must be obtained before shop drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless he shall be of good reputation and have a plant of ample capacity. He shall, upon the request of the Engineer, be required to submit evidence that he has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the Engineer, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

G-4.03 REFERENCE TO STANDARDS

Whenever reference is made to the furnishing of materials or

testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the date of advertisement for proposals, even though reference has been made to an earlier standard, and such standards are made a part hereof to the extent which is indicated or intended.

Reference to a technical society, organization or body may be made in the Specifications by abbreviations, in accordance with the following list:

AASHTO for American Association of State Highway and Transportation Officials (formerly AASHO)
ACI for American Concrete Institute
AGMA for American Gear Manufacturer's Association
AFBMA for Anti-Friction Bearing Manufacturer's Association
AISC for American Institute of Steel Construction
AISI for American Iron and Steel Institute
ANSI for American National Standards Institute
ASCE for American Society of Civil Engineers
ASTM for American Society for Testing and Materials
ASME for American Society of Mechanical Engineers
AWS for American Welding Society
AWWA for American Water Works Association
AWPA for American Wood Preservers Association
CEMA for Conveyor Equipment Manufacturers Association
CIPRA for Cast Iron Pipe Research Association
IEEE for Institute of Electrical and Electronic Engineers
IPCEA for Insulated Power Cable Engineers Association
NEC for National Electrical Code
NEMA for National Electrical Manufacturers Association
SAE for Society of Automotive Engineers
SHBI for Steel Heating Boiler Institute
Fed.Spec. for Federal Specifications
Navy Spec. for Navy Department Specifications
U.L.,Inc. for Underwriters' Laboratories, Inc.

When no reference is made to a code, standard or specification, the Standard Specifications of the ANSI, the ASME, the ASTM, the IEEE, or the NEMA shall govern.

G-4.04 SAMPLES

The Contractor shall, when required, submit to the Engineer for approval typical samples of materials and equipment. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the work, so that rejections thereof will not cause delay. A letter of transmittal, in duplicate, from the Contractor requesting approval must accompany all such samples.

G-4.05 EQUIVALENT QUALITY

Whenever, in the Contract Documents, an article, material, apparatus, equipment, or process is called for by trade name or by the name of a patentee, manufacturer, or dealer or by reference to catalogs of a manufacturer or dealer, it shall be understood as intending to mean and specify the article, material, apparatus, equipment or process designated, or any

equal thereto in quality, finish, design, efficiency, and durability and equally serviceable for the purposes for which it is intended.

Whenever material or equipment is submitted for approval as being equal to that specified, the decision as to whether or not such material or equipment is equal to that specified shall be made by the Engineer.

Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the Contract, the Contractor shall immediately proceed to furnish the designated material or equipment.

Neither the approval by the Engineer of alternate material or equipment as being equivalent to that specified nor the furnishing of the material or equipment specified, shall in any way relieve the Contractor of responsibility for failure of the material or equipment, due to faulty design, material, or workmanship, to perform the functions required of them by the Specifications.

G-4.06 DELIVERY

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid a delay in, or impediment of, the progress of the work of any related Contractor.

G-4.07 CARE AND PROTECTION

The Contractor shall be solely responsible for properly storing and protecting all materials, equipment, and work furnished under the Contract from the time such materials and equipment are delivered at the site of the work until final acceptance thereof. He shall, at all times, take necessary precautions to prevent injury or damage by water, freezing, or by inclemencies of the weather to such materials, equipment and work. All injury or damage to materials, equipment, or work resulting from any cause whatsoever shall be made good by the Contractor.

The Engineer shall, in all cases, determine the portion of the site to be used by the Contractor for storage, plant or for other purposes. If, however, it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or interference with the work to be done by any other Contractor, the Contractor shall remove and restack such materials at his own expense.

G-4.08 TOOLS AND ACCESSORIES

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain, or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

G-4.09 INSTALLATION OF EQUIPMENT

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the Engineer during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the Engineer and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall, at his own expense, furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations. Grout shall completely fill the space between the equipment base and the foundation.

G-4.10 OPERATING INSTRUCTIONS

The Contractor, through qualified individuals, shall adequately instruct designated employees of the City in the operation and care of all equipment installed hereunder, except for equipment that may be furnished by the City.

The Contractor shall also furnish and deliver to the Engineer three complete sets for permanent files, identified in accordance with Subsection G-3.01 hereof, of instructions, technical bulletins and any other printed matter, such as diagrams, prints or drawings, containing full information required for the proper operation, maintenance, and repair, of the equipment installed and the ordering of spare parts, except for equipment that may be furnished by the City.

In addition to the above three copies, the Contractor shall furnish any additional copies that may be required for use during construction and start-up operations.

G-4.11 SERVICE OF MANUFACTURER'S ENGINEER

The Contract prices for equipment shall include the cost of furnishing a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in

permanent operation by the City, such engineer or superintendent shall make all adjustments and tests required by the Engineer to provide that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the City in the proper operation and maintenance of such equipment.

SECTION 5

INSPECTION AND TESTING

G-5.01 GENERAL

The Contractor's attention is hereby directed to Article 3.03 of the Agreement.

Inspection and testing of materials will be performed by the City unless otherwise specified.

For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Five copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the Engineer that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material and equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the City.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the City formally takes over the operation thereof.

G-5.02 COSTS

All inspection and testing of materials furnished under this Contract will be performed by the City or duly authorized inspection engineers or inspection bureaus without cost to the Contractor, unless otherwise expressly specified.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the City for compliance. The Contractor shall reimburse the City for the expenditures incurred in making

such tests on materials and equipment which are rejected for noncompliance.

G-5.03 INSPECTIONS OF MATERIALS

The Contractor shall give notice, in writing to the Engineer, sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice the Engineer will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

G-5.04 CERTIFICATE OF MANUFACTURE

When inspection is waived or when the Engineer so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

G-5.05 SHOP TESTS OF OPERATING EQUIPMENT

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function, or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the Engineer notifies the Contractor, in writing, that the results of such tests are acceptable.

Five copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, shall be forwarded to the Engineer for approval.

The cost of the shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

G-5.06 PRELIMINARY FIELD TESTS

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments, and replacements required.

G-5.07 FINAL FIELD TESTS

Upon completion of the work and prior to final payment, all equipment and appliances installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment, and instruments necessary for all acceptance tests, at no additional cost to the City.

G-5.08 FAILURE OF TESTS

Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor by replacements or otherwise. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make those corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the City, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

In case the City rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the City may, after the expiration of a period of thirty calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under this Contract.

The City agrees to obtain other equipment within a reasonable time and the Contractor agrees that the City may use the equipment furnished by him without rental or other charges until the new equipment is obtained.

Materials or work in place that fails to pass acceptability tests shall be retested at the direction of the construction engineer all such retests shall be at the Contractor's expense. The rates charged shall be in accordance with the Department of Public Works current annual inspection contract which is available for inspection at the offices of the Department of Public Works.

G-5.09 FINAL INSPECTION

The procedures for final inspection shall be in accordance with the provisions of Article 4.07 of the Agreement. During such final inspections, the work shall be clean and free from water. In no case will the final estimate be prepared until the Contractor has complied with all the requirements set forth and the Engineer has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

TEMPORARY STRUCTURES

G-6.01 GENERAL

All false work, scaffolding, ladders, hoistways, braces, pumping plants, shields, trestles, roadways, sheeting, centering forms, barricades, drains, flumes, and the like, any of which may be needed in the construction of any part of the work and which are not herein described or specified in detail, must be furnished, maintained and removed by the Contractor, and he shall be responsible for the safety and efficiency of such works and for any damages that may result from their failure or from their improper construction, maintenance, or operation.

G-6.02 PUBLIC ACCESS

At all points in the work where public access to any building, house, place of business, public road, or sidewalk would be obstructed by any action of the Contractor in executing the work required by this Contract, the Contractor shall provide such temporary structure, bridges or roadway as may be necessary to maintain public access at all times. At least one lane for vehicular traffic shall be maintained in streets in which the Contractor is working. Street closure permits are required from the Department of Public Works.

The Contractor shall provide suitable temporary bridges, as directed by the Engineer, at street intersections when necessary for the maintenance of vehicular and pedestrian traffic.

Prior to temporarily cutting of access to driveways and garages, the Contractor shall give twelve (12) hours notice to affected property owners. Interruptions to use of private driveways shall be kept to a minimum.

G-6.03 CONTRACTOR'S FIELD OFFICE

The Contractor shall erect, furnish and maintain a field office with a telephone at the site during the entire period of construction. He or an authorized agent shall be present at this office at all times while his work is in progress. Readily accessible copies of both the Contract Documents and the latest approved working drawings shall be kept at this field office.

G-6.04 TEMPORARY FENCE

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the Engineer, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The Engineer shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

G-6.05 RESPONSIBILITY FOR TEMPORARY STRUCTURES

In accepting the Contract, the Contractor assumes full responsibility for the sufficiency and safety of all temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance, or operation and will indemnify and save harmless the City from

SECTION 6

all claims, suits or actions and damages or costs of every description arising by reason of failure to comply with the above provisions.

SECTION 7 TEMPORARY SERVICES

G-7.01 WATER

The Contractor shall provide the necessary water supply at his own expense. He shall, if necessary, provide and lay necessary waterlines from existing mains to the place of using, shall secure all necessary permits and pay for all taps to water mains or hydrants and for all water used at the established rates.

G-7.02 LIGHT AND POWER

The Contractor shall provide, at his own expense, temporary lighting and power facilities required for the proper prosecution and inspection of the work. If, in the opinion of the Engineer, these facilities are inadequate, the Contractor will not be permitted to proceed with any portion of the work affected thereby.

G-7.03 SANITARY REGULATIONS

The Contractor shall prohibit and prevent the committing of nuisances on the site of the work or on adjoining property and shall discharge any employee who violates this rule.

Ample washrooms and toilet facilities and a drinking water supply shall be furnished and maintained in strict conformity with the law by the Contractor for use by his employees.

G-7.04 ACCIDENT PREVENTION

Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. The Contractor shall comply with the U. S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596), and under Section 107 of the Contract Work. Hours and Safety Standards Act (PL 91-54), except where state and local safety standards exceed the federal requirements and except where state safety standards have been approved by the Secretary of Labor in accordance with provisions of the Occupational Safety and Health Act.

G-7.05 FIRST AID

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when men are employed on the work.

G-7.06 HEATING

The Contractor shall provide temporary heat, at his own expense, whenever required on account of work being carried on during cold weather and to prevent freezing of water pipes and other damage to the work.

SECTION 8

LINES AND GRADES

G-8.01 GENERAL

All work done under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

The Engineer will establish bench marks and base line controlling points. Reference remarks for lines and grades as the work progresses will be located to cause as little inconvenience to the prosecution of the work as possible. The Contractor shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. He shall remove any obstructions placed by him contrary to this provision.

G-8.02 SURVEYS

The Contractor shall furnish and maintain, at his own expense, stakes and other such materials, and give such assistance, including qualified helpers, as may be required by the Engineer for setting reference marks. The Contractor shall check such reference marks by such means as he may deem necessary and, before using them, shall call the Engineer's attention to any inaccuracies. The Contractor shall, at his own expense, establish all working or construction lines and grades as required from the reference marks set by the Engineer, and shall be solely responsible for the accuracy thereof. He shall, however, be subject to the check and review of the Engineer.

The Contractor shall keep the Engineer informed a reasonable time in advance as to his need for line and grade reference marks, in order that they may be furnished and all necessary measurements made for record and payment with the minimum of inconvenience to the Engineer or of delay to the Contractor.

It is the intention not to delay the work for the establishment of reference marks but, when necessary, working operations shall be suspended for such reasonable time as the Engineer may require for this purpose.

G-8.03 SAFEGUARDING MARKS

The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

G-8.04 DATUM PLANE

All elevations indicated or specified refer to the Mean Sea Level Datum of the U.S.C. & G.S. (N.O.S.) which is 0.80 feet above the Mean Low Water Datum of the U. S. Army

SECTION 9 ADJACENT STRUCTURES AND LANDSCAPING

G-9.01 RESPONSIBILITY

The responsibility for removal, replacement, relocation, repair, rebuilding or protection of all public utility installations, including poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes, sewers, traffic control and fire alarm signal circuit installations and other appurtenances and facilities shall be in accordance with G-1.02 and G-1.03.

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation, and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payment will be made therefor. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the Engineer, removal or relocation and reconstruction is necessary to avoid interference with the work, payment therefor will be made as provided for extra work in Article 7.02 of the Agreement.

G-9.02 PROTECTION OF TREES

All trees and shrubs shall be adequately protected by the Contractor with boxes or otherwise and, within the City of Tampa, in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season, and at the sole expense of the Contractor.

Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.

The City may order the Contractor, for the convenience of the City, to remove trees along the line of trench excavation. If so ordered, the City will obtain any permits required for removal of trees. Such tree removal ordered shall be paid for under the appropriate Contract Items.

G-9.03 LAWN AREAS

Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed and later replaced, or the area where sod has been removed shall be restored with new sod in the

manner described in the Technical Specifications section.

G-9.04 RESTORATION OF FENCES

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or Items, or if no specific Item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefor.

SECTION 10 PROTECTION OF WORK AND PUBLIC

G-10.01 TRAFFIC REGULATIONS

The Contractor shall arrange his work to comply with Article G-6.02. The work shall be done with the least possible inconvenience to the public and to that end the work may be confined by the Engineer to one block at a time.

G-10.02 BARRIERS AND LIGHTS

During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers, and lights, as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public. Such barriers and signs shall be constructed to State of Florida Department of Transportation standards and placed as recommended by the Traffic Division of the City's Department of Public Works.

No open fires will be permitted.

G-10.03 SMOKE PREVENTIONS

The Contractor shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production and emission of smoke will be required.

G-10.04 NOISE

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

Except in the event of an emergency, no work shall be done between the hours of 7:00 p.m. and 7:00 a.m., or on Sundays.

If the proper and efficient prosecution of the work requires operations during the night, the written permission of the Engineer shall be obtained before starting such items of the work.

G-10.05 ACCESS TO PUBLIC SERVICES

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

G-10.06 DUST PREVENTION

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the streets sprinkled with water at all times.

G-10.07 PRIVATE PROPERTY

The Contractor shall so conduct the work that no equipment, material, or debris will be placed or allowed to fall upon private property in the vicinity of the work unless he shall have obtained the owner's written consent thereto and shall have shown this consent to the Engineer.

SECTION 11 SLEEVES AND INSERTS

G-11.01 COORDINATION

When the Contract requires the placing of conduits, saddles, boxes, cabinets, sleeves, inserts, foundation bolts, anchors, and other like work in floors, roofs, or walls of buildings and structures, they shall be promptly installed in conformity with the construction program. The Contractor who erects the floors, roofs, and walls shall facilitate such work by fully cooperating with the Contractors responsible for installing such appurtenances. The Contractor responsible for installing such appurtenances shall arrange the work in strict conformity with the construction schedule and avoid interference with the work of other contractors.

G-11.02 OPENINGS TO BE PROVIDED

In the event timely delivery of sleeves and other materials cannot be made and to avoid delay, the affected Contractor may arrange to have boxes or other forms set at the locations where the appurtenances are to pass through or into the floors, roofs, walls, or other work. Upon the subsequent installation of these appurtenances, the Contractor erecting the structure shall fill around them with materials as required by the Contract. The necessary expenditures incurred for the boxing out and filling in shall be borne by the Contractor or Contractors required to furnish the sleeves and inserts. Formed openings and later installation of sleeves will not be permitted at locations subject to hydrostatic pressure.

SECTION 12 CUTTING AND PATCHING

G-12.01 GENERAL

The Contractor shall do all cutting, fitting, or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

SECTION 13 CLEANING

G-13.01 DURING CONSTRUCTION

During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris, and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable.

The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefor develops.

G-13.02 FINAL CLEANING

At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished, and new appearing condition.

SECTION 14 MISCELLANEOUS

G-14.01 PROTECTION AGAINST SILTATION AND BANK EROSION

The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed watercourses and drainage ditches.

G-14.02 EXISTING FACILITIES

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Work shall be scheduled to minimize bypassing during construction. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Special Provisions.

G-14.03 USE OF CHEMICALS

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

SPECIFIC PROVISIONS

SP-1.01 REFERENCE SPECIFICATIONS:

The 2014 Edition of the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction specific to Division II – CONSTRUCTION DETAILS and Division III – MATERIALS, **as amended**, and the 2014 Edition of the FDOT Roadway and Traffic Design Standards shall apply to work of this Project.

In case of discrepancy, the governing order of the documents shall be as follows:

1. Specific Provisions
2. Technical Specifications included with Specific Provisions
3. Plans
4. Specifications – General Provisions
5. Supplemental Specifications
6. FDOT Standard Specifications for Road and Bridge Construction
7. FDOT Roadway and Traffic Design Standards

Computed dimensions govern over scaled dimensions

SP-2.01 BID ITEMS:

It is the intent of these Contract Documents that any items of work and all costs for which compensation is not directly provided by a bid item but are incidental to various project items of work, shall be prorated and included in the bid item for which they are required. Failure of the Contractor to follow this procedure shall be basis for rejection of its bid.

SP-2.02 WORK DIRECTIVE CHANGE:

A Work Directive Change is a written directive to the Contractor, issued on or after the date of the execution of the Agreement, and signed by the Engineer on behalf of the City, ordering an addition, deletion or revision in the work, or responding to an emergency. A Work Directive Change will not change the contract price or the time for completion, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the contract price or the time of completion.

Without invalidating the Agreement, certain additions, deletions or revisions in the work may, at any time or from time to time, be authorized by a Change Order or a Work Directive Change. Upon receipt of any such document, the Contractor shall promptly proceed with the work involved.

SP-2.03 LINES AND GRADES:

The General Provisions Section G-8.01 and G-8.02 are revised to read as follows:

G-8.01 General:

All work done under this contract shall be constructed in accordance with the lines and grades as shown on the plans or as directed by the Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

The Engineer will establish Bench Marks and baseline controlling points only.

G-8.02 Surveys:

The Contractor shall furnish and maintain, with no additional payment, stakes and other such material as may be required for setting reference marks; and shall, with no additional payment, establish all working or construction lines and grades as required from the reference marks set by the Engineer, and shall be solely responsible for the accuracy thereof. The Contractor shall, however, be subject to the check and review of the Engineer.

Pay items requiring survey information, such as embankment or excavation, shall be documented by a land surveyor registered in the State of Florida. In addition, plotted cross sections and quantity computations must be supplied and certified. All surveys shall be performed using electronic data collection for data acquisition. All drawings shall be submitted in the most current version of AutoCAD being used by the COT department requiring the survey. All surveys must meet the minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes. All surveys must also meet any standards or specifications which may be included as part of the scope of contract.

SP-2.04 REQUIREMENTS FOR CONTROL OF THE WORK:

Prior to the start of the work included in this contract, a Preconstruction Conference will be held by the Engineer to be attended by the Contractor and representatives of the various utilities and others for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project. The Contractor shall be prepared for this meeting and shall present a comprehensive construction schedule for all items of work to be accomplished, which will be used as the basis for the development of an overall operational schedule and a list of subcontractors and material suppliers to be used on this work.

All items of work in this contract shall be coordinated so that progress on each related work item will be continuous from week to week. The progress of the work will be reviewed by the Engineer at the end of each week, and if the progress on any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Engineer.

The Contractor shall conduct operations in such a manner as will result in the minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as conditions in any particular location may require.

Access to adjacent residential, public and commercial properties shall be provided at all times during the contract period.

The Contractor shall restore to its previous condition as directed by the Engineer any private property, City property, or utilities damaged by its construction. No payment shall be made to the Contractor for any required restoration of private property, City property or utilities, unless otherwise noted.

SP-2.05 REFERENCE STAKES:

Add the following paragraph to General Provision Section G-8.03:

The Contractor shall, with no additional payment, furnish and install reference stakes at all even and half-stations along the project survey baseline.

These stakes shall be maintained for the duration of construction for the purpose of the Engineer's reference.

SP-2.06 CONTRACTOR'S WEEKLY SCHEDULE:

In order that the Contract Administration Department (CAD) personnel may be advised of the work to be performed, the Contractor shall be required to submit weekly to the Engineer of its designated representative a schedule indicating the proposed work plan for the forthcoming week. Such shall be delivered to CAD not later than Friday preceding the work plan week unless other arrangements have been made for this submittal.

SP-2.07 MONTHLY CONSTRUCTION ESTIMATES AND RELEASE OF LIEN:

The Contractor shall prepare on or about the first day of each month an estimate of the work completed in the preceding month. Said estimate shall be prepared on standard forms provided by the Engineer, and three (3) signed originals shall be provided by the Contractor. Any disputed quantities shall be adjusted as directed by the Engineer prior to each partial payment, as provided for in Article 10.05 of the Agreement.

Certification that all subcontractors have been paid for the previous month's work shall be submitted with each partial payment request on forms provided by the Engineer.

An update of the overall project schedule shall be submitted with each partial payment request.

This contract has funding from multiple sources. These include the Transportation and Stormwater Service Department, private donations and TIGER Grant. The Contractor shall break down the monthly pay estimate to include the following:

1. A total listing of all pay items as shown in the proposal;
2. A separate breakdown of pay items for the Transportation and Stormwater Service Department with total;
3. A separate breakdown of pay items for the private donations with total.
4. A separate breakdown of pay items for the TIGER Grant with total.

The separation of pay items by funding source(s) will be provided to the Contractor at the Pre-Construction Conference.

SP-2.08 CONTRACTOR'S REPRESENTATIVE:

Add to Article 8.02 of the Agreement:

"The Contractor shall submit in writing to the Construction Engineer the name of its duly authorized representative who will be present on the job during all work activities and is authorized to make decisions for the Contractor. Any change in the contractor's representative shall require written notification to the Construction Engineer prior to such change".

SP-2.09 NOTICE AND SERVICE THEREOF:

All notices, which shall include demands, instruction, requests, approvals, and claims, shall be in writing.

Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the Contractor's representative at the construction site or to the office of the Contractor specified in the bid (or to such other offices as the Contractor may, from time to time, designate to the City in writing), or if deposited in the United States mail in a sealed, postage-

prepaid envelope, or delivered, with charges prepaid, to any telegraph company for transmission, in each case addressed to such office.

All notices required to be delivered to the City shall, unless otherwise specified in writing to the Contractor, be delivered to the Engineer, 3806 E. 26th Avenue, Tampa, Florida 33605, and any notice to or demand upon the City shall be sufficiently in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Engineer or to such other representative of the City or to such other address as the City may subsequently specify in writing to the Contractor or to its representative at the construction site for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or (in the case of telegram) at the time of actual receipt, as the case may be.

SP-2.10 CONTRACTOR'S FIELD OFFICE:

The sum of \$100.00 per calendar day for each day that the construction is in progress without the Contractor's field office being furnished and completely equipped per Section G-6.03 of the General Specifications shall be deducted from monies due to the Contractor.

SP-2.11 ENGINEERING'S FIELD OFFICE:

The Contractor shall provide and maintain a separate, not co-located, and adequate field office for the use of the Construction Engineer and Engineering Technicians within the project limits. Requirements are as follows:

1. The sum of \$100.00 per calendar day for each day that the construction is in progress without the Engineer's field office being furnished and completely equipped and the following additions shall be deducted from monies due to the Contractor.

2. The Engineer's field office shall be a minimum 12' x 30', insulated, weather tight, air-conditioned, with full electrical power, and be equipped with the following for the duration of the project: Two (2) desks with chairs, Six (6) additional chairs, 4' x 8' level table, plan rack, 6-shelf bookcase, 4-drawer legal size metal filing cabinet, CO2 10lb rated fire extinguisher, first aid kit, bottled water cooler with monthly service, copy machine, printer, and incidentals such as a pencil sharpener and waste baskets. The sanitary facilities shall be a compartment inside the office with a locked door complete with toilet, lavatory and mirror medicine cabinet. The office entrance door(s) shall be equipped with padlock hasps(s).

3. The Contractor shall also provide telephone service to the office for the duration of the project consisting of two (2) landlines and jacks - one for a desk telephone with voice mail service and one for a computer link. All operational costs associated with the landlines (local calls only) for the duration of the project shall be paid for by the Contractor. No separate payment shall be made for these services.

4. The Contractor shall provide a brand new computer station and digital camera for use by the Engineer that will become the property of the Contractor upon completion of the project. The computer station shall include a keyboard, 17" LCD color monitor, and printer. The computer shall be at least a Pentium 4, and have as a minimum a 30gig HD, 3.0 GHz speed, 2 gig RAM, and Ethernet card with High speed Internet service provided for the duration of the project. The computer shall also be furnished with Windows XP/Professional and Microsoft Office XP Professional software, and a card reader for reading digital camera output, and a CD-RW Disk Drive. The printer shall be an HP Office Jet 7310 or equivalent. The contractor shall supply paper and ink cartridges as requested for the duration of the project. The digital camera shall have a minimum of 3 megapixel resolution."

5. Provide with the field office, six (6) US Coast Guard approved personal floatation devices for use by the Construction Engineer and Engineering Technicians. No additional payment will be made for this item.

6. The Contractor shall provide six (6) hard hats and six (6) safety vests to be kept in the field office for use by City inspectors or their visitors.

All costs shall be included in the pay item for Mobilization and no separate payment will be made. This office equipment and location shall meet the approval of the Engineer. No partial payments will be authorized until all foregoing requirements have been met.

SP-2.12 DAMAGE TO ADJACENT STREETS:

Any streets (including detour routes) consisting of travel lanes, curbs, gutters and shoulders, outside the project area (not designated for construction), which are determined by the Engineer to have been damaged due to negligent construction related operations and/or equipment, shall be restored by the Contractor to its original or better condition without any cost to the City and to the satisfaction of the Engineer.

SP-2.13 PROJECT AERIAL PHOTOGRAPHS:

The Contractor will be required to furnish monthly aerial photographs for the duration of the project. A minimum of two different perspectives shall be taken each month for the duration of the project.

Payment for this work shall be made under:

SP-2.13	Project Aerial Photographs	L.S.
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SP-2.14 PROJECT VIDEOTAPES:

The Contractor shall submit to the Engineer for approval prior to commencing work a DVD containing a continuous color video recording including complete coverage of pre-construction conditions of all surface features within the construction's zone of influence, (including detour routes) simultaneously produced audio commentary and electronic display of time and date. The video recording shall be sufficient to fulfill the technical and forensic requirements of the project and provide continuous unedited coverage, establishing locations and viewer orientation with clear, bright, steady and sharp video images with accurate colors free of distortion or other imperfections. The video must be accompanied by a detailed Log of the recorded contents including date, locations, track numbers and features. No work shall be allowed to commence until the completed video and Log are approved by the Engineer. The video recording shall be taken from the river to cover the seawall repair project and from landside for the Riverwalk project.

Payment for this work shall be made under:

SP-2.14	Project Videotaping	L.S.
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SP-2.15 PROJECT CLEAN-UP:

Clean-up on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean with debris being removed regularly as the work progresses.

If project cleanliness and/or dust control reaches an unacceptable level in the opinion of the Engineer, the Engineer will notify the Contractor in writing. If the Contractor does not act to correct the situation within 4 hours in the case of dust control or within 24 hours in the case of general cleanliness, the Engineer may call upon outside forces to

provide the appropriate services. Cost of all such activities shall be charged to the Contractor via contract change order.

SP-2.16 CITY PERMITS:

The Contractor shall be responsible for obtaining all applicable City permits for this project. These can include but may not be limited to: Right-of-way permit(s), tree removal/site clearing permit(s), and drainage/earthwork permit(s). The Contractor shall supply any required plans or other information to the issuing department.

The time required to prepare, submit, review, and issue the permits shall be included in the contract time and no payment shall be made for any delay incurred by this process.

Cost for obtaining City permits shall be included in the lump sum cost for mobilization (Item No. 101-1), and no separate payment shall be made. Right-of-way permit fee shall be waived by the City. All subcontractors working on the project shall obtain their own, separate permits as above.

The Owner prior to advertisement of the project has applied for and obtained permits with the following agencies:

1. Tampa Port Authority
2. Florida Department of Environmental Protection
3. Hillsborough County Health Department
4. U.S. Army Corp of Engineers

SP-2.17 AS-BUILT PLANS:

The Contractor shall provide the Engineer with "As-Built" plans, as follows:

1. All As-Built information shall be annotated by a Florida Registered Professional Surveyor and Mapper on a separate layer of each AutoCAD drawing file as provided on a disk by the City. Annotation of the new drawing files shall be in accordance with City of Tampa DPW drafting standards, as well as the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes. Settings shall be as follows: Color: CYAN, Line Type: CONTINUOUS, Font: ROMANS, Layer Name: AS-BUILT, AutoCAD Menu Name: ACAD.MNU, and File Format: AUTOCAD latest version.
2. All surveys shall be completed and certified by a Florida Registered Professional Surveyor and Mapper hired and/or employed by the Contractor, and shall be in accordance with the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

Survey data shall be submitted as an electronic data file in AutoCAD latest version. The Contractor shall also include as supporting data the ASCII files of digital raw survey data, closure reports, adjustment reports, and/or copies of any hand written field notes or sketches.

3. "As-Built", or "Record", surveys, as may be required by contract, or agreement, shall consist of survey data collected on all constructed improvements, so they may be compared to and contrasted with the design plans and/or construction drawings. The annotated disk shall delineate all changes and deviations to the planned improvements within the project limits, to include, but not be limited to, utilities, pavement, curb & gutter, sidewalk, driveways, inlets, manholes, all piping, inverts, ditches, ponds, valves, hydrants, water meters, signalization, hand holes, signing & pavement marking, landscaping, and irrigation. All changes and deviations shall be delineated by Station-Offset and vertical alignment values and shall be clearly shown on the drawing files.

4. The Contractor shall comply with the above requirements and shall submit one check print set of the plans at the same scale as the construction plans, and all the supporting survey data files, to the Engineer for review within three weeks of substantial completion of the project. Final payment for the project shall not be made until the As-Built information is received for review, any corrections are made, and approval granted by the Engineer. Upon approval, the Contractor shall provide the final As-Built drawings on the disk, at the same scale as the construction plans. These files shall be AutoCAD Drawings or AutoCAD Design Web Format and Adobe PDF.

The cost for this work shall be included in the contract price for Mobilization and no separate payment shall be made for meeting the above As-Built requirements.

SP-3.01 STREET CLOSURES AND MAINTENANCE OF TRAFFIC:

A City of Tampa permit for construction and maintenance operations within public Rights of Way will be required for every street, lane, or sidewalk closure within City of Tampa Rights of Way.

A State of Florida Department of Transportation Permit will be required for every street, lane, or sidewalk closure within State of Florida Rights of Way. The City of Tampa as the organization performing the work will secure these permits.

These permits will establish the requirements for the closure related to number of lanes and/or time of day lanes or street may be closed. The Contractor shall adhere to the requirements as described in the permit(s).

The Contractor shall furnish and maintain all necessary signs, pavement markings, barricades, lights, and flagmen necessary to control traffic and provide for safety of the public, all in compliance with the current Florida Department of Transportation Roadway and Traffic Design Standards and the FHWA Manual on Uniform Traffic Control Devices.

The Contractor shall observe traffic movements through the work site and inspect all traffic control devices on a regular basis to ensure that all devices are properly installed and functioning as intended.

In cases of closure for street, lane, or sidewalk on the City of Tampa Functionally Classified Network (collectors, minor arterials, and principal arterials), including all State Roads, the Contractor shall provide a maintenance of traffic plan to the City of Tampa, Transportation Division. This plan shall be provided at least seventy-two hours in advance of the closure (excluding weekends) and shall contain the following:

1. Proposed detour routes.
2. Signing of the complete construction area and detour routes.

Advance notice information signs advising the public of scheduled closure of major roadways and/or information signs advising the public of points of closure and detour routes may be required by the Engineer and will be installed at the Contractor's expense.

Payment shall be full compensation for all work, equipment, materials, tools, labor and any incidentals required to maintain safe traffic routes past the work site.

Payment shall be made under:

Item No. 102-1 Maintenance of Traffic L.S.

SP-3.02 TRAFFIC INFORMATION SIGNS:

The Contractor's attention is directed to Section 10 of the General Provisions, PROTECTION OF WORK AND PUBLIC, and to the consideration therein for providing informative signs indicating the street closures. It is the purpose of such requirements to adequately inform residents and the general public of the closure thereby creating better understanding and relations during the construction.

SP-3.03 PROJECT SIGN:

The Contractor shall furnish two project sign(s) which shall conform to the general configuration and dimensions as per page SIGN-1 which are made a part of these specifications. The sign(s) shall be maintained in good condition until the completion of the project, and shall be located as instructed by the Construction Engineer.

The cost of furnishing and maintaining the signs shall be included in the various contract items and no additional compensation shall be made.

SP-3.07 BARRICADES, ARROW BOARDS AND WORK ZONE SIGNS

The City will maintain controlled access within the public parks. Contractor is responsible for providing security for the construction site. No separate payment will be made for this item.

SP-4.01 DENSITY REQUIREMENTS:

The subgrade, subbase and base densities shall be 98% of the Modified Proctor for all vehicular travelways. The density requirements for asphaltic concrete and soil cement shall be 96% of the Laboratory Standard Proctor. All other locations shall attain densities of 98% of the Modified Proctor.

SP-4.03 SOIL BORING INFORMATION:

Soil boring information is included in these Specifications.

The City of Tampa will not be responsible for the accuracy of the borings. The Contractor shall be responsible for obtaining any additional soils information, at the Contractor's cost prior to submitting a bid.

SP-4.04 TEMPORARY STOCKPILING:

For temporary stockpiling of the excavated material within project limits (and anywhere within City limits) the Contractor shall follow the following procedure.

Public Right of Way

- a. The Contractor will not be allowed to stockpile suitable, excavated material within right- of-way for a period in excess of 30 calendar days. Unsuitable excavated material shall not be stockpiled within public right-of-way for a period in excess of 7 calendar days.

Location other than Public Right-of-Way

- b. The Contractor shall:
 1. Obtain the permission (in writing) from the owner of the property where stockpiling is desired.

2. At its own expense present the above letter and a contour plan of the site to the Contract Administration Construction Engineer for approval of stockpiling site.
3. At the conclusion of the stockpiling activity, the Contractor shall obtain a signed letter of release from the property owner that he/she is completely satisfied with the stockpiling operation and with the restoration of their property. A copy of the letter shall be furnished to the Engineer.

The time periods of stockpiling shall be specified by the Contractor in writing.

Upon removal of stockpiled material, the Contractor shall clean up and grade the site to its original contours and conditions.

The City of Tampa shall not be a party to any agreement between the Contractor and private property owner(s).

Regardless of the location of stockpiling, it shall be the Contractor's responsibility to make sure that stockpiling in no way constitutes a public hazard, nuisance and does not interfere with the natural surface runoff in the area.

SP-4.05 DEWATERING:

Dewatering is the sole responsibility of the Contractor. Contractor is responsible for furnishing, installing and maintaining all required and necessary equipment to properly execute the dewatering operation. Any dewatering related to this project will not be a separate bid item. The cost shall be included in the price of the facility being installed at that location and/or any related pay items.

SP-5.01 UTILITY PROTECTION CONSIDERATIONS:

The Contractor shall protect all utilities and other facilities within and adjacent to the construction as covered in Section G- 1.03, unless a utility firm has conclusively indicated, or such is shown on the plans, that the certain adjustment, removal, reconstruction, or protection of the utility's facility will be performed by that respective utility.

The Contractor shall make every effort to protect all water mains. If the main is damaged or lost, the Contractor shall replace the affected line in strict accordance with the City of Tampa Water Department Specifications and Construction Standards, latest edition, at no extra cost to the City, and he shall assure that service is maintained at all times.

The Contractor shall make every effort to protect all sanitary sewer lines. If the main is damaged or lost, the Contractor shall replace the affected line in strict accordance with the City of Tampa Department of Sanitary Sewer Specifications and Construction Standards, latest edition, at no extra cost to the City.

It shall be the Contractor's responsibility to preserve all existing sanitary sewer services without interruption during the construction of storm sewers or the repairs or reconstruction of sanitary sewers.

When the construction of storm sewers, repair or reconstruction of sanitary sewers has been completed, all temporary connections shall be removed. Sewers shall be cleaned of all settled solids.

The cost of handling sanitary sewers during construction, including cost of all labor, materials, and equipment or other items incidental to completing the job, shall be included in the contract price as bid for the contract items and no separate payment shall be made.

It will be the Contractors responsibility to preserve all existing ditches, swales, force main, gravity main, laterals, etc., and other stormwater appurtenances and facilities pertaining thereto whether owned or controlled by City, other governmental bodies or privately owned by individuals, firms or corporations.

Any temporary measures constructed shall first be approved by the Engineer. The cost of such temporary measures shall be included in the contract price bid for storm sewer items and no separate payment shall be made.

The Contractor shall furnish, install, and remove sheeting and shoring and other protective measures as may be necessary to satisfactorily accomplish the construction of this project. The cost of such sheeting and shoring and other protective measures shall be included in the unit prices as bid for the storm sewer items and no separate payment shall be made.

The above provisions shall only apply to water, sanitary sewer and drainage lines, which are, in general parallel to the line under construction.

SP-5.02 ADJUSTMENT OF UTILITIES AND PUBLIC SERVICE INSTALLATIONS:

Storm and sanitary sewer manhole covers, valve covers or boxes, water meter boxes, and vaults located within the limits of construction of the pavement or sidewalk area to be constructed, reconstructed or overlaid shall be relocated or adjusted by the Contractor to conform with the new pavement or sidewalk elevation as a part of the work of constructing or reconstructing the pavement or sidewalk and no separate payment will be provided therefor.

Appurtenances of other utilities will be relocated or adjusted by the utility company owning or having jurisdiction over the respective utility.

Private and Franchise Utilities include, but not limited to, electrical, cable TV, fiber optic, communication and high-speed data systems. The cost of coordinating, providing, revising and updating any information necessary for avoidance of the high voltage power under the proposed Riverwalk shall be included in the cost for Mobilization and no separate payment shall be made.

SP-5.03 REMOVAL OR ADJUSTMENT OF PUBLIC UTILITIES:

The City will make necessary arrangements with public utility owners, other than the City of Tampa Water and Sanitary Sewers Departments, for removal or adjustments of existing utilities, whether shown or not shown on the plans, where such removal or adjustment is determined by the Engineer to be essential to the performance of the required construction, provided normal construction procedures are used by the Contractor.

Relocations or adjustments requested by the Contractor on the basis of the use of a particular method of construction or a particular type of equipment shall not be considered as being essential to the construction of the project if other commonly used methods or equipment could be employed without the necessity of relocating or adjusting the utility. The Engineer will determine the responsibility for any such adjustment of utilities.

Relocations or adjustments requested for the Contractor's convenience or because of delivery of materials to the job site shall be the responsibility of and at the expense of the Contractor.

The Contractor shall be required to coordinate its activities with relocation work by the utilities. A schedule for relocation work will be presented to the Contractor at the pre-construction conference. This schedule may be adjusted to "fit" the Contractor's proposed schedule, but it will include periods during which the Contractor's ability to perform work in the relocation area will be limited, with no additional compensation.

Payment for removal or adjustment of City of Tampa utilities shall be made under the appropriate material item.

SP-6.01 USE OF CITY WATER SYSTEM:

A Tampa Water Department portable meter shall be utilized when obtaining temporary potable water from the City system during the duration of the project.

SP-6.02 WATER MAIN CONSTRUCTION AND/OR OFFSET:

The work specified consists of the offset and/or construction of new water mains to include tees, fittings, valves, valve box, thrust blocks, joint restraints, hydrants, meters and other related appurtenances in conformity with the location, lines, and grades shown in the plans or as directed by the Engineer. All materials and workmanship shall be in accordance with City of Tampa Water Department Technical Specifications for Water Main Relocation (WR) and Construction Standards and Materials Specifications, latest edition and are available from the Tampa Water Department.

SP-6.03 WATER SERVICE CONNECTIONS:

A new two-inch water service connection will be installed by City of Tampa Water Department along Doyle Carlton Drive. The Contractor will tie into this connection to provide service to both an irrigation system and a potable water system. The potable water system will provide service for one (1) drinking fountain and eleven (11) quick-coupling valves.

General: The water main, fittings and appurtenances shall be installed outside the surface of the Riverwalk to the greatest extent possible. The water system shall include, but not limited to pipe, quick-coupling valves, connectors, fittings, necessary for the installation of a water service, and any other components for a complete and functioning system. A flush-mount cover for the quick-coupling valve shall be provided by the Contractor at the locations indicated. Installation shall be per manufacturer's recommendations.

Compensation: The quantity to be paid for the potable water system under this section shall be the length in lineal feet authorized, complete. The plan lengths shall be used to determine the lengths for payment. The quantity to be paid for the flush-mount covers for the quick-coupling valves under this section shall be per each unit authorized, complete in-place and accepted.

Such price and payment shall be full compensation for all work specified under this section and shall include all materials, equipment, tools, labor and materials necessary to complete the work.

Payment for this work shall be made under:

Item SP-6.03.1 Water Service Main	Per Linear Foot
Item SP-6.03.2 Water Flush-Mounted Quick-Coupler and Cover	Per Each
Item SP-6.03.3 Drinking Fountain with Pet Fountain and Concrete Pad	Per Each

SP-8.01 FILLING LOW AREAS WITHIN CITY LIMITS:

The Contractor under Sec. 21-27 (Permit Requirements) of the City of Tampa Code is prohibited from filling any area public or private (except where shown on the construction plans) within the project limits or anywhere within the City limits without a permit.

For filling and/or grading any area, the owner of such area shall obtain a permit from the Stormwater Management Division, Transportation and Stormwater Services Department. The owner shall submit existing and proposed

contour plans of the area to be filled and the adjacent land for determination if a permit could be issued. Drainage patterns cannot be altered to the detriment of neighboring property owners or public rights-of-way.

The Contractor shall not deposit any fill material within the City limits without an approved permit. A copy of the permit shall be submitted to the Engineer, by the Contractor prior to any filling or grading operation.

SP-8.02 ENVIRONMENTAL PROTECTION:

The Contractor will be held liable for the violation of any and all environmental regulations. Violation citations carry civil penalties and in the event of willful violation, criminal penalties. The fact that the permits are issued to the City does not relieve the Contractor in any way of its environmental obligations and responsibilities.

SP-8.05 CONSTRUCTION OF PAVED SUMP BETWEEN INLET AND EDGE OF PAVEMENT:

Whenever the plans indicate construction of a modified inlet, the Contractor shall construct a standard curb inlet with a concrete apron as shown in the details, the addition of the concrete apron being the only distinction between a standard inlet and a modified inlet.

If the edge of the concrete apron will be located immediately adjacent to the edge of existing asphalt pavement, and that pavement is not to be repaired or replaced as part of the construction, the Contractor shall saw cut the asphalt pavement to provide a neat clean edge and the concrete apron shall use that edge as part of the form.

If the edge of the concrete apron does not touch the edge of existing pavement, the Contractor shall construct a transitional apron, with 3:1 mitered edges, to connect the edge of the concrete apron to the edge of pavement. This transitional apron shall be constructed of the same material composition as the existing pavement.

All costs to construct the required concrete apron and any required transitional apron shall be included in the contract bid item of that modified inlet and no additional payment shall be made.

Wherever the plans indicate an inlet, either curb or grating type, to be placed outside the edge of existing pavement or curb limit so as to be in proper position for future street widening, the Contractor will be required to construct a paved sump between the edge of such existing pavement and inlet opening. The type of pavement for such sump areas shall be similar and equal to that of the adjacent roadway to which it is connected. Payment shall be made under the applicable items for street replacement.

SP-8.08 STANDARD FOR FILTER FABRIC:

Unless specified otherwise on the plans, filter fabric shall be nonwoven fabric per F.D.O.T. Specification Sections 514 and 985. Payment for furnishing and placing the filter fabric shall be included in the contract price for the item or items to which it is incidental.

SP-8.10 EROSION CONTROL PLAN:

In addition to the requirements of Section 104, the Contractor shall be required to submit an erosion control plan to the Engineer at the time of the preconstruction conference. The erosion control plan shall indicate in detail all measures proposed by the Contractor to meet its erosion control obligations, including all items required to meet permitting conditions for the project. Any phasing of the erosion control plan shall also be shown.

The cost of providing, revising and updating the erosion control plan shall be included in the unit costs of the various contract items and no separate payment shall be made. The minimum requirements of the Erosion Control Plan is the Stormwater Pollution Prevention Plan as shown in the Plans.

Floating Turbidity Barrier and Erosion Sediment Barrier (Staked Silt Fence) Compensation: The quantity to be paid for under this section shall be the length per unit in lineal feet authorized, complete in-place and accepted.

Compensation: the quantity to be paid for under this section shall be per each unit authorized, complete in-place and accepted.

Item 104-10-3	Staked Silt Fence	per Linear Foot
Item 104-11	Floating Turbidity Barrier	per Linear Foot

SP-9.01 EXISTING SIDEWALKS, DRIVEWAYS AND PARKING AREAS:

Connect new Riverwalk construction to existing Riverwalk segments at Straz Center and Water Works Park. Refer to Plans for connection details.

SP-9.04 CONCRETE CURB OR CURB-AND-GUTTER:

Expansion joints in concrete curb or curb-and-gutter shall be placed at all inlets, radius points, horizontal and vertical points of intersection (P.I.'s), and as otherwise directed by the Engineer. They shall be located at intervals of 100 feet between other expansion joints or ends of a run.

SP-10.01 GRASSING AND/OR SODDING:

Lawn, road shoulders, and all areas that do not have well established grass at the time of construction and are disturbed during construction may be grassed, as directed by the Engineer. All areas shall be properly prepared by removal of construction debris and rocks, and soil preparation and fertilization or placement of topsoil as directed by the Engineer. Lawn, road shoulders, and other locations where construction shall occur that are well maintained and show healthy grass at the time of construction, or where otherwise directed by the Engineer, shall be sodded with either Pensacola or Argentine Bahia Type or St. Augustine type sod as applicable.

All areas that have a potential for being eroded by flowing surface water shall be sodded as directed by the Engineer including 2' adjacent to the new pavement edges.

Payment shall be made under:

Item No. 162-2	Sod	S.Y.
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SP-10.02 TREE REMOVAL:

The work included in this Section consists of removal of all trees within the area of construction with trunks 5 inches or more in diameter. Tree removal shall comply with the City of Tampa Tree Ordinance. The Contractor will be responsible for obtaining the necessary permit(s) and paying the necessary fees.

All trees with trunks less than 5 inches in diameter are not included in this section. The cost of removing trees less than 5 inches in diameter shall be included within the various contract items and no additional payment shall be made.

The diameter of the trunk shall be determined by measuring the circumference of the trunk at a point 4.5 feet above the existing ground level and dividing by 3.14.

All stumps and roots shall be removed to a depth of at least 2 feet below the finished grade.

Disposal of timber, stumps, roots or any other material resulting from the tree removal operation shall be the sole responsibility of the Contractor. Such disposal shall have the approval of the Engineer.

Payment shall be for full compensation for all work, equipment, tools, labor and any incidentals required for completion of the work. Payment for tree protection and tree cutting or trimming shall be included in the lump sum price bid for Clearing and Grubbing and no separate payment shall be made.

SP-10.04 ROOT PRUNING:

The Contractor shall make provisions for tree protection to the satisfaction of the Engineer prior to any excavation or clearing and grubbing. All applicable site inspections by the City of Tampa Parks Department and all permits required for tree work shall be obtained by the Contractor prior to commencing work.

The Contractor shall furnish all labor, materials, equipment and services necessary to prune the tree roots as shown on the plans, as specified, and as directed by the Engineer. The Contractor shall provide root pruning services only as shown on the plans and as directed by the Engineer.

All root pruning shall be performed by a qualified, licensed tree professional as approved by the Engineer. Root pruning shall be performed with a chain saw, stump grinder, trencher, Dasco root pruner or equal, as approved by the Engineer.

Root pruning along pipelines, manholes, inlets, and other underground appurtenances and structures will be included for payment under this contract item. The quantity of root pruning, in linear feet, to be measured for payment will be the actual length of root pruning performed within the limits shown on the plans, in the specifications, or as directed by the Engineer. Depth of root pruning shall be as directed by the Engineer.

All roots designated to be removed shall be severed at the perimeter of the designated protected radius leaving a smooth, uniform section at the remaining root end to prevent root damage. No excavation shall occur within the radius of the protected area.

The work includes all cutting, excavation, removal, hauling, and disposal of roots; filling, grading, mulching, barricading and other appurtenant work complete, in place.

Payment shall be made under:

Item No. 110-15-1	Root Pruning	L.S.
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SP-10.05 Transplanting Trees:

The City of Tampa Park's Department shall transplant existing trees as shown on the plans. The location of the tree(s) shall be designated by the Parks Department.

SP-10.06 RESTORATION OF LANDSCAPING WITHIN RIGHT-OF-WAY:

The Contractor shall remove any shrubbery, trees less than 5 inches in diameter, other landscaping, walkways, planters, other landscaping, and irrigation systems which are in conflict with the proposed construction. These items shall be restored, relocated, and/or reconstructed as shown in the plans or as directed by the Engineer.

Cost of removing, restoring, relocating, and reconstructing the above items shall be included in the lump sum price for Clearing and Grubbing, and no separate payment shall be made.

SP-10.07 TREE PROTECTION:

Tree barricades shall be constructed and maintained at trees indicated on the plans as "to be protected" and/or as directed by the Engineer. Generally, barricades are to be placed ten (10) feet from the trunk of each protected tree.

Barricades shall be constructed of commercially available pine lumber, as follows: Vertical members shall be 2" x 2" or larger, generally spaced twelve (12) feet apart. Horizontal members shall consist of one (1) 1" x 2" board.

The Contractor shall provide the services of an approved licensed tree professional when it is necessary to trim or cut a branch from a tree.

Payment for tree protection and tree cutting or trimming shall be included in the lump sum price bid for Root Pruning and no separate payment shall be made.

SP-10.09 TREE TRIMMING:

In addition to Tree Trimming required in the FDOT Standard Specification Section 110, the Contractor shall trim tree limbs and shrubbery to a height of 8 feet above sidewalks and to the right-of-way in the project area, and as directed by the Engineer.

Cost of trimming and disposal of these items shall be included in the lump sum price for Root Pruning, and no separate payment shall be made.

SP-10.10 LANDSCAPE INSTALLATION

The Contractor shall provide all labor, equipment and materials necessary to furnish and install plant material and mulch as shown on the "Landscape Plans". The work shall be in accordance with the City of Tampa Parks Department Specification Sections 02900, 02930 and 02945 that are made a part of these specifications. The Contractor shall attend a mandatory pre-installation meeting with the City.

Any costs associated with the work that is not directly provided for by the bid item, but incidental to completion of the Landscaping, shall be prorated and included in the various contract pay items, and not separated payment shall be made. Ninety (90) day maintenance shall be included.

Payment shall be made under:

Item No. 999-2	Landscape Complete	LS
Item No. 2900-1	90 Day Maintenance	Per Month

SP-10.11 IRRIGATION SYSTEM CONSTRUCTION:

The Contractor shall provide application and related fees, service connections, coordination for irrigation meters, and all labor, equipment and materials necessary to construct irrigation systems as shown on the "Irrigation Plans". The exact locations of meters will be coordinated in the field. The Contractor shall attend a mandatory pre-installation meeting with the City. The work shall be in accordance with the City of Tampa Parks Department Specification Section 02440 that is made a part of these specifications. At the conclusion of the project, the meters will be transferred to the City of Tampa.

Payment shall be made under:

Item No. 590-70	Irrigation System	L.S.
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SP-10.12 SITE FURNITURE

The Contractor shall provide all labor, equipment and material necessary to install all site furnishing as shown on the Construction Plans. Site furnishings include the following:

1. Bench
2. Backless Bench
3. Cube Bench
4. Shade Structure w/Swing Bench
5. Bicycle Rack
6. Trash Receptacle
7. Bicycle Repair Station

The work shall be in accordance with Specification Sections 02872 and 02874 that is made part of these specifications. Refer to Construction Plans for description and installation of site furniture.

Payment shall be made under:

SP-10.12.1	Bench	EA
SP-10.12.2	Backless Bench	EA
SP-10.12.3	Cube Bench	EA
SP-10.12.4	Shade Structure/Swing	EA
SP-10.12.5	Bicycle Rack	EA
SP-10.12.6	Trash Receptacle	EA
SP-10.12.7	Bicycle Repair Station	EA

SP-10.13 SCREEN WALLS

The screen walls under the Laurel Street Bridge and I-275 Bridge will be made up of expanded metal panels, each of which will be mounted so they can be removed (unbolted/dismantled) to facilitate required inspection access to the concrete bridge structure. Screen walls of expanded metal strapped to the concrete columns under I-275 and bolted to metal lamp posts under Laurel Street Bridge. The mounting assemblies will be structural supports designed to withstand wind loading and the panels will be bolted in place using tamper resistant hardware to protect against vandalism. The wall surface will consist of stainless steel expanded-metal. Refer to Technical Specifications Section 05750 Decorative Metal Panel Screen Wall.

The monument for Fortune Taylor shall be fabricated and installed as depicted in the plans.

Such price and payment for the screen walls will be full compensation for all work necessary to complete the work including materials, equipment, tools, labor for the fabrication, furnishing and installation of the screen walls..

Payment shall be made under:

SP-10.13.1	Screen Wall under Laurel Street Bridge	per EA
SP-10.13.2	Screen Wall under I-275 Bridge	per EA
SP-10.13.3	Monument Stand/Plaque/Foundation	per EA

SP-10.14 ART SCULPTURES

Concrete foundations for art sculptures shown on the plans shall be designed and the Contractor shall coordinate with the City of Tampa for orientation of sculptures before beginning construction of the foundations.

The Contractor shall be responsible for all activities necessary to procure, transport and install the art sculptures.

Such price and payment shall be full compensation for all work specified under this section; on the plans and shall include all materials, equipment, tools, and labor necessary to complete the work.

Payment shall be made under:

Item No. SP-10.14.1	America America Art Sculpture	L.S.
Item No. SP-10.14.2	Levitating Nimbus Art Sculpture	L.S.

SP-10.15 CRUSHED OYSTER SHELL GROUNDCOVER

Crushed Oyster Shell Groundcover shall be constructed in accordance with Technical Specification Section 02735 – Crushed Oyster Shell Groundcover that is made a part of these Specific Conditions. Groundcover shall be as located on the Contract Plans, to the neat dimensions and elevations indicated therein. Groundcover shall include, but not limited to excavation (cut/fill) preparation of subgrade, compaction, steel edge treatment, herbicide treatment, weed barrier, and crushed oyster shell surface course.

Compensation: the quantity to be paid for under this section shall be per square yard to thickness indicated, complete in-place and accepted. Such price and payment shall be full compensation for all work specified under this section and shall include all materials including steel edge treatment, herbicide, weed barrier and crushed oyster shells; equipment; tools; labor and materials necessary to complete the work.

Payment will be made
under:

Item SP-10.15	Crushed Oyster Shell Groundcover – 4" - (Furnish & Install)	per square yard (SY)
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SP-11.01 RESERVED PARKING SIGNS IN PARKING METER AREAS

The Contractor shall reimburse the Assets and Logistics Department, Parking Division located at 107 N. Franklin Street, Tampa, Florida 33602 for any and all metered parking spaces occupied or made unusable or unavailable as a result of construction activity by the Contractor. Private automobiles may not be parked in any reserved space.

In order to receive temporary or permanent reserved signs in parking areas which are regulated by parking meters, there shall first be paid to the Parking Revenue Fund for the elimination of each such meter a charge based on the following schedules:

1. In one dollar and twenty-five cents (\$1.25) per hour metered areas, a charge based on twelve dollars and fifty cents (\$12.50) per day; sixty-two dollars and fifty cents (\$62.50) per week north of Madison Street and eighty-seven dollars and fifty cents (\$87.50) per week south of Madison Street; with a minimum of ten dollars (\$10.00) per rental agreement.
2. In fifty cents (\$0.50) or less per hour metered areas, a charge based on five dollars (\$5.00) per day; thirty-five dollars (\$35.00) per week; with a minimum of ten dollars (\$10.00) per rental agreement.
3. In 2 hours for \$0.25 metered areas, a charge based on one dollar and twenty-five cents (\$1.25) per day; eight dollars and seventy-five cents (\$8.75) per week; with a minimum of ten dollars (\$10.00) per rental agreement.

In the event that an entire block or area of parking meters are reserved for a period of 90 days or longer, the Contractor may arrange a payment schedule with the Assets and Logistics, Department Parking Division. Said

payment schedule will be paid on a monthly basis after a deposit equivalent to the first and last month rental charges has been received by the Parking Division prior to commencement of construction.

Any meter or meters which may sustain damage due to construction activities in the immediate area must be removed by the Parking Division. The meter removal and installation charge is ten (10) times the hourly rate per meter. Failure to have a meter(s) removed will result in the Contractor being held liable for damage occurring to said meter(s) and further, the Contractor will be required to reimburse the Assets and Logistics Department, Parking Division for meter(s) repaired or replaced.

Payment shall be made under:

Item No. SP-11.01	Reserved Parking Signs in Parking Meter Areas	Lump Sum (LS)
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SP-11.02 USE OF EXPLOSIVES:

Explosives will not be used on the work except when authorized by the Engineer. The use of same, if authorized, shall conform to laws or ordinances which may pertain to the use of same and the utmost care will be exercised by the Contractor so as not to endanger life or property. The Contractor will assume full responsibility in connection with use of any explosives even though authorized. Explosives will not be stored within the City limits.

SP-11.03 EXISTING PUBLIC FACILITIES:

Existing public facilities that are removed by construction operations under this contract shall be replaced by the Contractor to City of Tampa specifications. These items shall include all public benches, light poles, shelters, roadway signs, etc., and replacement of these items shall be considered incidental to the cost of construction and no separate payment will be made.

SP-11.04 METAL PRODUCTS:

All metal products incorporated into the project must be tested by and found to conform to applicable specifications by an approved private testing laboratory prior to use on the project. These acceptance reports must also be made available to the Construction Engineer and to be placed in its office file prior to use on the project.

SP-11.05 WATER FOR DUST CONTROL:

The work specified in this section consists of the application of water within the limits of construction of the project or on streets used as detour routes in connection with the project, in accordance with these specifications. All dust control operations shall be performed by the Contractor at the time, location, and in the amount ordered by the Engineer. The application of water shall be under the control of the Engineer at all times. No payment will be made for any work performed or water used to control dust where it is applied without authorization of the Engineer. Water ordered by the Engineer to be applied on Saturdays, Sundays, or legal holidays will be paid for at the contract unit price as bid for the time of dust control work involved and no additional compensation will be allowed therefor.

Water used for dust control shall be free from pollution to the extent that its use will not constitute a nuisance or health hazard to anyone living in close proximity to the areas where it is used.

The quantity of water measured by an approved device or other means of determining the measurement of water as approved by the Engineer will be paid for at the contract unit price per thousand gallons for this item, which price and payment shall be full compensation for the cost of all materials, equipment and the work for watering.

Payment will be made under:

Item No. SP-11.05	Water for Dust Control	1000/gal
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SP-11.12 RESTORATION OF MONUMENTATION:

The Contractor shall, with no additional payment, re-establish any permanent survey or mapping monumentation which is disturbed or destroyed in the course of the construction project.

SP-11.16 CONTINGENCY ALLOWANCE:

Payment from the Contingency Allowance shall be made only at the direction of the Engineer under:

Item No. SP-11.16	Contingency Allowance	L.S.
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SP-11.17 RIVERWALK WAYFINDING SIGNAGE:

The following wayfinding signs and markers are required for this Project in accordance with "The Tampa Riverwalk Wayfinding and Interpretive Signage Program" document Dated July 18, 2011. These signs do NOT require electrical connections. Exact locations of the signage to be coordinated with the City.

PED.3R Directional Signs:

Design for the PED.3R directional signs shown on the drawings are provided by MERJE. The Contractor shall fabricate and install the signs and sign structures based on the shop drawings provided using a sign fabricator recommended and approved by the City. The Contractor is responsible for the design and preparation of shop drawings for the sign and sign structure support foundations. Sign message and content to be provided by the City.

PED.4R Solar Map Signs:

Design for the PED.4R solar map sign shown on the drawings are provided by MERJE. The Contractor shall fabricate and install the sign and sign structures based on the shop drawings provided using a sign fabricator recommended and approved by the City. The Contractor is responsible for the design and preparation of shop drawings for the sign and sign structure support foundation. Sign message and content to be provided by the City.

Riverwalk Logo Plaques for Columns:

Design, preparation of shop drawings, fabrication, and installation of logo plaques for the columns shown on the drawings shall be provided by Contractor. Sign fabricator shall be as recommended and approved by the City. The Contractor is responsible for preparation of shop drawings and construction of the columns and related foundations as indicated. Sign message to be provided by the City.

Mile Markers in Riverwalk Path:

Mile markers will be provided by the City for installation in the Riverwalk path by the Contractor as shown on the drawings. Contractor shall prepare and submit placement and installation shop drawings for review and approval. Coordinate with City for delivery, storage and protection of mile markers until time of installation.

All design drawings furnished by MERJE are to be used for reference only and are not to be used for construction drawings.

Price and payment for the Riverwalk Wayfinding Signage will be full compensation for all work necessary to complete the work including materials, equipment, tools, labor for the fabrication, furnishing and installation of the signage.

Payment shall be made under:

Item No. SP-11.17	Riverwalk Wayfinding Signage (Fabrication, Furniture and Installation)	L.S.
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SP-11.18 SKATEBOARD DETERRENTS

The Contractor shall furnish and install skateboard deterrents. They shall be low profile in appearance, complementary to the aesthetics and environmental conditions of the Riverwalk.

Product to be approved by City Engineer; must meet Buy America Requirements; and furnished and installed per manufacturer specifications at locations to be determined by City staff.

Payment from the Skateboard Deterrent Allowance shall be made only at the direction of Engineer under:

Item No. SP-11.18	Skateboard Deterrent Allowance	LS
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SP-13.01 STANDARD MANATEE CONSTRUCTION CONDITIONS

The Contractor shall comply with the following manatee protection construction conditions:

- a. The Contractor shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees.

All construction personnel are responsible for observing water-related activities for the presence of manatee(s) and shall implement appropriate precautions to ensure protection of the manatees.

- b. The Contractor shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972, The Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act. The Contractor may be held responsible for any manatee harmed, harassed, or killed as a result of neglect or intentional activities related to construction.
- c. Siltation barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored at least daily to avoid manatee entrapment. Barriers must not block manatee entry or exit from essential habitat.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.

- f. Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL-FMP (1-800-342-5367). Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-407-562-3909) in south Florida.
- g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the Contractor upon completion of the project. A sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted in a location prominently visible to water related construction crews. A second sign must be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should be at least 8½" by 11" which reads: *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shut down if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-407-562-3909) for south Florida.*
- h. The Contractor shall maintain a log detailing sightings, collisions, or injuries to manatees if they occur during the contract period. A report summarizing sightings and incidents shall be submitted to the Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management, 630 South Meridian Street, Tallahassee, Florida 32399-1600 and to the U.S. Fish and Wildlife Service Office, 6620 South Point Drive South, Suite 310, Jacksonville, Florida 32216-0912. This report must be submitted annually or following the completion of the project if the contract period is less than one year. Contact the BPSM at (1-850-922-4330) if there are questions regarding these standard construction conditions.
- i. At least one person shall be designated as a manatee observer when in-water work is being performed. The person shall have experience in manatee observation, and have polarized sunglasses to aid in observation. The manatee observer shall be on-site during in-water construction activities and will advise personnel to cease operation upon sighting a manatee within fifty (50) feet. Movement of a work barge, other associated vessels, or in-water work should not be performed at night when the possibility of spotting manatees is negligible.

The cost of providing and maintaining instructions to construction employees and the fabrication and installation of Manatee Signage shall be included in the unit cost of various contract items and no separate payment shall be made.

TEMPORARY MANATEE SIGNS

For standard manatee construction conditions
Revised October 1996

The *Caution: Manatee Area* signs, (3 feet by 4 feet) are available through the companies listed below and may also be available from other local suppliers throughout the state. The Contractor should contact sign companies directly to arrange for shipping and billing.

Cape Coral Signs & Designs, Inc.
1311 Del Prado Boulevard
Cape Coral, Florida 33990
1-800-813-9992

JADCO Signing, Inc.
309 Angle Road
Ft. Pierce, Florida 34947
561-489-8772

813-772-9992
FAX 813-772-9992

FAX 561-489-8757

Municipal Supply and Sign Company
Post Office Box 17
Naples, Florida 33939-1765
1-800-329-5366
813-262-4639
FAX 813-262-4645

Universal Signs & Accessories
2912 Orange Avenue
Ft. Pierce, Florida 34947
1-800-432-0331
407-461-0665
FAX 407-461-0669

A second sign must be used if vessels/barges will be used, should be at least 8½" by 11" and should read:

Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shut down if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-407-562-3909) for south Florida.

An example is enclosed. This example can be copied and used during construction activities.

Manatee Habitat

Idle speed is required if
operating a vessel in the
construction area.

All equipment must be
SHUT DOWN
if a manatee comes within
50 feet of operation.

Any collision with and/or injury to a manatee shall be
reported immediately to the **Florida Marine Patrol** at

1-800-DIAL FMP
(1-800-342-5367).

The U.S. Fish and Wildlife Service should also be contacted in
Jacksonville (1-904-232-2580) for north Florida or in
Vero Beach (1-407-562-3909) for South Florida

SP-13.02 STANDARD COORDINATION WITH US COAST GUARD

Coordination with US Coast Guard Sector, St. Petersburg is required before the placement of barges or rigging of equipment in navigable waters of the United States. USCG Contact information is:

Lieutenant Brett Sillman
(813)228-2191, ext 8146
Brett.S.Sillman@uscg.mil

Cc: Michael Lieberum
(305)415-6744
Michael.B.Lieberum@uscg.mil

SP-13.03 DISCOVERY OF CULTURAL REMAINS

If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The Contractor shall contact the City of Tampa Project Manager, who in turn shall contact the City of Tampa Historic Preservation staff. Federal Highway Administration, and the Florida Department of State, Division of Historical Resources (DHR), Compliance and Review Section/State Historic Preservation Officer (SHPO). Project activities should not resume without written authorization from the FHWA and DHR/SHPO.

SP-13.04 SPECIAL CONSTRUCTION PROJECT COORDINATION

Work shall be sequenced such that the following occur:

1. Work to be performed is to be so not to interfere with events that have been scheduled at the Straz Center facility. Coordinate with the City and facility prior to work being performed.
2. Straz Center activities/events will be on-going. A schedule of events will be issued at the pre-construction meeting. The Straz Center may consider other windows of construction time dependent on Contractor's actual schedule in coordination with Straz Center's schedule.

SP-14.01 EXCAVATION FOR STRUCTURES & REMOVAL OF EXISTING STRUCTURES:

Regular excavation and embankment shall comply with Section 120 of the FDOT Standard Specifications, as applicable.

Excavations required for the construction of piles, foundations and abutment shall comply with Sections 125 and 455-1 of the FDOT Standard Specifications, as applicable.

Remove existing structures, railings, and railing system (with and without light units), bollards, valves, valve boxes, electrical boxes, and other existing incidental items to be removed. Piles shall be pulled and completely removed. Do not interrupt existing utilities serving occupied facilities except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for

receiving new work. Finished surfaces of patched area shall be flush with the adjacent existing surface and shall match the existing adjacent surface as closely as possible.

All work specified in this Section shall be considered incidental to the cost of construction and no separate payment will be made.

SP-14.02 CLEARING AND GRUBBING:

Comply with Section 110 of the FDOT Standard Specifications, as applicable.

Trim, protect, and leave standing desirable trees, with the exception of such trees as the Engineer may designate to be removed. Remove and dispose of all trees, stumps, roots and other such protruding objects, buildings, structures, appurtenances, 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.

Price and payment will be full compensation for all clearing and grubbing required for the installation of the Riverwalk walkway system 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., as specified herein, except for any areas designated to be paid for separately or to be specifically included in the costs of other work under the Contract.

Payment shall be made under:

Item 110-1-1	Clearing and Grubbing	Per Lump Sum
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SP-14.03 REMOVAL OF EXISTING CONCRETE STRUCTURES:

Removal of existing concrete structures including, but not limited to; sidewalks, curbs, and other miscellaneous concrete structures and appurtenances shall comply with Section 125 of the FDOT Standard Specifications, as applicable. Refer to Plans for information and limits of concrete demolition and excavation.

Demolition of existing concrete seawall and cap is not included under this item and is Item 110-73.

Demolition shall be to the limits indicated on the plans. The Contractor is responsible for locating, identifying and protecting existing structure, utilities and landscaping not specified for removal. All temporary shoring or bracing is the responsibility of the Contractor and shall be included in the unit price for this work. Work shall be performed to prevent debris from entering water. Debris that enters water shall be removed by the Contractor to the satisfaction of the Engineer at no additional cost to the City.

Payment for concrete demolition shall include selective demolition of concrete, brick, reinforcing steel, miscellaneous steel, all necessary equipment, floats and containment systems as part of the unit price payment for the item. Unit price payment shall include removal/disposal of the material.

SP-15.01 PORTLAND CEMENT CONCRETE:

All concrete (structural) shall be in accordance with Section 346 and Section 415 of the FDOT Standard Specifications.

All precast concrete shall be in accordance with Section 450 for the FDOT Standard Specifications.

Calcium nitrite shall be used as a corrosion inhibitor admixture in all concrete components (precast and cast-in-place) for the Project's structures, including the superstructure and substructure.

Surface Finishes:

1. Cast-In-Place Concrete Gravity Wall, Concrete Vehicle Barrier Wall, and Concrete Columns shall be constructed using integrally colored concrete in color as indicated in SP-15.04 – COLORED CONCRETE, and as shown on the drawing. Use a light sand blast finish on exposed surfaces of gravity walls and columns as indicated. Provide a 10-inch exposed aggregate band as shown on Drawing H314 to vehicle barrier wall. Use aggregate types, colors, and medium sandblast finish on this band as indicated.
2. Horizontal cast-in-place walkways shall be natural grey concrete color as shown on the drawing. Apply a medium broom finish to side bands and a medium sandblast finish to field areas to expose white and black aggregate specifically installed in these areas for the purpose and design intended.
3. Identification signage (by Merje) located in columns are included in SP-11.17 – RIVERWALK WAYFINDING SIGNAGE however, installation of same in the concrete columns is included in this Work.
4. Samples:

There are several types of sandblasted, exposed aggregate, colored, and mechanical concrete finishes shown on the Plans. Submit a minimum of six (6) 12" x 12" x 1" thick samples for each finish indicated showing different ranges of proposed sandblast, exposed aggregate, color and mechanical finishes for Engineer and City's review.
5. Measurement /Payment:

Colored concrete, finish textures, aggregate banding, and installation of identification signage in the columns shall be incidental to cost of the gravity walls, barrier walls, walkways, and columns. No separate measurement or payment will be made.

All other concrete elements shall be finished in accordance with Section 400 of the FDOT Standard Specifications and per the following:

Element	FDOT Standard Specifications
Precast Concrete	450-10-5.4 for Top, 450-10-5.4 Class 1 Surface Finish (sides)
Cast-In-Place Slabs	Rough float on top & 400-15.2.4 Class 3 Surface Finish (sides)
Cast-In-Place Substructure	400-15.2.4 Class 3 Surface Finish

SP-15.03 CONCRETE SEALER

The Contractor shall submit for approval by the Engineer a water-based silicone acrylic colored concrete sealer system applied to vertical integrally colored concrete surfaces only.

SP-15.04 COLORED CONCRETE:

The Contractor shall provide all labor, equipment and material necessary to install colored concrete as shown on the Construction Plans. All colored concrete shall be in accordance with manufacture's specifications.

Basis of Design: Scofield "Sunset Red" SG160-1

SP 16.01 HELICAL PULLDOWN MICROPILE FOUNDATIONS

Furnish all necessary engineering and design services, supervision, labor, tools, materials, and equipment to perform all work necessary to install the screw piles per Technical Specification Section 02460 – HELICAL PULLDOWN MICROPILE FOUNDATIONS included in these Specific Provisions and as shown on the Drawings. The Contractor shall install an HPM that will develop the load capacities as detailed on the Drawings.

Measurement will be made as follows for the quantity, as specified or directed by the City:

1. Mobilization will be measured on a lump sum basis.
2. HPM installation will be measured on a per linear foot basis, installed and accepted, including anchorage to pile cap.
3. Pre-Production Verification load tests will be measured per each.
4. Proof tests will be measured per each.
5. Equipment and manpower time required for removal of obstructions such as buried debris will be measured per hour, as a contingency item.

The final pay quantities will be the design quantity increased or decreased by any changes authorized by the City. The quantities accepted for payment will be paid for at the contract unit prices for the following items:

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>
SP-16.01-1	Helical Pulldown Micropiles w/Anchorage (Furnish & Install)	Per Linear Foot (LF)
SP-16.01-2	Helical Pulldown Micropiles - Verification Load Tests	Per Each (EA)
SP-16.01-3	Helical Pulldown Micropiles - Proof Load Tests	Per Each (EA)

The contract unit prices for the above items will be full and complete payment for providing all design, materials, labor, equipment, and incidentals to complete the Work.

SP 16.02 HELICAL TIEBACK ANCHORS

Furnish all necessary engineering and design services, supervision, labor, tools, materials, and equipment to perform all work necessary to install the helical tieback anchors per Technical Specification Section 02493 – HELICAL TIEBACK ANCHORS included in these Specific Provisions and as shown on the Drawings. The Contractor shall install a helical anchor that will develop the load capacities as detailed on the Drawings. This also includes provisions for load testing to verify tieback capacity and deflection.

Measurement will be made as follows for the quantity, as specified or directed by the City:

1. Mobilization will be measured on a lump-sum basis.

2. Helical tieback installation will be measured on a per linear foot basis, installed and accepted, including pile top anchorage.
3. Performance load tests will be measured per each.
4. Proof load tests will be measured per each.
5. Equipment and manpower time required for removal of obstructions such as buried debris will be measured per hour, as a contingency item.

The final pay quantities will be the design quantity increased or decreased by any changes authorized by the City. The quantities accepted for payment will be paid for at the contract unit prices for the following items:

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>
SP 16.02-1	Helical Tiebacks w/Anchorage (Furnish & Install)	Per Linear Foot (LF)
SP 16.02-2	Helical Tiebacks – Performance Load Tests	Per Each (EA)
SP-16.02-3	Helical Tiebacks - Proof Load Tests	Per Each (EA)

The contract unit prices for the above items will be full and complete payment for providing all design, materials, labor, equipment, and incidentals to complete the Work.

SP-17.02 CONCRETE PAVERS

General: Concrete Pavers shall be installed as directed in the Construction Plans, to the neat dimensions and elevations indicated therein.

SUBMITTALS

Product Data: For paver type and manufactured product shown on Drawings or specified.

Shop Drawings: Show fabrication and installation details for pavers:

1. Include dimensions and profiles of paver units.

Samples: Submit samples for paver type required, exhibiting the full range of color characteristics expected.

1. Submit a minimum of 2 samples, 24" x 24", in color and finish specified.

Certification: Submit a letter of certification from the paver fabricator, stating the material being furnished is the specified material and there are sufficient reserves available to supply the project and furnish replacements if needed.

QUALITY ASSURANCE

Qualifications:

1. Installer Qualifications: Engage experienced installer that has completed paver installation similar in material, design, and extent to that indicated for the project.

2. Fabricator Qualifications: Engage experienced fabricator that has completed paver fabrication similar in material, design, and extent to that indicated for the project.

Testing: Submit a letter of certification from an independent testing agency that performed the following testing:

1. On test specimens that are representative of materials for paver.
2. Physical Property Tests
3. Flexural Strength Tests

Mockups: Build mockup of typical areas shown on Drawings.

1. Size: 96 inches x 96 inches
2. Color Consistency: Demonstrate color consistency with mockup; color range shall not exceed range of color established by samples.
3. Include mortar setting bed, troweled concrete retaining edge, and sealant joints, if required.

Compensation: The quantity to be paid for under this section shall be the area in square feet authorized, complete in-place and accepted and shall include the mortar bed beneath the pavers. The installation of an expansion joint with aluminum plate, where noted on the drawings, shall be incidental to the work and shall be included in the contract price. The plan area shall be used to determine the area of payment.

Payment for this quantity shall be paid for at the contract price in "SP-17.02 Concrete Pavers (Furnished & Installed)". Such price and payment shall be full compensation for all work specified under this section and shall include all materials, equipment, tools, labor and materials necessary to complete the work.

Payment shall be made under:

Item 526-1-2 Concrete Pavers (Furnish & Install) per Square Foot

SP-17.03 WALKWAY RAILING SYSTEM

General: Railing system shall be in accordance with Technical Specifications, Section 05720 – Cable Railing System (Modular Ornamental Railing System) that are made a part of these specifications. System shall be installed as directed in the contract plans, to the neat dimensions and elevations indicated therein. Railing system shall include, but not limited to railings, brackets, flanges, connectors, fittings, shapes, plates, tubing, bars, banner pole sleeves, light fixture support assembly necessary for the installation of a lighting fixture, and any other components for a complete and functioning system.

Compensation: the quantity to be paid for under this section shall be the length in lineal feet authorized, complete in-place and accepted. The plan lengths shall be used to determine the lengths for payment. Payment for this quantity shall be paid for at the contract price in "SP-17.02 Railing System (Furnish & Install)". Such price and payment shall be full compensation for all work specified under this section and shall include all materials, equipment, tools, labor and materials necessary to complete the work.

Payment shall be made under:

Item SP-17.03 Railing System (Furnish & Install) Per Linear Foot

SP-25.01 ELECTRICAL

Technical Specifications for Electrical Work are included herein under the following Sections:

16010	GENERAL PROVISIONS FOR ELECTRICAL WORK
16050	ELECTRICAL – BASIC REQUIREMENTS
16110	RACEWAYS AND BOXES
16120	WIRE AND CABLE: 600V AND BELOW
16130	ELECTRICAL: EXTERIOR UNDERGROUND
16160	PANELBOARDS
16405	SAFETY SWITCHES
16410	OVERCURRENT AND SHORT CIRCUIT PROTECTIVE DEVICES
16430	LOW VOLTAGE SURGE PROTECTION DEVICES
16450	GROUNDING
16520	EXTERIOR LIGHTING

The following pay items are listed in the Bid Schedule and include Electrical Work as shown on the Drawings and specified under the above listed Technical Specification Sections. The Method of Measurement shall be as indicated below and be full compensation for all work, including all materials, excavation, equipment, labor and incidentals necessary to complete the Project.

Item 630-2-11	Lighting Homerun Circuit (Conduit) (Furnish and Install)	per linear foot (LF)
Item 630-2-11-2	Conduit, Boxes and Raceway for Fiber Optic System	per linear foot (LF)
Item 635-2-14	Pull Boxes	per each (EA)
Item 639-1-121	Modify Power Service	per lump sum (LS)
Item 715-1-12	Lighting Homerun Circuit (Wire) (Furnish and Install)	per linear foot (LF)
Item 715-4-300-1	Single Arm Light Pole	per each (EA)
Item 715-4-300-2	Double Arm Light Pole	per each (EA)
Item 715-4-300-3	Double Arm Light Pole (One arm longer than the other)	per each (EA)
Item 715-10-2	Light Pole Foundations	per each (EA)
Item 715-11-119	Pole Mounted Light Fixtures	per each (EA)
Item 715-11-129	Underdeck Light Fixtures	per each (EA)
Item 715-11-139-1	Art Display Light Fixtures	per each (EA)
Item 715-11-139-2	Light Fixtures for America America Public Art	per each (EA)
Item 715-11-139-3	Light Fixtures for Levitating Numbus Public Art	per each (EA)
Item 715-11-139-4	Lockable Disconnect Switches for Public Art	per each (EA)



Page 1 of 2 –DMI Payment
City of Tampa – DMI Sub-(Contractors/Consultants/Suppliers) Payments
(FORM MBD-30)

[] Partial [] Final

Contract No.: _____ WO#,(if any): _____ Contract Name: _____

Contractor Name: _____ Address: _____

Federal ID: _____ Phone: _____ Fax: _____ Email: _____

GC Pay Period: _____ Payment Request/Invoice Number: _____ City Department: _____

Total Amount Requested for pay period: \$ _____ Total Contract Amount(including change orders):\$ _____

Type of Ownership - (F=Female M=Male), BF BM = African Am., HF HM = Hispanic Am., AF AM = Asian Am., NF NM = Native Am., CF CM = Caucasian S = SLBE

Type	Company Name Address Phone & Fax	Total Sub Contract Or PO Amount	Amount Paid To Date	Amount To Be Paid For This Period
Trade/Work Activity			Amount Pending Previously Reported	Sub Pay Period Ending Date
[]Sub []Supplier				
Federal ID				
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$

(Modifying This Form or Failure to Complete and Sign May Result in Non-Compliance)

Certification: I hereby certify that the above information is a true and accurate account of payments to sub – contractors/consultants on this contract.

Signed: _____ Name/Title: _____ Date: _____



Page 2 of 2 – DMI Payment

Instructions for completing The DMI Sub-(Contractors/Consultants/ Suppliers) Payment Form (Form MBD-30)

This form must be submitted with all invoicing or payment requests where there has been subcontracting rendered for the pay period. If applicable, after payment has been made to the subcontractor, “Waiver and Release of Lien upon Progress Payment”, “Affidavit of Contractor in Connection with Final Payment”, or an affidavit of payment must be submitted with the amount paid for the pay period. The following will detail what data is required for this form. The instructions that follow correspond to the headings on the form required to be completed. **(Modifying or omitted information from this form may result in non-compliance).**

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **W.O.#** If the report covers a work order number (W.O.#) for the contract, please indicate it in that space.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business.
- **Address.** The physical address of your business.
- **Federal ID.** A number assigned to a business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **Pay Period.** Provide start and finish dates for pay period. (e.g. 05/01/13 – 05/31/13)
- **Payment Request/Invoice Number.** Provide sequence number for payment requests. (ex. Payment one, write 1 in space, payment three, write 3 in space provided.)
- **City Department.** The City of Tampa department to which the contract pertains.
- **Total Amount Requested for pay period.** Provide all dollars you are expecting to receive for the pay period.
- **Total Contract Amount (including change orders).** Provide expected total contract amount. This includes any change orders that may increase or decrease the original contract amount.
- **Signed/Name/Title/Date.** This is your certification that the information provided on the form is accurate.
- **See attached documents.** Check if you have provided any additional documentation relating to the payment data. Located at the bottom middle of the form.
- **Partial Payment.** Check if the payment period is a partial payment, not a final payment. Located at the top right of the form.
- **Final Payment.** Check if this period is the final payment period. Located at the top right of the form.

The following instructions are for information of any and all subcontractors used for the pay period.

- **(Type) of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business or SLBE.
- **Trade/Work Activity.** Indicate the trade, service, or material provided by the subcontractor.
- **SubContractor/SubConsultant/Supplier.** Please indicate status of firm on this contract.
- **Federal ID.** A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Total Subcontract Amount.** Provide total amount of subcontract for subcontractor including change orders.
- **Amount Paid To Date.** Indicate all dollars paid to date for the subcontractor.
- **Amount Pending, Previously Reported.** Indicate any amount previously reported that payments are pending.
- **Amount To Be Paid for this Period.** Provide dollar amount of dollars requested for the pay period.
- **Sub Pay Period Ending Date.** Provide date for which subcontractor invoiced performed work.

Forms must be signed and dated or will be considered incomplete. The company authorized representative must sign and certify the information is true and accurate. Failure to sign this document or return the document unsigned can be cause for determining a company is in non-compliance of Ordinance 2008-89.

If any additional information is required or you have any questions, you may call the Minority Business Development Office at (813) 274-5522.

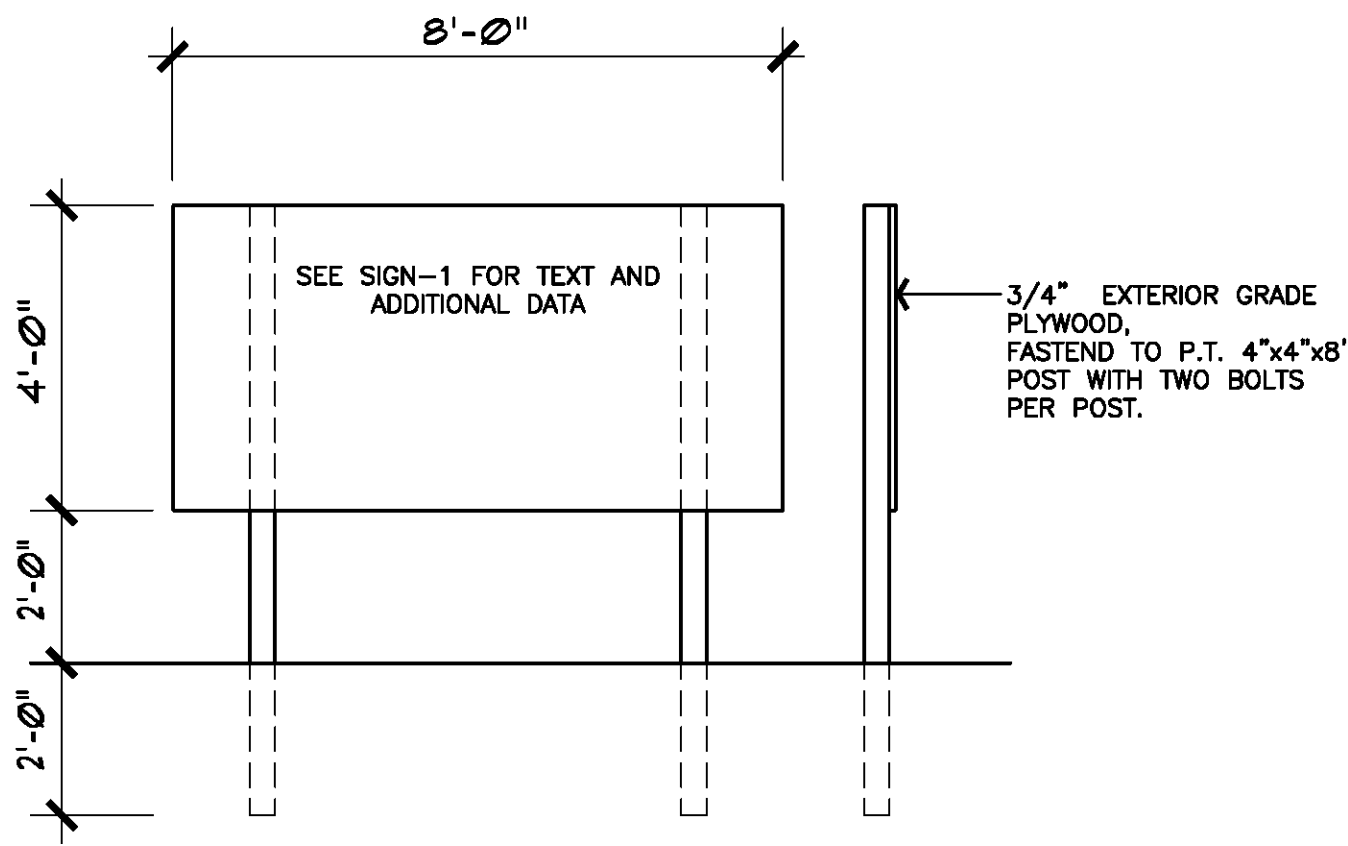


EXHIBIT C

APPLICABLE FEDERAL LAWS AND REGULATIONS

By entering into the Agreement for a FY 2012 TIGER Discretionary Grant the Grantee assures and certifies, with respect to this grant, that it will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance, and use of Federal funds for this project. Performance under this Agreement shall be governed by and in compliance with the following requirements as applicable to the type of organization of the Recipient and any applicable sub-recipients. The applicable provisions to the Agreement include, but are not limited, to the following:

General Federal Legislation

- a. Davis-Bacon Act - 40 U.S.C. §§ 3141, et seq.
- b. Federal Fair Labor Standards Act - 29 U.S.C. §§ 201, et seq.
- c. Hatch Act - 5 U.S.C. §§ 1501, et seq.
- d. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Title - 42 U.S.C. §§ 4601, et seq.
- e. National Historic Preservation Act of 1966 - Section 106 - 16 U.S.C. § 470f
- f. Archeological and Historic Preservation Act of 1974 - 16 U.S.C. § 469a through § 469c.
- g. Native American Graves Protection and Repatriation Act - 25 U.S.C. §§ 3001, et seq.
- h. Clean Air Act, P.L. 90-148, as amended
- i. Section 404 of the Clean Water Act, as amended 33 U.S.C. §§ 1251, et seq.
- j. Section 7 of the Endangered Species Act, P.L. 93-205, as amended.
- k. Coastal Zone Management Act, P.L. 92-583, as amended.
- l. Flood Disaster Protection Act of 1973 - Section 102(a) - 42 U.S.C. § 4012a
- m. Age Discrimination Act of 1975 - 42 U.S.C. §§ 6101, et seq.
- n. American Indian Religious Freedom Act, P.L. 95-341, as amended
- o. Drug Abuse Office and Treatment Act of 1972, as amended, 21 U.S.C. §§ 1101, et seq.
- p. The Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970, P.L. 91-616, as amended - 42 U.S.C. §§ 4541, et seq.
- q. Sections 523 and 527 of the Public Health Service Act of 1912, as amended, 42 U.S.C. §§ 290dd through 290dd-2
- r. Architectural Barriers Act of 1968 - 42 U.S.C. § 4151, et seq.
- s. Power Plant and Industrial Fuel Use Act of 1978, P.L. 100-42 - Section 403 - 42 U.S.C. § 8373
- t. Contract Work Hours and Safety Standards Act - 40 U.S.C. § 3701, et seq.
- u. Copeland Anti-kickback Act, as amended - 18 U.S.C. § 874 and 40 U.S.C. § 3145
- v. National Environmental Policy Act of 1969 - 42 U.S.C. §§ 4321, et seq.
- w. Wild and Scenic Rivers Act, P.L. 90-542, as amended – 16 U.S.C. §§ 1271, et seq.
- x. Federal Water Pollution Control Act, as amended - 33 U.S.C. §§ 1251-1376
- y. Single Audit Act of 1984 - 31 U.S.C. §§ 7501, et seq.
- z. Americans with Disabilities Act of 1990 - 42 U.S.C. § 12101, et seq.
- aa. Title IX of the Education Amendments of 1972, as amended - 20 U.S.C. § 1681 through § 1683, and § 1685 through § 1687

- bb. Section 504 of the Rehabilitation Act of 1973, as amended - 29 U.S.C. § 794
- cc. Title VI of the Civil Rights Act of 1964 - 42 U.S.C. §§ 2000d *et seq.*
- dd. Title IX of the Federal Property and Administrative Services Act of 1949 - 40 U.S.C. §§ 1101 -1104 541, *et seq.*
- ee. Limitation on Use of Appropriated Funds to Influence Certain Federal Contracting and Financial Transactions – 31 U.S.C. § 1352
- ff. Freedom of Information Act - 5 U.S.C. § 552, as amended
- gg. Magnuson-Stevens Fishery Conservation and Management Act – 16 U.S.C. § 1855
- hh. Farmlands Protection Policy Act of 1981 – 7 § U.S.C. 4201
- ii. Noise Control Act of 1972 – 42 U.S.C. § 4901, *et seq.*
- jj. Fish and Wildlife Coordination Act of 1956 – 16 U.S.C. § 661
- kk. Section 9 of the Rivers and Harbors Act and General Bridge Act of 1946 - 33 U.S.C. § 401
- ll. Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303 and 23 U.S.C. § 138
- mm. Resource Conservation and Recovery Act of 1976 (RCRA), as amended -- 42 U.S.C. §§ 6901, *et seq.*
- nn. Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended --42 U.S.C. §§ 9601-9657
- oo. Safe Drinking Water Act -- 42 U.S.C. §§ 300F-300J-6
- pp. Wilderness Act -- 16 U.S.C. §§ 1131-1136
- qq. Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 -- 42 U.S.C. § 6901, *et seq.*
- rr. Migratory Bird Treaty Act 16 U.S.C. § 760c-760g
- ss. The Federal Funding Transparency and Accountability Act of 2006, as amended (Pub. L. 109–282, as amended by section 6202 of Public Law 110–252)
- tt. Cargo Preference Act of 1954 – 46 U.S.C. § 55305
- uu. Buy America Act – 23 U.S.C. § 313

Executive Orders

- a. Executive Order 11246 - Equal Employment Opportunity
- b. Executive Order 11990 - Protection of Wetlands
- c. Executive Order 11988 – Floodplain Management
- d. Executive Order 12372 - Intergovernmental Review of Federal Programs
- e. Executive Order 12549 – Debarment and Suspension
- f. Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- g. Executive Order 13166 – Improving Access to Services for Persons With Limited English Proficiency

General Federal Regulations

- a. Buy America Requirements 23 C.F.R. 635.410
- b. Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-Profit Organizations – 2 C.F.R. Part 215
- c. Cost Principles for State and Local Governments – 2 C.F.R. Part 225
- d. Non-procurement Suspension and Debarment – 2 C.F.R. Part 1200

- e. Investigative and Enforcement Procedures - 14 C.F.R. Part 13
- f. Procedures for predetermination of wage rates - 29 C.F.R. Part 1
- g. Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States - 29 C.F.R. Part 3
- h. Labor standards provisions applicable to contracts governing federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act) - 29 C.F.R. Part 5
- i. Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements) - 41 C.F.R. Parts 60, et seq.
- j. Contractor Qualifications - 48 C.F.R. Part 9
- k. Uniform administrative requirements for grants and cooperative agreements to state and local governments - 49 C.F.R. Part 18
- l. New Restrictions on Lobbying – 49 C.F.R. Part 20
- m. Nondiscrimination in Federally Assisted Programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 – 49 C.F.R. Part 21
- n. Uniform relocation assistance and real property acquisition for Federal and Federally assisted programs - 49 C.F.R. Part 24
- o. Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance - 49 C.F.R. Part 25
- p. Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance - 49 C.F.R. Part 27
- q. DOT's oversight of DOJ's ADA regulations for non-transit programs, including the ADA Accessibility Guidelines, required by the DOJ regulations at 28 C.F.R. Part 35
- r. Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Transportation – 49 C.F.R. Part 28
- s. Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors - 49 C.F.R. Part 30
- t. Governmentwide Requirements for Drug-Free Workplace (Financial Assistance) – 49 C.F.R. Part 32
- u. DOT's implementing ADA regulations for transit, including the ADA Accessibility Guidelines in Part 37, Appendix A - 49 C.F.R. Parts 37 and 38
- v. Procedures for Transportation Workplace Drug and Alcohol Testing Programs – 49 C.F.R. Part 40
- w. Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs – 49 C.F.R. Part 26
- x. Preference for Privately Owned Commercial U.S. Flag Vessels – 46 C.F.R. Part 381.

Office of Management and Budget Circulars

- a. A-87 – Cost Principles Applicable to Grants and Contracts with State and Local Governments (See 2 C.F.R. Part 225)
- b. A-102 – Grants and Agreements with State and Local Governments (See 49 C.F.R. Part 18)
- c. A-133 – Audits of States, Local Governments, and Non-Profit Organizations
- d. Any other applicable OMB Circular based upon the specific FY 2012 TIGER Discretionary Grant Recipient

Highway Federal Legislation

- a. Brooks Act (for FHWA projects, this incorporates Title IX of the Federal Property and Administrative Services Act of 1949 (formerly 40 U.S.C. 541, et seq)) - 40 U.S.C. 1101-1104
- b. Highway Design and Construction Standards, 23 U.S.C. 109
- c. Planning, 23 U.S.C. 134 and 135 (except for projects that are not regionally significant that do not receive funding under Title 23 or Chapter 53 of Title 49)
- d. Tolls, 23 U.S.C. 301 (to the extent the recipient wishes to toll an existing free facility that has received Title 23 funds in the past)
- e. Size, Weight, and Length Limitations - 23 U.S.C. 127, 49 U.S.C. 31101 et seq.

Highway Federal Regulations

- a. Planning 23 – C.F.R. Part 450 (except for projects that are not regionally significant that do not receive funding under Title 23 or Chapter 53 of Title 49)
- b. National Highway System Design Standards – 23 C.F.R. Part 625
- c. Manual on Uniform Traffic Control Devices – 23 C.F.R. Part 655
- d. Environmental Impact and Related Procedures – 23 C.F.R. Part 771
- e. Procedures for Abatement of Highway Traffic and Construction Noise -- 23 C.F.R. Part 772
- f. Procedures Implementing Section 4(f) of the Department of Transportation Act – 23 C.F.R. Part 774
- g. Permitting Requirements under the National Pollutant Discharge Elimination System – 40 C.F.R. Part 122

Specific assurances required to be included in the FY 2012 TIGER Discretionary Grant Agreements by any of the above laws, regulations, or circulars are hereby incorporated by reference into the Agreement.

STATUS OF CONTRACTS ON HAND

(Furnish complete information about all your contracts, whether prime or subcontracts; whether in progress or awarded, but not yet begun; and regardless of whom contracted with.)

1	2	3	4	5	6
PROJECTS OWNER, LOCATION AND DESCRIPTION	CONTRACT (OR SUBCONTRACT) AMOUNT	AMOUNT SUBLET TO OTHERS	BALANCE OF CONTRACT AMOUNT	UNCOMPLETED AMOUNT TO BE DONE BY YOU	
				AS PRIME CONTRACTOR	AS SUBCONTRACTOR
NOTE: Columns 2 and 3 to show total contract (or subcontract) amounts. Column 4 to be difference between columns 2 and 3. Amount in columns 5 or 6 to be uncompleted portion of amount in column 4. All amounts to be shown to nearest \$100. The Contractor may consolidate and list as a single item all contracts which, individually, do not exceed 3% of total, and which, in the aggregate, amount to less than 20% of the total.			TOTALS	\$0.00	\$0.00
			TOTAL UNCOMPLETED WORK ON HAND TO BE DONE BY YOU (TOTAL COLUMNS 5 AND 6)		\$0.00

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
LAP CERTIFICATION OF CURRENT CAPACITY

525-010-46
PRODUCTION SUPPORT
12/09
Page 1 of 2

CONFIDENTIAL

For bids to be received on _____
(Letting Date)

Fill in your FDOT Vendor Number

VF _____

(Only applicable to FDOT pre-qualified contractors)

CERTIFICATE

I hereby certify that the amount of any proposal submitted by this bidder for the above letting does not exceed the amount of the Firm's CURRENT CAPACITY (maximum capacity rating less total uncompleted work).

The total uncompleted work as shown on
the "Status of Contracts on Hand" report (page 2) \$ _____

I further certify that the "Status of Contracts on Hand" report (page 2) was prepared as follows:

1. If the letting is before the 25th day of the month, the certificate and report reflect the uncompleted work as of the 15th day of the month, last preceding the month of the letting.
2. If the letting is after the 25th day of the month, the certificate and report reflects the uncompleted work in progress as of the 15th day of the month of the letting.
3. All new contracts (and subcontracts) awarded earlier than five days before the letting date are included in the report and charged against our total rating.

I certify that the information above is correct.

NAME OF FIRM

Sworn to and subscribed this _____ day
of _____, 20 _____

By: _____

Title

7-25 Equal Employment Opportunity Requirements.

7-25.1 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."

7-25.2 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.

7-25.3 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.

7-25.4 Recruitment: When advertising for employees, include in all advertisements for employees the notation "An Equal Opportunity Employer".

7-25.5 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.

7-25.6 Subcontracting: Use the best efforts to ensure subcontractor compliance with their equal employment opportunity policy.

7-25.7 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.

CERTIFICATION
COMPLIANCE WITH EQUAL EMPLOYMENT OPPORTUNITY (EEO)
PROVISIONS ON FEDERAL AID CONTRACTS

FIN PROJECT I.D. _____

DATE _____

CONTRACT NO. _____

_____, prime contractor

for the above referenced contract, hereby certifies that this company and all of its subcontractors have made every Good Faith Effort to comply with the EEO provisions of FHWA Form-1273 (Section II. Nondiscrimination and Section III. Nonsegregated facilities) on this contract.

Exception:

The following subcontractor(s) have been found to be in noncompliance with the provisions stated above. Attached is notification sent to the respective subcontractor(s) explaining their noncompliance with these provisions.

Subcontractor Name _____

Subcontractor Name _____

Street Address _____

Street Address _____

City/State/Zip _____

City/State/Zip _____

State of Florida

County of _____

Sworn to and subscribed before me this _____ day

 of _____, by _____
 (Print name of person signing Certification)

A false statement or omission made in connection with this certification is sufficient cause for suspension, revocation, or denial of qualification to bid, and a determination of nonresponsibility, and may subject the person and/or entity making the false statement to any and all civil and criminal penalties available pursuant to applicable Federal and State law.

Notary Public _____

Contractor _____

Commission Expires _____

By _____

Personally Known ☐ OR Produced Identification ☐

Title _____

Type of Identification Produced _____

Instructions:

1. Attach copy of any notifications of noncompliance sent to each applicable subcontractor.
2. List the subcontractors found not in compliance at the time of this certification.
3. A separate certification is required for each contract.
4. To be signed by an officer or director of the Contractor with the authority to bind the Contractor and notarized.
5. To avoid delay in payment, certification must be submitted to the Project Engineer no later than the Friday before the monthly estimate cutoff date (generally the 3rd Sunday of the month).

Form 273-NLE-12
Equal Opportunity
05/02

9. PROJECT EMPLOYMENT REPORT		TABLE B
TABLE A		

**On-The-Job
Trainees (OJT)**

OJT TOTALS

M	F
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11. Summarize all hires for the entire active month by job category, race, sex (use additional sheet if needed).

12. Preparer	First, Last Name and Title	Area Code and Phone Number	Date Prepared
13. Reviewer	First, Last Name and Title	Area Code and Phone Number	Date Reviewed

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – TITLE VI
ASSURANCE – DOT 1050.2, APPENDIX A.**

(REV 11-12-13) (FA 11-26-13) (3-14)

SECTION 7 is expanded by the following new Article:

7-30 Title VI Assurance – DOT 1050.2, Appendix A.

During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the “Contractor”) agrees as follows:

7-30.1 Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the US Department of Transportation (hereinafter, “USDOT”) Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

7-30.2 Nondiscrimination: The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the basis of race, color, national origin or sex in the selection and retention of sub-contractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

7-30.3 Solicitations for Sub-contractors, including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under sub-contract, including procurements of materials or leases of equipment, each potential sub-contractor or supplier shall be notified by the Contractor of the Contractor’s obligations under this contract and the Regulations relative to nondiscrimination on the basis of race, color, national origin, or sex.

7-30.4 Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and Federal Motor Carrier Safety Administration to be pertinent to ascertain compliance with such Regulations, order and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the Florida Department of Transportation, or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

7-30.5 Sanctions for Noncompliance: In the event of the Contractor’s noncompliance with the nondiscrimination provisions of this Contract, the Florida Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may determine to be appropriate, including, but not limited to:

- a. withholding of payments to the Contractor under the Contract until the Contractor complies, and/or
- b. cancellation, termination or suspension of the Contract, in whole or in part.

7-30.6 Incorporation of Provisions: The Contractor shall include the provisions of the 7-30.1 through 7-30.6 in every sub-contract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any sub-contract or procurement as the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may direct as a means of enforcing such provisions including sanctions for noncompliance, provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a sub-contractor or supplier as a result of such direction, the Contractor may request the Florida Department of Transportation to enter into such litigation to protect the interests of the Florida Department of Transportation, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall 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, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

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 EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

CHAPTER 14-78 PARTICIPATION BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS IN DEPARTMENT OF TRANSPORTATION CONTRACTS

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14-78.001 General.

This rule chapter implements the Department of Transportation's policy, required by legislative mandate, that small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum opportunity to participate in the performance of Department contracts.

Specific Authority 334.044(2), 339.0805(5) FS. Law Implemented 339.05, 339.0805 FS. History-New 12-9-81, Amended 5-23-84, Formerly 14-78.01, Amended 9-21-87, 5-4-88.

14-78.0011 Time and General Procedural Requirements.

(1) Time. In computing any period of time prescribed by this rule chapter, the day of the act from which the designated period of time begins to run shall not be included. The last day of the period shall be included unless it is a Saturday, Sunday, or legal holiday in which event the period shall run until the end of the next day which is neither a Saturday, Sunday, nor legal holiday. As used in this rule chapter, a legal holiday means those days designated in Section 110.117, Florida Statutes, and any other day the Department's offices are closed.

(2) Requests for Hearing. All requests for hearing shall be in writing and shall be filed with the Clerk of Agency Proceedings, Department of Transportation, MS 58, Haydon Burns Building, Tallahassee, Florida 32399-0458. A request for hearing is filed when it is received by the Clerk of Agency Proceedings.

Accordingly, a request for hearing is not timely filed unless it is received by the Clerk of Agency Proceedings within the appropriate time period. Requests for hearings by FAX are not acceptable.

Specific Authority 334.044(2), 339.0805 FS. Law Implemented 339.05, 339.0805 FS. History-New 5-23-84, Formerly 14-78.011, Amended 9-21-87, 5-4-88, 12-2-93.

14-78.002 Definitions.

Throughout this rule chapter, the following words and phrases shall have the respective meanings set forth below unless a different meaning is plainly required by the context:

(1) "Affiliates" is defined pursuant to 13 C.F.R. Section 121.401, which is hereby incorporated by reference and made a part of these rules. "Affiliates" means companies having one or more of the following relationships:

- (a) One concern controls or has the power to control the other;
- (b) A third party or parties controls or has the power to control both;
- (c) An identity of interest between or among parties exists such that affiliation may be found.

(2) Pursuant to 13 C.F.R. Section 121.403(a) and (b), "Business Concern" or "Concern" means:

(a) A business concern eligible for assistance as a small business is a business entity organized for profit, with a place of business located in the United States and which makes a significant contribution to the U.S. economy through payment of taxes and/or use of American products, materials and/or labor.

(b) Such business entity may be in the legal form of an individual proprietorship, partnership, corporation, joint venture, association, trust or a cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.

(3) "Certified" means a finding of qualification by the Department in accordance with this rule chapter.

(4) Pursuant to C.F.R. 49 Subtitle A, Subpart A, Section 23.5, "Compliance" means the condition existing when the Department or a contractor has met and implemented the requirements of this rule chapter.

(5) "Department" means Florida Department of Transportation.

(6) "Disadvantaged" means socially and economically disadvantaged, whenever used throughout this rule chapter.

(7) "DBE" means disadvantaged business enterprise.

(8) "DBE Directory" means the directory published monthly by the Equal Opportunity Office, which lists those firms that have been determined eligible to participate in the Department's DBE program.

(9) Pursuant to 49 C.F.R. Subtitle A, Subpart D, Section 23.62 and Appendix A, to Section 23.62, "Disadvantaged Business Enterprise" or "DBE" means a small business concern organized for profit:

(a) Which is at least 51 percent owned by one or more disadvantaged individuals, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more disadvantaged individuals; and

(b) Whose management and daily business operations are controlled by one or more of the disadvantaged individuals who own it.

(10) "Individual" means only natural persons and not artificial persons such as corporations and other business entities.

(11) Pursuant to 49 C.F.R. Subtitle A, Subpart A, Section 23.5, a "Joint Venture" means an association of two or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills, and knowledge.

(12) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.47(e)(2), "Manufacturer" means a firm that operates or maintains

a factory or establishment that produces on the premises the materials or supplies obtained by the Department or a contractor.

(13) Pursuant to C.F.R. 49 Subtitle A, Subpart A, Section 23.5, "Noncompliance" means the condition existing when the Department or a contractor has failed to implement the requirements of this rule chapter.

(14) "Owner/Operator" means an individual who owns one truck that he or she drives as an independent hauler.

(15) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.47(e)(3), a "Regular Dealer" means a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a regular dealer, the firm

must engage in, as its principal business and in its own name, the purchase and sale of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products does not need to keep such products in stock, if the dealer owns or operates the appropriate distribution facility.

Brokers and packagers shall not be regarded as manufacturers or regular dealers within the meaning of these rules.

(16) Pursuant to 49 C.F.R. Subtitle A, Subpart A, Section 23.5, "Set Aside" means a technique which limits consideration of bids or proposals to those submitted by DBEs.

(17) Pursuant to 49 C.F.R. Subtitle A, Subpart D, Section 23.62 and Appendix A to Section 23.62 and Appendix B of Subpart D, "Small Business Concern" means those business concerns as defined in 13 C.F.R. Section 121.403(a) and (b), which regulation is hereby incorporated by reference and made a part of these rules, except that a small business concern shall not include any concern which, together with its affiliates, has annual average gross receipts over the previous three fiscal years in excess of \$15,370,000 or the amount as adjusted for inflation by the Secretary of the U.S. Department of Transportation or the applicable lower limits on business size established by the Small Business Administration in 13 C.F.R. Part 121, Sections 121.402 and 121.601, whichever is lower. For the purpose of determining business size, the firm shall be classified under the appropriate standard industrial classification code based upon the work primarily performed by the company.

(18) Pursuant to 49 C.F.R. Subtitle A, Subpart D, Section 23.62, "Socially and Economically Disadvantaged Individuals" means those individuals:

(a) Who are citizens of the United States (or lawfully admitted permanent residents) and who are women, Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act (15 USC 637) and implementing regulations. Individuals in the following groups are presumed to be disadvantaged; however, this presumption is rebuttable:

1. "Black Americans," which includes persons having origins in any of the black racial groups of Africa;
 2. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish or Portuguese culture or origin, regardless of race;
 3. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;
 4. "Asian-Indian Americans," which includes persons whose origins are from India, Pakistan, and Bangladesh; and
 5. "Native Americans," which includes persons who are Eskimos, Aleuts, Native Hawaiians, or persons who have origins in any of the American Indian tribes prior to 1835.
6. Women.

(b) Who are not members of the presumptive groups as defined in Section 14-78.002, but meet the criteria as set out in Rule 14-78.005, F.A.C.

(19) "Subordinate(s)" or "Subordination" means performance by a third party of a specific part of the work which is the responsibility of the principal DBE subcontractor by contract, agreement, or arrangement, including but not limited to

supervision, labor, hauling, management, transporting, supplying, planning, organizing, providing personnel, or equipping.

(20) The "Critical Areas of Operation" are those areas required for the production and delivery of the primary product or service of the firm and may include, at a minimum, estimating, bidding, and field supervision. The areas of administration and financial management are not critical areas of operation unless they constitute the firm's primary product or service.

Specific Authority 334.044(2), 339.05, 339.0805 FS. Law Implemented 339.05, 339.0805 FS. History—New 5-23-84, Formerly 14-78.02, Amended

9-21-87, 5-4-88, 4-17-89, 6-24-91, 4-15-92, 12-2-93.

14-78.003 General Responsibilities.

(1) In furtherance of the purpose of this rule chapter, the Department shall establish overall DBE goals for its entire DBE program, as set forth in 49 C.F.R. Subtitle A, Subpart C, Section 23.45(g), and Subpart D, Section 23.64. In setting the overall goals the Department shall consider the following factors, in accordance with 49 C.F.R. Subtitle A, Subpart C, Sections 23.45(g)(5)(i) and 23.45(g)(5)(ii):

(a) Overall goals shall be based on projection of the number and types of contracts to be awarded by the Department and a projection of the number of and types of DBEs likely to be available to compete for contracts from the Department over the period during which the goals will be in effect;

(b) Overall goals shall also be based on past results of the Department's efforts to contract with DBEs and the reasons for the high or low level of those results.

(2) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.45(k), when implementing its DBE goal program the Department may:

(a) Set aside contracts for competition only by, between, or among certified DBEs.

1. The total dollar amount of all projects set aside in any one fiscal year shall not exceed ten percent of the funds allocated for contracting for that fiscal year.

2. A contract shall not be set aside unless at least three DBEs with capabilities consistent with contract requirements exist so as to permit competition.

3. In selecting contracts suitable for a set aside, the Department shall consider the following factors:

a. The number, capacity, and capabilities of potential eligible bidders;

b. The type of work required by the contract to be let; and

c. The estimated total dollar amount of the contract to be let.

4. Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(d), a joint venture between a DBE and a non-DBE is eligible to compete in a set aside if the DBE partner of the joint venture is certified pursuant to this rule chapter, if the certified DBE partner's share in the ownership, control, and management responsibilities, risks, and profits of the joint venture is at least 51 percent, and if the DBE partner is responsible for a clearly defined portion of the work to be performed. Firms seeking participation as a joint-venture must, in addition, complete Schedule B – Certification Form No. 2 – Department of Transportation Form 275-030-02, Rev. 8/93, as described in subsections 14-78.005(2) and 14-78.007(1), F.A.C., of this rule chapter.

(b) Establish contract goals on each contract with subcontracting opportunities for certified DBEs.

1. In setting contract goals, the Department shall consider the following factors:

- a. The type of work required by the contract to be let;
- b. The subcontracting opportunities in the contract to be let;
- c. The estimated total dollar amount of the contract to be let; and
- d. The number of certified DBEs.

2. For contracts with an estimated total dollar amount of \$1,000,000 or less, the contract goals shall not exceed 50 percent of the identified potential for DBE participation. For contracts with an estimated total dollar amount over \$1,000,000, the contract goals shall not exceed 75 percent of the identified potential for DBE participation.

3. For all contracts for which DBE contract goals have been established, each bidder shall meet or exceed or demonstrate that it could not meet, despite its good faith efforts, the contract goals set by the Department. The DBE participation information shall be submitted as outlined in sub-subparagraphs 14-78.003(2)(b)3.a. and b., F.A.C. below. Award of the contract shall be conditioned upon such submission of the DBE participation information and upon satisfaction of the contract goals or, if the goals are not met, upon demonstrating that good faith efforts were made to meet the goals. Failure to satisfy the information requirements shall result in a contractor's bid being deemed nonresponsive and the bid being rejected.

a. The contractor's bid submission shall include information, pursuant to 49 C.F.R. Subtitle A, Subpart C, 23.45(h)(1)(i), submitted on a completed Disadvantaged Business Enterprise (DBE) Utilization Form, Form 275-020-004, Rev. 10/95 and Disadvantaged Business Enterprise (DBE) Utilization Summary Form, Form 275-020-003, Rev. 10/95.

b. In lieu of a completed Disadvantaged Business Enterprise (DBE) Utilization Summary Form, Department of Transportation Form 275-020-003, Rev. 10/95, and a Disadvantaged Business Enterprise (DBE) Utilization Form, Department of Transportation Form 275-020-004, Rev. 10/95, the contractor will submit a Disadvantaged Business Enterprise (DBE) Utilization Summary Form which indicates that either the contractor will achieve the DBE goal established for the project for which the bid has been submitted, or that the contractor has submitted sufficient information to demonstrate that the contractor made good faith efforts to meet the DBE goal as part of the bid submission. If the contractor has submitted a Disadvantaged Business Enterprise (DBE) Utilization Summary Form on which the contractor has indicated that the DBE goal will be achieved, the contractor will provide to the Equal Opportunity Office or to the designated District Office when the job has been let in the District by 5:00 P.M. on the third business day following the bid letting day (Electronic transmissions, such as a FAX, sent directly to the Department will not be accepted):

(I) An updated Disadvantaged Business Enterprise (DBE) Utilization Summary Form listing the DBE subcontractors that will be utilized on the project to meet the DBE goal, the dollar amount of the DBE goal subcontracted to each DBE, and the total dollar amount for the DBE goal; and

(II) Disadvantaged Business Enterprise (DBE) Utilization Forms shall be completed and signed by an authorized representative of the DBE, for each DBE subcontract utilized on the project to achieve the DBE goal. Disadvantaged Business Enterprise (DBE) Utilization Forms that are not signed by an authorized representative of the DBE firm, will be rejected and will result in the bid being non-responsive.

c. A DBE Utilization Form will be deemed complete if it lists the prime contractor's name, the project number(s), and the name of the DBE, describes the type of work to be performed by the DBE, states the total amount claimed as credit for the subcontract, and contains the signature of the DBE's representative. Subject to the requirements of subparagraph 14-78.003(2)(b)5., F.A.C., a bidder will be held to the information submitted on its DBE forms and will be expected to enter into subcontracts with each of the DBEs named on its DBE Utilization Forms for payments sufficient to earn the credits claimed on each form.

d. An otherwise complete DBE Utilization Form that has been submitted within the time required by sub-subparagraph (2)(b)3.b., and which indicates that the contract goal will be met, but which lists an incorrect DBE subcontractor, will be considered to contain a technical error which can be corrected by submission of a corrected DBE Utilization Form when one of the two following conditions occurs:

(I) The subcontractor shown on the DBE Utilization form is a certified DBE, but is not approved for use on the particular contract bid because of the classification of the contract, i.e., a wholly federal or wholly state funded contract.

(II) The subcontractor shown on the DBE Utilization Form was previously certified as a DBE, but the certification expired before the DBE Utilization Form was submitted to the Department. To meet this criterion, the subcontractor shown on the DBE Utilization Form must have been listed as a DBE in the Department's DBE Directory at least one time within the last three consecutively published DBE Directories preceding the date the DBE Utilization Form was submitted to the Department.

e. In order for the Department to accept a revised DBE Utilization Form as a technical correction pursuant to sub-subparagraph (2)(b)3.d., the following criteria must also be met:

(I) The total dollar commitment to the substitute DBE must be the same or greater than the amount shown on the original DBE Utilization Form committed to the technically incorrect subcontractor.

(II) All other subcontractors correctly shown on the original DBE Utilization Form(s) cannot be negatively impacted by the technical correction. For instance, a DBE firm correctly identified and shown on a DBE Utilization Form cannot be removed from the bid, nor can the total dollar amount committed to the correctly-identified DBE firm be reduced.

(III) The revised DBE Utilization Form correcting the technical error, as defined in sub-subparagraph (2)(b)3.d. above, must be furnished to the Equal Opportunity Office, or to the designated District Office when the job has been let in the District, by 5:00 p.m. on the third day after the bidder receives oral or written notification of the technical error from the Equal Opportunity Office or from the designated District Office when the job has been let in the District.

(IV) The original and the revised DBE Utilization Forms must otherwise fully comply with the requirements of sub-subparagraph (2)(b)3.c., above.

f. Pursuant to 49 C.F.R. Subtitle A, Subpart C, Appendix A to Section 23.45, in evaluating a contractor's good faith efforts, the Department will consider:

(I) Whether the contractor, at least seven days prior to the letting, provided written notice by certified mail, return receipt requested, or hand delivery, with receipt, to all certified DBEs which perform the type of work in the geographical area of the

project, which the contractor intends to subcontract, advising the DBEs of the specific work the contractor intends to subcontract; that their interest in the contract is being solicited; and how to obtain information about and review and inspect the contract plans and specifications.

(II) Whether the contractor selected economically feasible portions of the work to be performed by DBEs; including where appropriate, breaking down contracts or combining elements of work into economically feasible units. The ability of a contractor to perform the work with its own work force will not in itself excuse a contractor's failure to meet contract goals.

(III) Whether the contractor provided interested DBEs assistance in reviewing the contract plans and specifications.

(IV) Whether the DBE goal was met by other bidders.

(V) Whether the contractor submits all quotations received from DBEs, and for those quotations not accepted, an explanation of why the DBE will not be used during the course of the contract. Receipt of a lower quotation from a non-DBE will not in itself excuse a contractor's failure to meet contract goals.

(VI) Whether the contractor assisted interested DBEs in obtaining any required bonding, lines of credit, or insurance.

(VII) Whether the contractor elected to subcontract types of work that match the capabilities of solicited DBEs.

(VIII) Whether the contractor's efforts were merely pro forma and given all relevant circumstances, could not reasonably be expected to produce sufficient DBE participation to meet the goals.

(IX) Whether the contractor has within the past six months utilized DBEs on other contracts.

(X) Whether the contractor attended any pre-solicitation or pre-bid meetings that were scheduled by the Department to inform DBEs of contracting and subcontracting opportunities.

(XI) Whether the contractor advertised in general circulation, trade association, and minority-focus media concerning the subcontracting opportunities.

(XII) This list is not intended to be exclusive or exhaustive and the Department will look not only at the different kinds of efforts that the contractor has made but also the quality, quantity, and intensity of these efforts.

4. A certified DBE who is the apparent low bidder on a contract with DBE goals satisfies the DBE goals.

5. Contractors shall make good faith efforts to replace a DBE subcontractor that is unable to perform successfully with another certified DBE. Any such substitution of subcontractors shall be approved by the Department.

6. The Department shall count DBE participation toward meeting DBE goals, in accordance with 49 C.F.R. Subtitle A, Subpart C, Section 23.47, as follows:

a. Once a firm is determined to be an eligible certified DBE, in accordance with this rule chapter, the total dollar value of the contract to be awarded to the certified DBE is counted toward the applicable DBE goal.

b. A portion of the total dollar value of a contract with a joint venture eligible under this rule chapter equal to the percentage of the ownership and control of the DBE partner in the joint venture may be counted toward the DBE goal.

c. Only expenditures to DBEs that perform a commercially useful function in the work of a contract may be counted toward the DBE goal. A DBE is considered to perform a commercially useful function when it actually performs and manages at least 51 percent of the work subcontracted to it. A DBE is considered to perform a commercially useful function when it is responsible for

execution of a distinct element of the work of a contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved. To determine whether a DBE is performing a commercially useful function, the Department shall evaluate the amount of work subcontracted, industry practices, and other relevant factors.

d. Consistent with normal industry practices, a DBE may enter into subcontracts. A DBE firm performing subcontract work which was used by the prime contractor to meet the contract DBE goals may not subordinate more than 49 percent of the subcontract work. If the DBE subordinates more than 49 percent of the subcontract work, none of that DBE subcontract amount may be counted toward the DBE goal. If a DBE contractor subcontracts a significantly greater portion of the work of the contract

than would be expected on the basis of normal industry practices, the DBE shall be presumed not to be performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption is subject to review by the US Department of Transportation.

e. Expenditures for materials and supplies obtained from DBE suppliers and manufacturers may be counted toward the DBE goal, provided that the DBEs assume the actual and contractual responsibility for the provision of the materials and supplies. Supplies on a furnish and install subcontract must be paid for by the DBE if the cost of supplies is to be counted as part of the DBE goal. A two-party check, payable to the DBE and supplier is acceptable; only if any discounts for early payment, etc., are paid to the DBE.

f. The Department or a contractor may count toward its DBE goals 60 percent of its expenditures for materials and supplies required under a contract and obtained from a DBE regular dealer, and 100 percent of such expenditures to a DBE manufacturer.

g. A DBE which is utilized to attain the contract goal may not shift on a temporary basis key personnel or crews from a prime contractor's payroll to the DBE's payroll or shift on a temporary basis key personnel or crews from another subcontractor or contractor's payroll to the DBE's payroll. Violation of this subsection will result in none of the DBE subcontract amount being counted toward the contract goal.

h. Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.47(f), a contractor may count toward DBE goals the following expenditures to DBE firms that are not manufacturers or regular dealers:

(I) The fees or commissions charged for providing a bona fide service, such as: professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of the contract; provided that the fee or commission is determined by the Department to be reasonable and not excessive as compared with fees customarily allowed for similar services.

(II) The fees charged for delivery of materials and supplies required on a job site (but not the cost of the materials and the supplies themselves) when the hauler, trucker, or delivery services is not also the manufacturer or a regular dealer in the materials and supplies, provided that the fee is determined by the Department to be reasonable and not excessive as compared with fees customarily allowed for similar services.

(III) The fees or commissions charged for providing any bonds or insurance specifically required for the performance of the contract, provided that the fee or commission is determined by the Department to be reasonable and not excessive as compared with fees customarily allowed for similar services.

i. A DBE trucking company being utilized to haul material as part of the goal must perform at least 51 percent of the contract by utilizing owned or leased equipment. The DBE may therefore use its own trucks and its company employees, leased trucks operated by its own employees and vehicles owned and operated by owner/operators. The owner/operator must be the owner of one truck, of which he or she is the driver. If independent owner/operators are used, they must be shown on the DBE payroll but as owner/operators and not as employees. The use of leased or rented equipment from leasing companies, rental agencies or individuals, which comes with operators other than the owners of the vehicles, will not be counted in the mandatory 51 percent.

j. In fulfilling the DBE goals, a contractor may not count delivery of materials and supplies as expenditures to DBE firms where such delivery is to or from offsite locations that are not monitored by either DOT project personnel or other personnel designated by the Department.

(3) The Department shall compile and make available a directory to contractors and other interested persons listing all DBEs certified by the Department. Only those DBE firms certified on the date of the letting or listed in the current DBE Directory will be eligible for use as a DBE to meet DBE contract goals. A copy of the directory may be obtained from the Liaison Officer, Equal Opportunity Office, 605 Suwannee Street, Mail Station 65, Tallahassee, Florida 32399-4050, (850) 414-4747.

(4) In furtherance of the purpose of this rule chapter, the contractor shall have the following responsibilities:

(a) The contractor shall implement a DBE program containing the following elements:

1. A policy statement, expressing a commitment to use DBEs in all aspects of contracting to the maximum extent feasible. The contractor's policy making body (Board, Council, etc.) shall issue a policy statement, signed by the chairperson, which expresses its commitment to the program, outlines the various levels of responsibility, and states the objectives of the program. The contractor's policy statement shall be circulated throughout the contractor's organization and the minority, female, and non-minority community and business organizations.

2. The designation of a liaison officer within the contractor's organization, as well as such support staff as may be necessary and proper to administer the program, and a description of the authority, responsibility, and duties of the liaison officer and support staff. The Chief Executive Officer of the contractor's organization shall designate a DBE liaison officer and adequate staff to administer the DBE program. The DBE liaison officer shall report directly to the Chief Executive Officer. The DBE liaison officer and staff shall be 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. Techniques to facilitate DBE participation in contracting activities shall include but not be limited to:

a. Arranging solicitations, time for the presentation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of DBEs.

b. Providing assistance to DBEs in overcoming barriers such as the inability to obtain bonding, financing, or technical assistance.

c. Carrying out information and communications programs 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 or women for assistance in recruiting and encouraging eligible DBE contractors to apply for certification with the Department.

(b) The contractor shall submit its DBE program to the Department for approval prior to or with its first bid submission and shall update its program annually.

1. No contract shall be awarded to a contractor until after its DBE program has been approved by the Department.

2. The contractor's DBE program and the contractor's commitment to carry out its program shall be incorporated into and become a part of any contract awarded by the Department. Failure to keep these commitments shall be deemed noncompliance with this rule chapter and breach of the contract.

(c) In order to monitor the progress of its DBE program the contractor shall develop a record keeping system which will identify and assess the contractor's progress in achieving subcontract goals and other DBE program efforts.

1. Specifically, the records maintained by the contractor shall include:

a. The procedures adopted to comply with this rule chapter;

b. The number of subcontracts on Department projects awarded to DBEs;

c. The dollar value of the contracts awarded to DBEs;

d. The percentage of the dollar value of all subcontracts awarded to DBEs as a percentage of the total contract amount;

e. A description of the general categories of contracts awarded to DBEs;

f. The specific efforts employed to identify and award contracts to DBEs;

g. Copies of payment certification as required by contract specifications for each project in which work is counted toward the DBE goal;

h. Copies of all correspondence or written statements utilized by the contractor involving the DBE program and the Department; and

i. Copies of all written quotations submitted by DBE firms for subcontract work.

2. The records maintained by the contractor in accordance with this rule shall be provided upon request to the Department for review. These records must be retained by the contractor for a period of five years.

Specific Authority 334.044(2), 337.125(4), 337.137(3), FS. Law Implemented 337.125, 337.137, 337.139, 339.05, 339.0805 FS. History—New

12-9-81, Amended 5-23-84, 11-10-85, Formerly 14-78.03, Amended 9-21-87, 5-4-88, 4-17-89, 6-24-91, 12-2-93, 10-30-96, 8-12-97, 12-31-98.

14-78.004 Non-Federally Funded State DBE Program.

(1) Purpose. It is the purpose of the Non-Federally Funded State DBE Program, hereinafter referred to as "State DBE

Program," to take specific affirmative actions to eliminate discrimination and the effects of past discrimination, and to ensure that construction contractors and subcontractors provide equal employment opportunity to minority and female business in Florida Department of Transportation road/bridge construction and road/bridge maintenance non-federally funded contracts.

(2) Except where in conflict with this rule, all provisions of Chapter 14-78, F.A.C., apply equally to the State DBE Program.

Where a conflict exists, this rule shall govern.

(3) Definitions. With the following additions, all words and phrases shall have the respective meanings set forth in Rule 14-78.002, F.A.C.:

(a) "Road/Bridge Construction" means any road and bridge construction, including bridge repair, installation of traffic control systems, asphaltic concrete overlay, resurface existing roadway, construction of curbs and gutters, re-roof facilities, construction of pedestrian overpass, construction interchange, widen bridges, replace fence, resurface and pave shoulders, and painting bridges.

(b) "Road/Bridge Maintenance" means any road and bridge maintenance, including mowing, bridge tending, furnish asphalt, mechanical sweeping, guardrail repair, lighting maintenance, marking and signing, litter removal, concrete paving repairs, fertilize shoulders, remove and replace reflective markings, and tree trimming and removal.

(c) "Significant Disparity" means a disparity index (the ratio of the percentage utilization to the percentage availability times 100) below 80.

(4) General Responsibilities.

(a) In furtherance of the purpose of this rule, the Department will establish overall goals not to exceed those goals identified in the most recent study.

(b) Eligible DBEs. Only DBEs certified under Rule 14-78.005 and 14-78.007, F.A.C., who meet all of the following criteria shall be eligible to participate in the State DBE Program. These DBEs are presumed to have experienced past discrimination by the Department, but the presumption is rebuttable.

1. Those DBEs with their primary place of business in the State of Florida or in other counties where the disparity study has shown discrimination by the Department; and

2. Those DBEs from classifications which have experienced a significant disparity by the Department in indicated business categories as established by the disparity study.

(c) The following methods are available to implement the State DBE Program:

1. Percentage goals shall be set on a project by project basis according to the availability of qualified DBEs, but shall not exceed 50% on any contract.

2. Set aside contracts may be established to facilitate the State DBE Program.

(5) Program goals may be waived where appropriate circumstances exist:

(a) Eligible DBE's are unavailable.

(b) The goals set are not feasible.

(c) When DBE price quotes exceed competitive levels which unreasonably inflate bids.

(6) Race/Gender Neutral Methods. The Department shall continue to use race/gender neutral methods to increase DBE utilization. These may include, but are not limited to:

(a) Annually, the Department will provide to minority and female businesses which have bid on contracts during the fiscal

year, a summary on major policy manuals or important changes in contracting procedures;

(b) The Department shall provide the same summary of key policies to parties requesting applications for the DBE program;

(c) The Department shall provide semi-annual workshops for newly certified businesses to explain contracting and purchasing processes;

(d) The Department shall provide a summary of key DBE policies to user departments and persons responsible for contracting activities in the central office and districts;

(e) The Department shall provide technical and managerial aid in:

1. Reading plans and specifications;

2. Identifying jobs comparable to the DBE's work specialty;

3. Putting together the bid package;

4. Scheduling;

5. Computing take-off estimates; Marketing;

7. Setting up books to track revenues and expenses;

8. Interpreting financial statements;

9. Completing applications for loans or bonding.

(f) The Department shall provide to DBEs job listings and listings of the potential prime bidders;

(g) The Department shall hold pre-bid conferences at least six times a year in order to bring together DBEs, the Department and prime contractors.

(7) Federal Participation and Federal Appeal Rights. There shall be no federal participation or federal appeal rights as regards any part of the State DBE Program. Any reference to USDOT or federal participation or federal appeal rights elsewhere in Chapter 14-78 are inapplicable to this rule.

Specific Authority 334.044(2), 337.125(4), 337.137(3), 337.139, 339.0805 FS. Law Implemented 337.125, 337.137, 337.139, 339.0805 FS.

History--New 12-2-93.

14-78.005 Standards for Certification of DBEs.

(1) Pursuant to 49 C.F.R. Subtitle A, Subpart C Section 23.51(a), and Subpart D, Appendix A, to ensure that this rule chapter benefits only small business concerns which are at least 51 percent owned and controlled in both form and substance by one or more disadvantaged individuals, the Department shall certify firms who wish to participate as DBEs under this rule chapter.

(2) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.51(b), each business, including the DBE partner in a joint venture, wishing to participate as a DBE in Department contracts shall complete and submit a Schedule A -- Certification Form No. 1 -- Department of Transportation Form 275-030-01, Rev. 04/96.

Currently certified DBEs that have had no changes in the ownership, control or independence of the firm since last certified by the Department, must reapply for DBE certification annually by completing Schedule C -- Certification Form No. 3 -- Department of Transportation Form 275-030-03, Rev. 04/96. Each entity wishing to participate as a joint venture DBE in Department contracts shall, in addition, complete and submit a Schedule B -- Certification Form No. 2 -- Department of Transportation Form 275-030-02, Rev. 08/93. The schedule(s) shall be signed by the authorized representative of the business entity and notarized.

(3) A DBE firm or DBE applicant shall submit a new Schedule A or Schedule B and B in the event a significant change in the structure of a firm occurs; such as a change of ownership or incorporation of a non-incorporated firm. Also, a new schedule may

be required whenever the Department has reason to believe that a substantial change in the firm has occurred.

(4) Within 10 days of any change of address for the DBE firm, the Department shall be notified in writing.

(5) A DBE need not submit a new Schedule A and/or B solely because of any change in the officers or the name of a corporation, but such information shall be certified to the Department within 10 days of the effective date of the change.

(6) A firm seeking certification as a DBE shall cooperate fully with the Department representative assigned to conduct an on-site review of the applicant firm at the business location and/or a project site(s). The on-site review should be scheduled within 60 days of receipt of the initial application for DBE certification, receipt of additional information, or upon request by the Department. An on-site review may include but is not limited to any of the following:

(a) Interviews with owners, key officers, and managers;

(b) Visits to project or facility sites;

(c) Inspection of any statistical or documentary materials relevant to the applicant firm's performance or resources;

(d) Visits to offices of applicant firm.

(7) Pursuant to 49 C.F.R. Subtitle A, Subpart D, Section 23.62, a firm seeking certification and recertification as a DBE shall meet the following standards. A firm which does not fulfill all the Department's criteria for certification shall not be considered a Disadvantaged Business Enterprise.

(a) The firm must be a small business concern;

(b) The firm must be at least 51 percent owned by one or more disadvantaged individuals, or, in the case of a publicly owned business, at least 51 percent of the stock must be owned by one or more disadvantaged individuals; and the management and daily business operations must be controlled by one or more of the disadvantaged individuals who own the firm.

1. Members of the groups named in subsection 14-78.002(18), F.A.C., are presumed to be disadvantaged; however, this presumption is rebuttable and may be challenged pursuant to Rule 14-78.0071, F.A.C. Membership in those groups shall be established on the basis of the individual's claim that he or she is a member of one of those groups and is so regarded by that particular community. Pursuant to 49 C.F.R., Part 23, Subpart D, Appendix C, to be considered a member of one of these groups, the individual must have held himself or herself out to be a member, have acted as a member of that group, and be capable of being identified by persons in the population at large as belonging to the disadvantaged group. However, the Department is not required to accept this claim if it determines the claim invalid.

2. Individuals certified by the Small Business Administration, pursuant to Section 8(a) of the Small Business Act (15 U.S.C. 637), as socially and economically disadvantaged, shall be accepted into the DBE Program based upon their Section 8(a) certification provided they are able to meet all remaining criteria under this rule chapter. Hence, 8(a) firms shall still be required to apply to the DBE Program and participate fully in the certification process as all other applicants. On-site reviews to verify the small business status of 8(a) certified firms will not be required during the certification process. In the event the Department becomes aware of information that questions the social and economic status of the applicant, the Department reserves the right to conduct an on-site review. Certification concerns of the Department will be forwarded to the Small Business Administration along with the appropriate documentation and recommendation.

3. Pursuant to 49 C.F.R., Part 23, Subpart D, Appendix C, A., individuals who are not members of the presumed groups but wish to be certified as disadvantaged must meet the following criteria:

a. Elements of Social Disadvantage. In order to determine that an individual is socially disadvantaged, the Department must conclude that the individual meets the following standards:

(I) The individual's social disadvantage must stem from his or her color, national origin; gender, physical disability; long-term residence in an environment isolated from the mainstream of American society; or other similar cause beyond the individual's control. The individual cannot establish social disadvantage on the basis of factors which are common to small business persons who are not socially disadvantaged. For example, because of their marginal financial status, many small businesses have difficulty obtaining credit through normal banking channels. An individual predicating a social disadvantage claim on denial of bank credit to his or her firm would have to establish that the denial was based on one or more of the listed causes, or similar causes – not simply on the individual's or the firm's marginal financial status.

(II) The individual must demonstrate that he or she has personally suffered social disadvantage, not merely claim membership in a non-designated group which could be considered socially disadvantaged. This can be achieved, for example, by describing specific instances of discrimination which the individual has experienced, or by recounting in some detail how his or her development in the business world has been thwarted by one or more of the listed causes or similar causes. As a general rule, the more specific an explanation of how one has personally suffered social disadvantage, the more persuasive it will be. In assessing such facts, the Department should place substantial weight on prior administrative or judicial findings of discrimination experienced by the individual. Such findings, however, are not necessarily conclusive evidence of an individual's social disadvantage; nor are they a prerequisite for establishing social disadvantage.

(III) The individual's social disadvantage must be rooted in treatment which he or she has experienced in American society, not in other countries.

(IV) The individual's social disadvantage must be chronic, longstanding, and substantial, not fleeting or insignificant. Typically, a number of incidents illustrating a person's social disadvantage, occurring over a substantial period of time, would be necessary to make a successful claim. Usually, only by demonstrating a series of obstacles which have impeded one's progress in the business world can an individual demonstrate chronic, longstanding, and substantial social disadvantage.

(V) The individual's social disadvantage must have negatively affected his or her entry into, and/or advancement in, the business world. The closer the individual can link social disadvantage to impairment of business opportunities, the stronger the case. For example, the Department should place little weight on annoying incidents experienced by an individual which have had little or no impact on the person's career or business development. On the other hand, the Department should place greater weight on concrete occurrences which have tangibly disadvantaged an individual in the business world.

b. Evidence of Social Disadvantage. Any evidence relevant to the applicant's claim will be considered. In addition to a personal statement from the individual claiming to be socially disadvantaged, such evidence may include, but is not limited to:

third party statements; copies of administrative or judicial findings of discrimination; and other documentation in support of matters discussed in the personal statement. Special emphasis will be given to the areas of education, employment, and business history. However, the applicant may present evidence relating to other matters as well. Moreover, the attainment of a quality education or job should not absolutely disqualify the individual from being found socially disadvantaged if sufficient other evidence of social disadvantage is presented.

(I) Education. The Department shall consider, as evidence of an individual's social disadvantage: denial of equal access to business or professional schools; denial of equal access to curricula; exclusion from social and professional association with students and teachers; denial of educational honors; social patterns or pressures which have discouraged the individual from pursuing a professional or business education; and other similar factors.

(II) Employment. The Department shall consider, as evidence of an individual's social disadvantage, discrimination in hiring; discrimination in promotions and other aspects of professional advancement; discrimination in pay and fringe benefits; discrimination in other terms and conditions of employment; retaliatory behavior by an employer; social patterns or pressures which have channelled the individual into non-professional or non-business fields; and other similar factors.

(III) Business History. The Department shall consider, as evidence of an individual's social disadvantage, unequal access to credit or capital; acquisition of credit under unfavorable circumstances; discrimination in receipt (award and/or bid) of government contracts; discrimination by potential clients; exclusion from business or professional organizations; and other similar factors which have retarded the individual's business development.

c. Economic Disadvantage. Pursuant to 49 C.F.R., Part 23, Subpart D, Appendix C, A., the Department shall always make a determination of social disadvantage before proceeding to make a determination of economic disadvantage. If the Department determines that the individual is not socially disadvantaged, it is not necessary to make the economic disadvantage determination.

(I) Elements of Economic Disadvantage. The applicants must show that they are socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same or similar line of business and competitive market area who are not socially disadvantaged.

(II) Evidence of Economic Disadvantage. In determining the degree of diminished credit and capital opportunities of a socially disadvantaged individual, consideration will be given to both the disadvantaged individual and the applicant concern with which he or she is affiliated. The test is not absolute deprivation, but rather disadvantage compared to business owners who are not socially disadvantaged individuals and firms owned by such individuals. Applicants must provide information about their economic situation when they seek eligibility as disadvantaged businesses. The Department shall attempt to become as knowledgeable as possible about the types of businesses with which the Department deals, so that the Department can make a reasonably informed comparison between an applicant firm and other firms in the same line of business. The Department is not required to make a detailed, point-by-point, accountant-like comparison of the businesses involved. The Department is expected to make a basic

judgment about whether the applicant firm and its socially disadvantaged owner(s) are in a more difficult economic situation than most firms (including established firms) and owners who are not socially disadvantaged.

(c) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(2), Subpart D, Appendix A, to be certified under this rule chapter, a DBE shall be an independent business entity. In assessing business independence, the Department shall consider all relevant factors, including the date the firm was established, the adequacy of its resources, and the degree to which financial relationship, equipment leasing, and other business relationships with non-DBE firms which vary from industry practice.

1. The ownership and control exercised by disadvantaged individuals shall be real, substantial, and continuing, and shall go beyond mere pro forma ownership of the firm, as reflected in its ownership documents. Where the applicant business is found to be a family-operated business, and when the firm's duties, responsibilities and decision-making are occurring jointly and mutually among the owners and principals, or occurring severally or individually along managerial and operational lines between disadvantaged and non-disadvantaged owners, in such instances the disadvantaged owners shall not be considered as controlling the business.

2. The disadvantaged owners shall enjoy the customary incidence of ownership and shall share in the risks and profits commensurate with their ownership interests, as demonstrated by an examination of the substance rather than form of financial and managerial arrangements. The following factors will be considered in determining whether the disadvantaged owners share in the risks and profits commensurate with their ownership:

a. The disadvantaged owners must demonstrate that they share income commensurate with the percentage of their ownership in the business concern, including but not limited to, salaries, draws, bonuses and profit-sharing, and other benefits.

b. The disadvantaged owners must share in all the risks assumed by the business firm commensurate with their percentage of ownership, including but not limited to start-up costs, third-party agreements, bonding applications, and other liabilities. Start-up contributions may include but are not limited to space, cash, equipment, real estate, inventory or services estimated at fair market value.

(d) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(5), for purposes of establishing a corporation as a certified DBE under this rule chapter, all securities which constitute ownership or control by disadvantaged individuals shall be held directly by socially and economically disadvantaged individuals. No securities held in trust for a minor, or by any guardian for a minor, shall be considered as held by disadvantaged individuals in determining the ownership or control of a corporation.

(e) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(3), to be certified under this rule chapter, the DBE shall be one in which the disadvantaged owner shall also possess the power to direct or cause the direction of the management, policies, and operations of the firm and to make day-to-day as well as major business decisions concerning the firm's management, policy, and operation.

1. The discretion of the disadvantaged owners shall not be subject to any formal or informal restrictions (including, but not limited to, franchise agreements, bylaw provisions, partnership agreements, trust agreements or charter requirements for

cumulative voting rights or otherwise) which would vary managerial discretion customary in the industry, or that would prevent the disadvantaged owners, without the cooperation or vote of a non-disadvantaged owner, from making a business decision for the firm. Pursuant to 49 C.F.R. Subtitle A, Subpart D, Appendix A to Section 23.62, the disadvantaged owner must control the operations of the business. Absentee ownership, or titular ownership by a disadvantaged individual who does not take an active role in controlling the business is not consistent with eligibility as DBE under this rule chapter.

2. In assessing the power of the disadvantaged owner to direct or cause the direction of the firm, the Department will look past stock ownership and consider the minority applicant's ownership interest, knowledge of the particular business, background, involvement in the business on a day-to-day basis, expertise, involvement by the non-disadvantaged owners, employees or non-employees, other full or part-time employment by the minority applicant and the size of the applicant's business.

3. In further determining whether the disadvantaged owners also possess the power to direct or cause the direction of the management, policies and operations of the firm and have the requisite decision-making authority, the Department may look to the control lodged in the owners who are not socially and economically disadvantaged individuals. Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(4), if the owners of the firm who are not disadvantaged individuals are disproportionately responsible for the operation of the firm then the firm, for purposes of this rule chapter, is not controlled by disadvantaged individuals and shall not be considered a DBE within the meaning of this rule chapter. Where the actual management of the firm is contracted out to individuals other than the owner(s), those persons who have the ultimate power to hire and fire the managers can be considered as controlling the business for the purposes of this rule chapter, provided the contract does not affect the applicant's ability to qualify under the other criteria of the rule.

4. The disadvantaged owners shall have managerial and technical expertise in the form of knowledge, training, education and/or experience required to make decisions in the critical areas of operation. The level of expertise required must be such that the disadvantaged owners possess the specialized knowledge, attributes, and skills necessary to critically evaluate and independently utilize information supplied to the disadvantaged owner by its subordinates. Administrative and managerial expertise will not suffice as a substitute for technical expertise. In determining the applicant's eligibility, the Department will review the prior employment and educational backgrounds of the disadvantaged owners, the professional skills, training and/or licenses required for the given industry, the previous and existing managerial relationship between and among all owners, especially those who are family related, and the timing and purpose of management changes.

5. For those disadvantaged owner(s) requiring professional licensing (e.g., public accounting, law, engineering, etc.), the Department must determine that the small business concern holds the requisite licensing, and all licensing must comply with applicable state law.

(f) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(6), to be certified under this rule chapter, the DBE shall be one in which the contributions of capital or expertise are real and substantial.

1. In order for expertise to be utilized to substantiate stock ownership, the applicant must be able to calculate and verify the dollar value of such expertise and establish that the dollar value correlates to the value of the interest acquired; and establish that such expertise was actually contributed.

2. Contributions of capital may be considered in the form of payment for stock, conversion of liabilities or contributions of cash or other assets. For the purposes of the DBE program these sources of capital contributions are considered investments in the business and as such cannot be considered loaned to the company.

3. Contributions of capital and expertise documentation shall include but are not limited to transfer titles of equipment and property, checks, financial statements, partnership agreements, corporate organization minutes, educational documentation, professional licenses or work experience in the administrative and technical areas of the business.

4. Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(a)(6), examples of insufficient contributions include, but are not limited to, a promise to contribute capital, a note payable to the firm or its owners who are not disadvantaged individuals, or the mere participation as an employee, rather than as a manager.

(g) Disadvantaged owners seeking certification as a supplier of products which are required for DBE contracts, must be a regular dealer as defined in Rule 14-78.002, F.A.C.

(h) In order to qualify for the DBE program, trucking companies must own or lease at least one truck which is not owner operated, and which is utilized in the day-to-day critical areas of the business. All qualifying trucking companies must also comply with sub-subparagraph 14-78.003(2)(b)3.i., F.A.C.

(i) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(b), in addition to the above standards, the Department shall give special consideration to the following circumstances:

1. Newly formed firms and firms whose ownership or control has changed shall be closely scrutinized to determine the reasons for the timing of the formation of or change in the firm.

2. A previous and/or continuing employer-employee relationship between or among present owners shall be carefully reviewed to ensure that the employee-owner has sufficient management responsibilities and capabilities.

3. Any relationship between an applicant and a non-DBE which has an interest in the enterprise seeking certification shall be carefully reviewed to determine if the interest of the non-DBE conflicts with the ownership and control requirements of this rule chapter.

(8) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(c), a joint venture is eligible under this rule chapter if the DBE partner of the joint venture is a certified DBE and if the DBE partner in the joint venture is responsible for a clearly defined portion of the work to be performed and shares in the ownership, control, management responsibilities, risks, and profits of the joint venture.

(9) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(d), a joint venture is eligible to compete in an DBE set-aside under this section if the DBE partner of the joint venture meets the standards of an eligible DBE set forth above, and the DBE partner's share in the ownership, control, and management responsibilities, risks, and profits of the joint venture is at least 51 percent and the DBE partner is responsible for a clearly defined portion of the work to be performed.

(10) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(e), a business wishing to be certified as an DBE or joint venture DBE by the Department shall cooperate with the Department in supplying additional information which may be requested

in order to make a determination.

(11) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(f), once certified, a DBE shall update its submission annually by submitting a new Schedule A or Schedule C as specified in subsections 14-78.005(2) and (3), F.A.C. At any time there is a change in ownership or control of the firm, the DBE shall submit a new Schedule A within 10 days of the date of the change.

(12) Pursuant to 49 C.F.R. Subtitle A, Subpart C, Section 23.53(h), the Department shall safeguard from disclosure to unauthorized persons information that reasonably may be regarded as confidential business information, consistent with Federal, state and local law.

(13) Decision-making rationale as well as specific U.S. Department of Transportation denials will be considered by the Department in its certification and recertification process.

(14) DBEs certified by the Department shall, for a minimum of five years, maintain and make available to the Department, upon request, the following records:

(a) A copy of all contractors' initial solicitation of quotations for contracts to be let by the Department and any subsequent communications regarding such solicitations.

(b) A copy of all quotations or other correspondence submitted to contractors by DBEs for contracts to be let by the Department.

(c) Copies of DBE payment certification as required by contract specifications for each Department project in which the DBE work is counted toward the DBE goal.

(d) Copies of all other correspondence or written documents involving the Department and DBE firm.

(e) A copy of all documentation to confirm DBE participation which is counted toward the DBE goal by the prime contractor.

Specific Authority 334.044(2), 337.125(4), 337.137(3), 339.0805(1) FS. Law Implemented 337.125, 337.137, 339.05, 339.0805 FS.

History—New

12-9-81, Amended 5-23-84, Formerly 14-78.05, Amended 9-21-87, 5-4-88, 6-24-91, 12-2-93, 4-30-96.

14-78.007 Procedure for Certification.

(1) All firms, including the DBE partner in a joint venture, shall complete and submit a Schedule A or Schedule C as specified in subsection 14-78.005(2) and (3), F.A.C. Firms wishing to participate as a joint venture shall in addition complete and submit a Schedule B. The schedule(s) shall be signed by the authorized representative of the business entity, notarized, and filed with the Equal Opportunity Office, 605 Suwannee Street, Mail Station 65, Tallahassee, Florida 32399-4050. The schedule(s) cannot be notarized by an owner or officer of the applicant business. A firm certified by the Small Business Administration shall in addition submit a copy of the letter approving the firm's participation in the Small Business Administration Section 8(a) program.

(2) The following procedures shall be applicable to any application for certification as a DBE:

(a) Within 30 days after receipt of an application for certification as a DBE, the Department shall examine the application, notify the applicant of any apparent errors or omissions, and request any additional information the Department is permitted by

law to require. In order for the additional information to be considered, the DBE shall return the requested information to the Department within 30 days after receipt of the request. If the additional information is not received within 30 days, the Department will process the application with the information as provided unless the applicant has requested and received an extension in writing.

(b) The Department shall approve or deny every application for certification as a DBE within 90 days after receipt of the original application or receipt of the timely requested additional information or correction of errors or omissions. For new certifications and recertifications, the 90-day processing period will begin upon receipt of the application or timely receipt of the timely requested additional information or correction of errors or omissions.

(c) The Department may make such inquiries and investigations as deemed necessary to comply with 49 C.F.R. Part 23 and may conduct an on-site review to verify and evaluate the information provided by the applicant. The DBE must be available for an on-site review as required by 49 C.F.R. 23.45(3) within 60 days of receipt of the application for DBE certification or receipt of requested additional information. Failure to be available for on-site review shall be grounds for denial of certification.

(d) The 90-day period shall be tolled by the initiation of a proceeding under Section 120.57, Florida Statutes, and shall resume 10 days after the recommended order is submitted to the Department and the parties.

(3) The Department shall certify a disadvantaged business enterprise, which certification shall be valid for 12 months. The Department's application for certification for a disadvantaged business enterprise shall require sufficient information to determine eligibility as a small business concern owned and controlled by a disadvantaged individual. An applicant who is denied certification may not reapply within six months after issuance of the denial letter or the final order, whichever is later. The application and financial information are confidential and exempt from Section 119.07(1), Florida Statutes. This exemption from Section 119.07(1), Florida Statutes, is subject to the Open Government Sunset Review Act in accordance with Section 119.14, Florida Statutes.

(4) Certification is conditioned upon continued eligibility. In order to avoid a break in certification, at least 90 days prior to the expiration of its certification, a DBE shall submit a new Schedule A or Schedule C as specified in subsections 14-78.005(2) and (3), F.A.C., and if a joint venture, a new Schedule A and a new Schedule B. If the DBE has applied for recertification at least 90 days prior to the expiration of its existing certification and the Department has requested additional information as specified in paragraph 14-78.007(2)(a), F.A.C., the DBE will remain in the DBE directory during the pendency of the recertification process or any timely filed appeal action. If the DBE did not apply for recertification at least 90 days prior to the expiration of its existing certification and a decision has not been made by the Department prior to the certification expiration date, then the DBE will be removed from the DBE directory upon expiration.

(5) If at any time there is a change in address, ownership, or control of the firm, the DBE shall, within 10 days following the change, notify the Equal Opportunity Office as specified in subsections 14-78.005(3), (4), and (5), F.A.C.

(6) The Department is required to provide written notice its intent to certify or deny the firm. If the Department intends to deny

an application for certification as a DBE, the Department shall provide, by certified mail, return receipt requested, or by personal delivery to the office of the applicant, notice of the facts which warrant such action. A mailed notice shall constitute full and complete notice even if the mail is returned as refused or unclaimed by the applicant provided the Department mails such notice to the last known address as provided by the applicant in writing.

(a) The written notice of denial of an application for certification shall contain:

1. The particular facts or basis for denial of the application.
2. A statement that the applicant has the right to an administrative hearing pursuant to Section 120.57, Florida Statutes.
3. A statement that the denial shall become conclusive and final agency action if no request for a hearing is filed within 15 days of receipt of the notice of denial.

(b) All requests for hearing shall be made in writing and shall be filed with the Clerk of Agency Proceedings, 605 Suwannee Street, MS 58, Haydon Burns Building, Tallahassee, Florida 32399-0458, within 15 days of receipt of the notice of denial of the application and shall include:

1. The name and address of the party making the request;
2. A statement that the party is requesting a formal proceeding pursuant to Section 120.57(1), Florida Statutes, or an informal proceeding pursuant to Section 120.57(2), Florida Statutes; and
3. A reference to the notice of denial of the application.

(c) If the applicant fails to file a request for a hearing within 15 days after receipt of the notice of denial of the application, the denial shall become conclusive and final agency action.

(d) Where the notice is refused or unclaimed, the 15 days will begin to run as of the last date of attempted contact by the delivery agent.

Specific Authority 334.044(2), 339.0805(1) FS. Law Implemented 120.57, 120.60, 334.044(27), 339.05, 339.0805 FS. History—New 12-9-81, Amended 5-23-84, Formerly 14-78.07, Amended 9-21-87, 5-4-88, 6-24-91, 12-2-93, 4-30-96.

14-78.0071 Challenge Procedure.

(1) Pursuant to 49 C.F.R. Subtitle A, Subpart D, Section 23.69, any third party may challenge the socially and economically disadvantaged status of any individual (except an individual who has a current 8(a) certification from the Small Business Administration) who is a member of one of the presumptive groups listed in subsection 14-78.002(18), F.A.C., if that individual is an owner of a firm certified by or seeking certification from the Department as a disadvantaged business.

(a) The challenge shall be made in writing to the Department and shall be filed with the Clerk of Agency proceedings and shall include:

1. The name and address of the party making the challenge;
2. The name of the person being challenged;
3. All information available to the challenging third party relevant to a determination of whether the challenged party is in fact disadvantaged.

(b) The Department shall determine, on the basis of the information provided by the challenging party, whether there is reason to believe that the challenged party is in fact not disadvantaged.

1. If the Department determines that there is not reason to believe that the challenged party is not disadvantaged, the Department shall so inform the challenging party in writing. This terminates the proceeding.

2. If the Department determines that there is reason to believe that the challenged party is not disadvantaged, the Department shall begin proceedings as provided in subsections (c), (d), and (e) of this section.

(c) The Department shall notify the challenged party in writing by certified mail, return receipt requested, or personal delivery to the office of the challenged party, that his or her status as a disadvantaged individual has been challenged. The notice shall identify the challenging party and summarize the grounds for the challenge. The notice shall also require the challenged party to provide to the Department, within 15 days of receipt of the notice, information sufficient to permit the Department to evaluate his or her status as a disadvantaged individual.

(d) The Department shall evaluate the information available to it and make a proposed determination of the disadvantaged status of the challenged party. The Department shall notify both parties of this proposed determination in writing, setting forth the reasons for its proposal. The Department shall provide an opportunity to the parties for an informal hearing, at which they can respond to this proposed determination in writing and in person.

(e) Following the informal hearing, the Department shall make a final determination. The Department shall inform the parties in writing of the final determination, setting forth the reasons for its decision.

(f) In making the determinations called for in subsections (b), (d) and (e) of this section, the Department shall use the standards set forth in Rule 14-78.005, F.A.C., of this rule chapter.

(g) During the pendency of a challenge under this section, the presumption that the challenged party is a disadvantaged individual shall remain in effect.

(h) The final determination of the Department under sub-paragraphs (1)(a)2.a. and (1)(a)5. may be appealed to the U.S. Department of Transportation by the adversely affected party to the proceeding under the procedures of 49 C.F.R. Subtitle A, Section 23.55.

(2) The Department shall initiate a challenge against any applicant's status or certified DBE if it obtains credible information which questions the disadvantaged status of the applicant.

(a) If the Department challenges the socially and economically disadvantaged status of an applicant, it will issue an intent to deny certification pursuant to subsection 14-78.007(6), F.A.C.

(b) If the Department challenges the socially and economically disadvantaged status of a currently certified DBE, the Department shall revoke certification under the procedures specified in subsections 14-78.008(2), (3), and (4), F.A.C.

Specific Authority 120.53(1)(b), 334.044(2), 339.0805(1) FS. Law Implemented 120.57, 120.60, 334.044(27), 339.05, 339.0805 FS. History—New

6-24-91, Amended 12-2-93.

14-78.008 Suspension or Revocation.

(1) The Department may suspend, for a specified period of time, or revoke the Department's certification of DBE status if it finds:

(a) The DBE no longer meets the certification standards set forth in Rule 14-78.005, F.A.C.

(b) The DBE willfully made a false, deceptive, or fraudulent statement in its application for certification or in any other information submitted to the Department.

(c) The DBE fails to maintain the records required by subsections 14-78.005(5) and (14), F.A.C.

(d) The DBE fails to perform a commercially useful function on projects for which the DBE is utilized to satisfy contract goals.

(e) The DBE fails to fulfill its contractual obligations with contractors.

(f) The DBE fails to respond to any requests for bid quotations from contractors for three consecutive lettings. For purposes of this provision a statement of noninterest or a bid quotation will be considered a response.

(g) The DBE subordinates more than 49 percent of the amount of any single subcontract which was used by the prime contractor to meet the contract DBE goals. The Department shall revoke for a period of one year, the DBE certification of any DBE firm found to be in violation of this subsection. Subcontract work performed by a firm which is an affiliate of the DBE firm is considered subordination.

(h) The DBE fails to provide notarized certification of payments received on specific projects to the prime contractor as required by contract specifications.

(i) The DBE fails to schedule an on-site review upon request by the Department.

(j) The DBE becomes insolvent or is the subject of a bankruptcy proceeding.

(k) It has been determined per Rule 14-78.0071, F.A.C., that the challenged party is not disadvantaged.

(2) The Department shall revoke the certification of a disadvantaged business enterprise upon receipt of notification of any change in ownership which results in the disadvantaged individual or individuals used to qualify the business as a disadvantaged business enterprise, no longer owning at least 51 percent of the business enterprise. Such notification shall be made to the Department by certified mail within 10 days after the change in ownership and such business shall be removed from the certified disadvantaged business list until a new application is submitted and approved by the Department. Failure to notify the Department of the change in the ownership which qualifies the business as a disadvantaged business enterprise will result in revocation of certification, and subject the business to the provisions of Section 337.135, Florida Statutes.

(3) With the exception of a change in the qualifying 51% minority ownership, prior to suspending or revoking certification as a DBE, the Department shall inform the DBE in writing by certified mail, return receipt requested, or personal delivery to the office of the DBE, of the following:

(a) The statutory provision(s) or rule(s) of the Florida Administrative Code which is alleged to have been violated.

(b) The specific facts or conduct relied upon to justify the revocation or suspension.

(c) A statement that the DBE has the right to file a request for an administrative hearing pursuant to Section 120.57, Florida Statutes, within 15 days of receipt of the notice of revocation or suspension.

(d) A statement that the suspension or revocation shall become conclusive and final agency action if no request for a hearing is filed within 15 days of receipt of the notice of revocation or suspension of certification.

(4) All requests for a hearing shall be made in writing and shall be filed with the Clerk of Agency Proceedings within 15 days of receipt of the notice of suspension or revocation of certification. The request shall include:

(a) The name and address of the DBE making the request;

(b) A statement that the DBE is requesting a formal proceeding pursuant to Section 120.57(1), Florida Statutes, or an informal proceeding, pursuant to Section 120.57(2), Florida Statutes; and

(c) A reference to the notice of revocation or suspension of certification received from the Department and a statement of the specific grounds on which the proposed action is being challenged.

(5) If the DBE fails to file a request for a hearing within 15 days after receipt of the notice of revocation or suspension of certification, the suspension or revocation shall become conclusive and final agency action.

Specific Authority 334.044(2), 337.137(3), 339.0805(2) FS. Law Implemented 120.57, 334.044(27) 337.137, 339.05, 339.0805 FS. History—New 12-9-81, Amended 5-23-84, Formerly 14-78.08, Amended 9-21-87, 5-4-88, 6-24-91, 12-2-93.

14-78.0081 Federal Appeal Rights.

In addition to the other remedies provided in this rule chapter, any person adversely affected by any action taken by the Department may exercise the appeal rights granted in 49 C.F.R. Part 23, Section 23.55 and Subpart D, Appendix A.

Specific Authority 334.044(2), 339.0805(1) FS. Law Implemented 339.05, 339.0805 FS. History—New 5-23-84, Formerly 14-78.081, Amended 9-21-87, 12-2-93.

14-78.009 Forms.

The following forms are incorporated by reference into this rule chapter and shall be used by firms when applying for certification as a DBE:

- (1) Schedule A – Certification Form No. 1 – Department of Transportation Form 275-030-01, Rev. 04/96.
 - (2) Schedule B – Certification Form No. 2 – Department of Transportation Form 275-030-02, Rev. 08/93.
 - (3) Schedule C – Certification Form No. 3 – Department of Transportation Form 275-030-03, Rev. 04/96.
 - (4) Disadvantaged Business Enterprise (DBE) Utilization Summary Form, Department of Transportation Form 275-020-003, Rev. 10/95.
 - (5) Disadvantaged Business Enterprise (DBE) Utilization Form, Department of Transportation Form 275-020-004, Rev. 10/95.
- Copies of these forms may be obtained by contacting the Liaison Officer, Equal Opportunity Office, 605 Suwannee Street, Mail Station 65, Tallahassee, Florida 32399-4050, (850) 414-4747.
- Specific Authority 334.044(2), 339.0805(1), (2) FS. Law Implemented 334.044(27), 339.05, 339.0805 FS. History—New 12-9-81, Amended 5-23-84, Formerly 14-78.09, Amended 9-21-87, 5-4-88, 6-24-91, 12-2-93, 4-30-96.*

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION FOR FEDERAL AID CONTRACTS

(Compliance with 49CFR, Section 29.510)

(Appendix B Certification]

It is certified that neither the below identified firm nor its principals are presently suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

Name of Consultant:

By: _____ Date: _____
Authorized Signature

Title: _____

Instructions for Certification

1. By signing and submitting this certification with the proposal, the prospective lower tier participant is providing the certification set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted. If at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms 'covered transaction', 'debarred', 'suspended', 'ineligible', 'lower tier covered transaction', 'participant', 'person', 'primary covered transaction', 'principal', 'proposal', and 'voluntarily excluded', as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the person to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Appendix B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction", without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant are not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department may pursue available remedies, including suspension and/or debarment.

6-12.2 Source of Supply - Steel (Federal-Aid Contracts Only): For Federal-aid Contracts, only use steel and iron produced 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 melding and mixing and continuing through the bending and coating stages. A manufactured steel or iron product is complete only when all grinding, drilling, welding, finishing and coating have been completed. If a domestic product is taken outside the United States for any process, it becomes foreign source material. When using steel and iron as a component of any manufactured product incorporated into the project (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply, except that the manufacturer may use minimal quantities of foreign steel and iron when the 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. Provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of this specification and the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the product was produced entirely within the United States, or (2) a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual value). Furnish each such certification to the Engineer prior to incorporating the material into the project. When FHWA allows the use of foreign steel on a project, furnish invoices to document the cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project.

stated in the plans or special provisions. Federal participation will be limited to (1) the cost of the material to the State transportation department or other public agency; or (2) the fair and reasonable value of the material, whichever is less. Special cases may arise that will justify Federal participation on a basis other than that set forth above. Such cases should be fully documented and receive advance approval by the FHWA Division Administrator.

(f) Costs incurred by the State transportation department or other public agency for acquiring a designated source or the right to take materials from it will not be eligible for Federal participation if the source is not used by the contractor.

(g) The contract provisions for one or a combination of Federal-aid projects shall not specify a mandatory site for the disposal of surplus excavated materials unless there is a finding by the State transportation department with the concurrence of the FHWA Division Administrator that such placement is the most economical except that the designation of a mandatory site may be permitted based on environmental considerations, provided the environment would be substantially enhanced without excessive cost.

§ 635.409 Restrictions upon materials.

No requirement shall be imposed and no procedure shall be enforced by any State transportation department in connection with a project which may operate:

(a) To require the use of or provide a price differential in favor of articles or materials produced within the State, or otherwise to prohibit, restrict or discriminate against the use of articles or materials shipped from or prepared, made or produced in any State, territory or possession of the United States; or

(b) To prohibit, restrict or otherwise discriminate against the use of articles or materials of foreign origin to any greater extent than is permissible under policies of the Department of Transportation as evidenced by requirements and procedures prescribed by the FHWA Administrator to carry out such policies.

§ 635.410 Buy America requirements.

(a) The provisions of this section shall prevail and be given precedence over any requirements of this subpart which are contrary to this section. However, nothing in this section shall be construed to be contrary to the requirements of § 635.409(a) of this subpart.

(b) No Federal-aid highway construction project is to be authorized for advertisement or otherwise authorized to proceed unless at least one of the following requirements is met:

(1) The project either: (i) Includes no permanently incorporated steel or iron materials, or (ii) if steel or iron materials are to be used, all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes which protect or enhance the value of the material to which the coating is applied.

(2) The State has standard contract provisions that require the use of domestic materials and products, including steel and iron materials, to the same or greater extent as the provisions set forth in this section.

(3) The State elects to include alternate bid provisions for foreign and domestic steel and iron materials which comply with the following requirements. Any procedure for obtaining alternate bids based on furnishing foreign steel and iron materials which is acceptable to the Division Administrator may be used. The contract provisions must (i) require all bidders to submit a bid based on furnishing domestic steel and iron materials, and (ii) clearly state that the contract will be awarded to the bidder who submits the lowest total bid based on furnishing domestic steel and iron materials unless such total bid exceeds the lowest total bid based on furnishing foreign steel and iron materials by more than 25 percent.

(4) When steel and iron materials are used in a project, the requirements of this section do not prevent a minimal use of foreign steel and iron materials, if the cost of such materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. For purposes of this paragraph, the cost is that

Federal Highway Administration, DOT

§ 635.411

shown to be the value of the steel and iron products as they are delivered to the project.

(c)(1) A State may request a waiver of the provisions of this section if;

(i) The application of those provisions would be inconsistent with the public interest; or

(ii) Steel and iron materials/products are not produced in the United States in sufficient and reasonably available quantities which are of a satisfactory quality.

(2) A request for waiver, accompanied by supporting information, must be submitted in writing to the Regional Federal Highway Administrator (RFHWA) through the FHWA Division Administrator. A request must be submitted sufficiently in advance of the need for the waiver in order to allow time for proper review and action on the request. The RFHWA will have approval authority on the request.

(3) Requests for waivers may be made for specific projects, or for certain materials or products in specific geographic areas, or for combinations of both, depending on the circumstances.

(4) The denial of the request by the RFHWA may be appealed by the State to the Federal Highway Administrator (Administrator), whose action on the request shall be considered administratively final.

(5) A request for a waiver which involves nationwide public interest or availability issues or more than one FHWA region may be submitted by the RFHWA to the Administrator for action.

(6) A request for waiver and an appeal from a denial of a request must include facts and justification to support the granting of the waiver. The FHWA response to a request or appeal will be in writing and made available to the public upon request. Any request for a nationwide waiver and FHWA's action on such a request may be published in the FEDERAL REGISTER for public comment.

(7) In determining whether the waivers described in paragraph (c)(1) of this section will be granted, the FHWA will consider all appropriate factors including, but not limited to, cost, administrative burden, and delay that would be imposed if the provision were not waived.

(d) Standard State and Federal-aid contract procedures may be used to assure compliance with the requirements of this section.

[48 FR 53104, Nov. 25, 1983, as amended at 49 FR 18821, May 3, 1984; 58 FR 38975, July 21, 1993]

§ 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State transportation department certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State transportation department wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

**CERTIFICATION FOR DISCLOSURE OF LOBBYING ACTIVITIES
ON FEDERAL-AID CONTRACTS
(Compliance with 49CFR, Section 20.100 (b))**

The prospective participant certifies, by signing this certification, that to the best of his or her knowledge and belief:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions. (Standard Form-LLL can be obtained from the Florida Department of Transportation's Professional Services Administrator or Procurement Office.)

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

Name of Consultant:

By: _____ Date: _____ Authorized Signature

Title: _____

Wage Rates

General Decision Number: FL140212

01/03/2014 FL212 State: Florida

Construction Type: Highway

County: Hillsborough County in Florida.

HIGHWAY CONSTRUCTION PROJECTS

Superseded General Decision Number: FL20130271

Modification Number 0 Publication Date 01/03/2014

SUFL2013-030 08/19/2013

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 15.08	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 14.59	0.00
ELECTRICIAN.....	\$ 21.80	0.00
FENCE ERECTOR.....	\$ 13.58	0.00
HIGHWAY/PARKING LOT STRIPING:		
Operator (Striping Machine)....	\$ 16.69	0.00
HIGHWAY/PARKING LOT STRIPING: Painter...	\$ 12.13	0.00
INSTALLER - GUARDRAIL.....	\$ 11.39	0.00
IRONWORKER, ORNAMENTAL.....	\$ 13.48	0.00
IRONWORKER, REINFORCING.....	\$ 17.37	0.00
IRONWORKER, STRUCTURAL.....	\$ 16.42	0.00
LABORER: Asphalt, Includes		
Raker, Shoveler, Spreader and Distributor.....	\$ 12.64	0.00
LABORER: Common or General.....	\$ 11.71	0.00
LABORER: Flagger.....	\$ 11.86	0.00
LABORER: Grade Checker.....	\$ 13.96	0.00
LABORER: Landscape & Irrigation.....	\$ 10.07	0.00
LABORER: Mason Tender - Cement/Concrete....	\$ 12.56	0.56
LABORER: Pipelayer.....	\$ 14.29	0.00
LABORER: Laborer-Cones/Barricades/		
Barrels - Setter/Mover/Sweeper.....	\$ 12.39	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 16.38	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 12.88	0.00
OPERATOR: Boom.....	\$ 13.94	1.28
OPERATOR: Broom/Sweeper.....	\$ 13.69	0.00
OPERATOR: Bulldozer.....	\$ 18.11	0.00
OPERATOR: Concrete Finishing Machine.....	\$ 15.44	0.00
OPERATOR: Concrete Pump.....	\$ 19.77	0.00
OPERATOR: Concrete Saw.....	\$ 16.57	0.00
OPERATOR: Crane.....	\$ 22.33	0.00
OPERATOR: Curb Machine.....	\$ 19.67	0.00
OPERATOR: Drill.....	\$ 14.78	0.00
OPERATOR: Forklift.....	\$ 13.52	0.00
OPERATOR: Gradall.....	\$ 14.71	0.00
OPERATOR: Grader/Blade.....	\$ 20.71	0.00
OPERATOR: Loader.....	\$ 14.99	0.00
OPERATOR: Mechanic.....	\$ 17.49	0.00
OPERATOR: Milling Machine Groundsman.....	\$ 16.20	0.00
OPERATOR: Milling Machine.....	\$ 16.26	0.00
OPERATOR: Oiler.....	\$ 17.61	0.00
OPERATOR: Paver (Asphalt,		
Aggregate, and Concrete).....	\$ 13.51	0.00

OPERATOR: Piledriver.....	\$ 17.23	0.00
OPERATOR: Post Driver		
(Guardrail/Fences).....	\$ 19.35	0.00
OPERATOR: Roller.....	\$ 14.14	0.00
OPERATOR: Scraper.....	\$ 11.74	0.00
OPERATOR: Screed.....	\$ 16.67	0.00
OPERATOR: Tractor.....	\$ 13.39	0.00
OPERATOR: Trencher.....	\$ 13.78	0.00
PAINTER: Spray.....	\$ 16.38	0.00
TRAFFIC SIGNALIZATION:		
Traffic Signal Installation.....	\$ 16.54	0.00
TRUCK DRIVER: Dump Truck.....	\$ 12.81	0.00
TRUCK DRIVER: Flatbed Truck....	\$ 14.13	0.00
TRUCK DRIVER: Lowboy Truck.....	\$ 15.56	0.00
TRUCK DRIVER: Slurry Truck.....	\$ 11.96	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.88	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example. Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates. 0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter?

This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the

interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

WAGE RATES FOR FEDERAL-AID PROJECTS. (Rev 1-21-13)
Article 7-16 (of the Supplemental Specifications) is expanded by the following: For this Contract, payment of predetermined minimum wages applies. The U.S. Department of Labor Wage Rates applicable in this Contract are listed in Wage Rate Decision Number(s) FL 212 as modified up through ten days prior to opening of bids. Obtain the applicable General Decision(s) (Wage Tables) through the Department's web site and ensure that employees receive the minimum wages applicable. Review the General Decisions for all classifications necessary to complete the project. Request additional classifications through the Engineer's office when needed. When multiple wage tables are assigned to a Contract general guidance of their use and examples of construction applicability is available on the Department's web site. Contact the Department's Wage Rate Coordinator before bidding if there are still questions concerning the applicability of multiple wage tables.

The URL for obtaining the Wage Rate Decisions is:
www.dot.state.fl.us/construction/wage_html.

Contact the Department's Wage Rate Coordinator, James King, at (813) 635-3416 if the Department's web site cannot be accessed or there are questions.

WR-2

(c) A State transportation department may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

(e) In the case of a design-build project, the following requirements apply: Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the Request for Proposals document unless the conditions of paragraph (a) of this section are applicable.

(f) State transportation departments (State DOTs) shall have the autonomy to determine culvert and storm sewer material types to be included in the construction of a project on a Federal-aid highway.

[41 FR 36204, Aug. 27, 1976, as amended at 67 FR 75926, Dec. 10, 2002; 71 FR 66454, Nov. 15, 2006; 78 FR 5717, Jan. 28, 2013]

§ 635.413 Guaranty and warranty clauses.

The STD may include warranty provisions in National Highway System (NHS) construction contracts in accordance with the following:

(a) Warranty provisions shall be for a specific construction product or feature. Items of maintenance not eligible for Federal participation shall not be covered.

(b) All warranty requirements and subsequent revisions shall be submitted to the Division Administrator for advance approval.

(c) No warranty requirement shall be approved which, in the judgment of the Division Administrator, may place an undue obligation on the contractor for items over which the contractor has no control.

(d) A STD may follow its own procedures regarding the inclusion of warranty provisions in non-NHS Federal-aid contracts.

(e) In the case of a design-build project, the following requirements will apply instead of paragraphs (a) through (d) of this section.

(1) General project warranties may be used on NHS projects, provided:

(i) The term of the warranty is short (generally one to two years); however, projects developed under a public-private agreement may include warranties that are appropriate for the term of the contract or agreement.

(ii) The warranty is not the sole means of acceptance;

(iii) The warranty must not include items of routine maintenance which are not eligible for Federal participation; and,

(iv) The warranty may include the quality of workmanship, materials and other specific tasks identified in the contract.

(2) Performance warranties for specific products on NHS projects may be used at the STD's discretion. If performance warranties are used, detailed performance criteria must be provided in the Request for Proposal document.

(3) The STD may follow its own procedures regarding the inclusion of warranty provisions on non-NHS Federal-aid design-build contracts.

(4) For best value selections, the STD may allow proposers to submit alternate warranty proposals that improve upon the warranty terms in the RFP document. Such alternate warranty proposals must be in addition to the base proposal that responds to the RFP requirements.

[60 FR 44274, Aug. 25, 1995, as amended at 67 FR 75926, Dec. 10, 2002; 72 FR 45336, Aug. 14, 2007]

§ 635.417 Convict produced materials.

(a) Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been:

(1) Produced by convicts who are on parole, supervised release, or probation from a prison or

(2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.

(b) *Qualified prison facility* means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in Federal-aid highway construction projects.

[53 FR 1923, Jan. 25, 1988, as amended at 58 FR 38975, July 21, 1993]

PART 636—DESIGN-BUILD CONTRACTING

Subpart A—General

Sec.

- 636.101 What does this part do?
- 636.102 Does this part apply to me?
- 636.103 What are the definitions of terms used in this part?
- 636.104 Does this part apply to all Federal-aid design-build projects?
- 636.105 Is the FHWA requiring the use of design-build?
- 636.106 [Reserved]
- 636.107 May contracting agencies use geographic preference in Federal-aid design-build or public-private partnership projects?
- 636.108 [Reserved]
- 636.109 How does the NEPA process relate to the design-build procurement process?
- 636.110 What procedures may be used for solicitations and receipt of proposals?
- 636.111 Can oral presentations be used during the procurement process?
- 636.112 May stipends be used?
- 636.113 Is the stipend amount eligible for Federal participation?
- 636.114 What factors should be considered in risk allocation?
- 636.115 May I meet with industry to gather information concerning the appropriate risk allocation strategies?
- 636.116 What organizational conflict of interest requirements apply to design-build projects?
- 636.117 What conflict of interest standards apply to individuals who serve as selection team members for the owner?
- 636.118 Is team switching allowed after contract award?
- 636.119 How does this part apply to a project developed under a public-private partnership?

Subpart B—Selection Procedures, Award Criteria

- 636.201 What selection procedures and award criteria may be used?
- 636.202 When are two-phase design-build selection procedures appropriate?
- 636.203 What are the elements of two-phase selection procedures for competitive proposals?
- 636.204 What items may be included in a phase-one solicitation?
- 636.205 Can past performance be used as an evaluation criteria?
- 636.206 How do I evaluate offerors who do not have a record of relevant past performance?
- 636.207 Is there a limit on short listed firms?
- 636.208 May I use my existing prequalification procedures with design-build contracts?
- 636.209 What items must be included in a phase-two solicitation?
- 636.210 What requirements apply to projects which use the modified design-build procedure?
- 636.211 When and how should tradeoffs be used?
- 636.212 To what extent must tradeoff decisions be documented?

Subpart C—Proposal Evaluation Factors

- 636.301 How should proposal evaluation factors be selected?
- 636.302 Are there any limitations on the selection and use of proposal evaluation factors?
- 636.303 May pre-qualification standards be used as proposal evaluation criteria in the RFP?
- 636.304 What process may be used to rate and score proposals?
- 636.305 Can price information be provided to analysts who are reviewing technical proposals?

Subpart D—Exchanges

- 636.401 What types of information exchange may take place prior to the release of the RFP document?
- 636.402 What types of information exchange may take place after the release of the RFP document?
- 636.403 What information may be exchanged with a clarification?
- 636.404 Can a competitive range be used to limit competition?
- 636.405 After developing a short list, can I still establish a competitive range?
- 636.406 Are communications allowed prior to establishing the competitive range?
- 636.407 Am I limited in holding communications with certain firms?

Title VI - Non-Discrimination Policy - APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

- (1.) Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation (hereinafter, "USDOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.
- (2.) Nondiscrimination: The Contractor, with regard to the work performed during the contract, shall not discriminate on the basis of race, color, national origin, sex, age, disability, religion or family status in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- (3.) Solicitations for Subcontractors, including Procurements of Materials and Equipment: In all solicitations made by the Contractor, either by competitive bidding or negotiation for work to be performed under a subcontract, including procurements of materials or leases of equipment; each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the basis of race, color, national origin, sex, age, disability, religion or family status.
- (4.) Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the *Florida Department of Transportation, the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and/or the Federal Motor Carrier Safety Administration* to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the *Florida Department of Transportation, the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and/or the Federal Motor Carrier Safety Administration* as appropriate, and shall set forth what efforts it has made to obtain the information.
- (5.) Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, the *Florida Department of Transportation* shall impose such contract sanctions as it or the *Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and/or the Federal Motor Carrier Safety Administration* may determine to be appropriate, including, but not limited to:
 - a. withholding of payments to the Contractor under the contract until the Contractor complies, and/or
 - b. cancellation, termination or suspension of the contract, in whole or in part.
- (6.) Incorporation of Provisions: The Contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the *Florida Department of Transportation, the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and/or the Federal Motor Carrier Safety Administration* may direct as a means of enforcing such provisions including sanctions for noncompliance. In the event a Contractor becomes involved in, or is threatened with, litigation with a sub-contractor or supplier as a result of such direction, the Contractor may request the *Florida Department of Transportation* to enter into such litigation to protect the interests of the *Florida Department of Transportation*, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
DISADVANTAGED BUSINESS ENTERPRISE (DBE)
UTILIZATION SUMMARY FORM

This DBE Utilization Summary form must be included with the bid submission. Item 6 provides options available to complete and submit the DBE Utilization Summary form.

1. Prime Contractor _____
2. State Project No. _____
3. Total Project Dollar Amount \$ _____
4. Grand Total Anticipated Sublet \$ _____
5. Number of DBE Utilization Forms Attached _____
6. This form must be included in the bid submission and must be completed in accordance with one of the following options:
 - a. Goal achieved with the following information completed.

DBE Subcontractors (Name Only)	\$ Amount of DBE Goal

Total Dollar Amount for DBE Goal \$ _____

DBE Percentage of Total Project _____% **NOTE:** Goal may be rounded to the nearest tenth %.

b. If 6.a. is not completed to achieve the goal, will the DBE Goal for this project be achieved? Yes _____ No _____

c. If "No" is checked attach documentation of Good Faith Efforts.

NOTE: Bids may be declared non-responsive if the DBE Utilization Summary form providing all information listed in 6 above, and all completed DBE utilization forms are not received by the Minority Programs Office.

FOR USE BY CITY OF TAMPA ONLY

Goal Achieved \$ _____%

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
DISADVANTAGED BUSINESS ENTERPRISE (DBE)
UTILIZATION FORM

Exhibit IV-3-5
Page 24 of 26
FORM 275-030-004

This DBE Utilization Summary form must be included with the bid submission. Item 6 provides options available to complete and submit the DBE Utilization Summary form.

Prime Contractor _____

State Project No. _____

DBE Subcontractor (only use DBE currently certified by FDOT)

Name of Company _____

Address: _____

Phone: _____

ITEM NO.	DESCRIPTION (note if item qualifies for SUPPLIER)

Signature/Title of DBE Representative Submitting above quote

ITEMS BELOW ARE TO BE COMPLETED BY THE PRIME CONTRACTOR

Amount to be paid to DBE Supplier (\$ _____ x .60) = \$ _____

Amount to be paid to DBE Subcontractor \$ _____

TOTAL to DBE (toward DBE goal) \$ _____

The signature of the bidder (Prime Contractor) is not required on this document, as execution of Form 375-020-08 specifically binds the bidder to the obligations arising from this document. Failure of the bidder to execute Form 375-020-08 shall result in the bid being declared non-responsive.

NOTE: All DBE Utilization Forms submitted to the Department must be completed, signed by an authorized representative of the DBE and received by the Minority Programs Office, 3717 Apalachee Parkway, Suite G, Tallahassee, FL 32311, by 5:00 P.M. on the third business day following the letting. Electronic transmittals (e.g. Faxes) sent directly to the Department will not be accepted. Bids will be declared non-responsive if all DBE Utilization forms are not received by the Minority Programs Office by 5:00 P.M. on the third business day following the letting. If a false quote is submitted the Department will consider it just cause to consider the bid non-responsive and reject the bid.

7-24 Disadvantaged Business Enterprise Program.

7-24.1 General: Prior to award of the Contract, have an approved 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 and commitment to carry out the Plan must be incorporated into and become a part of the awarded Contract. Failure to keep these commitments will be deemed noncompliance with these Specifications and a breach of the Contract. Take all necessary and reasonable steps to ensure that FDOT Certified Disadvantaged Business Enterprises, as defined in 49 CFR Part 26 and DOT Rule Chapter 14-78, have the opportunity to participate in, compete for and perform subcontracts. Do not discriminate on the basis of age, race, color, religion, national origin, sex or disability in the award and performance of DOT assisted Contracts.

7-24.2 Plan Requirements: Include the following in the DBE Affirmative Action Program Plan:

(a) A policy statement, expressing a commitment to use DBEs in all aspects of contracting to the maximum extent feasible. The policy making body must issue a policy statement signed by the chairperson, which expresses its commitment to utilize DBEs, outlines the various levels of responsibility, and states the objectives of the program. Circulate the policy statement throughout the Contractor's organization.

(b) 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.

Use techniques to facilitate DBE participation in contracting activities which include, but are not limited to:

1. 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.

2. Providing assistance to DBEs in overcoming barriers such as the inability to obtain bonding, financing, or technical assistance.

3. 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.

4. Encouraging eligible DBEs to apply for certification with the Department.

5. 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.

7-24.3 DBE Records and Reports: Submit the Anticipated DBE Participation Statement at or before the Pre-Construction Conference. Report monthly, through the Equal Opportunity

Reporting System on the Department's Website, actual payments, retainage, minority status, and work type of all subcontractors 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:

- (a) the procedures adopted to comply with these Specifications;
- (b) the number of subordinated Contracts on Department projects awarded to

DBEs;

- (c) the dollar value of the Contracts awarded to DBEs;
- (d) the percentage of the dollar value of all subordinated Contracts awarded to

DBEs as a percentage of the total Contract amount;

- (e) a description of the general categories of Contracts awarded to DBEs; and
- (f) the specific efforts employed to identify and award Contracts to DBEs.

Upon request, provide the records to the Department for review.

All such records are required to be maintained 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.

STATE OF FLORIDA

OFFICE OF THE GOVERNOR

EXECUTIVE ORDER NUMBER 11-116

(Superceding Executive Order 11-02; Verification of Employment Status)

WHEREAS, Federal law requires employers to employ only individuals eligible to work in the United States; and

WHEREAS, the U.S. Department of Homeland Security's E-Verify system allows employers to quickly verify employee eligibility in an efficient and cost-effective manner.

NOW, THEREFORE, I, RICK SCOTT, as Governor of Florida, by virtue of the authority vested in me by Article IV, Section (1)(a) of the Florida Constitution, and all other applicable laws, do hereby promulgate the following Executive Order, to take immediate effect:

Section 1. I hereby direct all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system.

Section 2. I hereby direct all agencies under the direction of the Governor to include, as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors 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 contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

Section 3. Agencies not under the direction of the Governor are encouraged to verify the employment eligibility of their new employees utilizing the E-Verify system and to include as a provision of all contracts for the provision of goods or services to the state or subdivision in excess of nominal value, a requirement that contractors and subcontractors utilize the E-Verify system to verify the employment eligibility of all new employees hired during the contract term.

Section 4. This Order supersedes Executive Order 11-02.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Florida to be affixed, at Tallahassee, this 27th day of May, 2011.



GOVERNOR



ATTEST:



SECRETARY OF STATE

2011 MAY 27 PM 5:04
DEPARTMENT OF STATE
TALLAHASSEE, FLORIDA

FILED

SECTION 02440 - UNDERGROUND SPRINKLER

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

Furnish all materials, equipment and labor as necessary for the installation of an irrigation system per the drawings and specifications. All work should meet City of Tampa standards for materials and workmanship.

Related Work:

- A. Section 02900: Trees, Plants and Groundcovers
- B. Section 02930: Sodding

1.2 DESCRIPTION OF WORK:

- A. Location of underground sprinkler system is shown on drawings.
- B. Installation of system is included in this section.

1.3 QUALITY ASSURANCE:

- A. Workmanship: All work shall be installed by skilled personnel, proficient in the trades required, in a neat, orderly and responsible manner with recognized standards of workmanship. The Contractor shall have had considerable experience and demonstrated ability in the installation of sprinkler irrigation systems of this type.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical data for all materials and installation instructions for underground sprinkler system prior to starting work on the project site.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Backflow Preventer: Top Ported – Double Check Vacuum Breaker sized to match the system and installed underground in a valve box of adequate size to ensure 2" of clearance of all valve handles.
- B. Irrigation Pipe: All main and lateral lines shall be PVC pipe ASTM D1785 1120 schedule 40. Exception would be galvanized steel pipe, when specified, and if exposed paint with 2 coats of forest green enamel.
 - 1. Pipe Size: Increased to allow expansion or nozzle size change.
 - a. No flow shall exceed 4' per second.
 - b. All laterals to heads will be 1" or larger on rotors and ¾" or larger on pop-ups, bubblers and Quick Couplers.

- c. Nozzle and zone size will be calculated to provide maximum precipitation rate to reduce watering time based on meter size.
 - d. No pipe smaller than $\frac{3}{4}$ ".
- C. Sleeving: Sleeving shall be installed for all hardscape surfaces including, but not limited to, sidewalks, courts, etc. Contractor to verify schedule 40 or HDPE. Sleeve size shall be 2 times irrigation pipe size minimum. For all sleeves containing lateral pipe and wiring, all wire to be in its own conduit.
- D. Adhesives:
 - 1. All connections, 4" and less, shall be Weld-On PC-64 purple primer and Weld-On PVC 702 clear cement.
- E. Pipe Fittings:
 - 1. ASTM D 2466 socket fittings schedule 40 shall be used for PVC pipe. Put purple primer first, cement after.
 - 2. ANSI B 16.3 galvanized malleable iron screwed fittings shall be used for all galvanized pipe.
- F. Manual Valves: Manufactured as follows: PVC Schedule 40 ball valves unless otherwise indicated.
- G. Quick Coupling Valve: Standard is Rainbird #3RC. Athletic fields with wells are Rainbird. Minimum later size $\frac{3}{4}$ ". Ensure 2" of clearance of all valve handles. (See "Quick Coupling Valve Detail" for installation.)
- H. Electric Valves: Irritrol 200B series electric valve with flow control. AC or DC depending upon power source. If DC is specified, a separate common wire for each 4 zones must be installed. Master valve to be used with more than 2 zones of if main line crosses a roadway. No pressure regulator on valves.
 - 1. For reclaimed applications use Rainbird PEB valve.
- I. Automatic Valve Wiring: 14 gauge direct burial wire, color coded as follows: red for zones; blue for master valve and black for extras. Two black extra wires to be run to the furthest valve from controller in each direction. Wire splices shall be made at a common location, contained in a valve box and spliced using greased filling King wire nuts. All wire to be brought to timer location with 6' pigtail to facilitate hook-up.
 - 1. Provide 12 gauge white common wire for any runs over 100'.
- J. Drip Irrigation:(If Applicable)
 - 1. Spacing for Dripline runs should be 12" on center, 6" off curb.
 - 2. Rainbird Dripline with approximately 1GPH emitters with 12" spacing, shall be used for Dripline irrigation. Length of run not to exceed manufacturer's recommendations. Both

ends of each segment of Dripline to be attached to schedule 40 manifold with compression insert fittings of the appropriate size.

3. Compression insert fittings are to be used for Dripline irrigation with PVC manifolds. Compression fittings required for all splices, elbows and tees for Dripline fittings. All PVC manifolds to be buried 5" to 6" with Dripline returning to surface at 45 degree angle from manifold. Driplines to be staked every 3' with 6" map pins. Additional piping that may be required shall be sized per the following chart:

2.5 inch	45 -60 GPM
2 inch	25 – 44 GPM
1.5 inch	18 – 43 GPM
1.25 inch	11 – 17 GPM
1 inch	8 – 10 GPM
.75 inch	0 – 7 GPM

4. Each Dripline zone shall have an in-line pressure regulator matched to the system with at least 35 psi and a filter with at least 200 mesh or better.
 5. $\frac{1}{2}$ " to $\frac{3}{4}$ " PVC ball valve shall be attached to each footer located in the valve box with 2" clearance for operation for operation of valve handle.
- K. Sprinkler Heads: Manufacturer's standard unit designed to provide uniform coverage over entire area of spray shown on drawings at available water pressure and installed using K-flex pipe and schedule 40 PVC connectors as follows:
1. Rainbird Bubbler: #1401/1402 – 0.25/0.50 GPM on K-Flex pipe (2 per tree).
 2. Rainbird Pop-up: 1800 series with nozzle to match application (No PRS).
 3. Hunter rotor: Hunter I-20 or I-25 (athletic fields) with nozzle to match application.
 4. Micro (Maxi-Jet): to be matched to job and used only with Parks and Recreation Department approval.
- L. Valve Box: Provide plastic valve box with cover, size as needed, or as specified on drawings. Place level on brick or stone blacks. Provide 2" minimum 57 stone below exposed PVC pipes. Top of valve installed flushed with finished grade.
- M. Computerized Irrigation Controller: Computerized irrigation controller and cabinet shall be supplied and installed by the City of Tampa. Coordination of installation of the controller is required by the contractor.
- N. Computerized Irrigation Equipment: The following is part of the computerized system and is the responsibility of the awarded contractor.
1. Computerized systems shall utilize a flow meter by Master Meter Inc. matched to the water meter size, with a 1 or 1 gallon pulse depending on zone GPM.
 2. Wiring from flow meter to controller must be 14-2 Maxi-com cable. No splices should be made in the Maxi-com cable. Maxi-com to be run under main line or in conduit.

3. Power source at timer should be A/C. D/C (requires special wiring) used only if all sources of A/C have been exhausted.

WM	DCVB	FM	MV	ZV
water meter	double check vacuum breaker	flow meter	master valve	zone valve

O. Water Source (As indicated on the Construction drawings):

1. Reclaimed Water: If available, reclaimed water must be used for irrigation. Any system that is to be connected to reclaimed water or is indicated to have reclaimed in the near future shall have all materials of the appropriate color to indicate the use of reclaimed water.
2. Wells: (If Applicable) Wells will require the following materials:
 - a. 5" well casing
 - b. Open hole
 - c. 5HP or 7.5HP Submersible pump
 - d. Drop pipe (Galv. SCH 40)
 - e. Junction box
 - f. Submersible cable
 - g. Galvanized tee
 - h. Well seal
 - i. 2" dielectric nipple
 - j. Galvanized union
 - k. CLA-VAL #55F pressure relieve valve (3/4")
 - l. Pump station control panel by I.T.S. irrigation technical service (866-521-3320)
 - m. Cycle stop model CSV-3B-2"
 - n. Galvanized pipe
 - o. Galvanized elbow
 - p. PVC adapter
 - q. Irrigation mainline
 - r. 2" Amiad T Super STST 100 mesh filter (optional)

- s. 290 PSI pressure gauge (liquid filler)
- t. Gate valve
- u. Well-X-trol WG-250-UG pressure tank
- v. Double check vacuum breaker or pressure vacuum breaker
- w. Low pressure 10/20 reversing pressure switch sod 90133GSG2R
- x. Operating pressure 29/660 pressure switch SQD 9013GSGJ21
- y. Pipe supports (2) required for large pipe and (1) for 2" pipe
- z. Galvanized nipple
- aa. Schedule 80 PVC union
- bb. 10" round valve box (for tank access)
- cc 1 ¼" brass ball valve

- 3. Potable Water: New water meters shall be requested and paid for by the contractor.

PART 3 – EXECUTION

3.1 SYSTEM DESIGN:

- A. System design shall take into account existing physical and cultural features and all proposed site improvements to avoid conflicts and ensure an efficient optimal system.
- B. Design Pressures: Verify available water source and pressure prior to beginning construction.
- C. Location of Heads: Locate head in accordance with accepted sprinkler practice to provide 100% head to head coverage. Make minor adjustments as necessary to avoid structures and other obstructions.
- D. Minimum Water Coverage:
 - Turf areas, 100%
 - Other planting areas, 100%
 - Athletic fields, 100%

Layout may be modified, if necessary to obtain coverage, and to suit manufacturer's standard heads. Do not decrease number of heads indicated unless otherwise acceptable to Engineer and/or Architect. Any proposed decrease must be approved by the City of Tampa.

- E. Group valves close to water source in 1 or 2 locations. Planting beds, trees and turf areas shall be on separate zones.
- F. Minimize wiring runs. Maximize use of lateral lines. Keep valves 5' from closest hardscape.
- G. No flow shall exceed 4 feet per second.

- H. Top of pipe to grade shall be:
 - 1. Manifolds: 6"
 - 2. Laterals: 12"
 - 3. Mainlines: 18"
- I. Irrigation zones to have matched precipitation rates.
- J. Do not use pressure-regulating sprinklers.
- K. Insert sprinklers 3 inches from curbs, hardscapes and structures to allow for edging.
- L. Computerized irrigation system controller has been installed by the City of Tampa. Verify controller location prior to installation of irrigation system and related electrical wiring.
- M. No pipe smaller than ¾"
- N. Quick Coupler Valve (Rainbird #3RC or 44RC for athletic field applications) shall be located in a valve box (to grade). Provide 3" of galvanized main line up to and after a galvanized T. Provide 2' of vertical galvanized pipe, capped at bottom. Mount QC valve on galvanized nipple, length as required. Quick Coupler to be on a separate main line (See Quick Coupler valve detail).
- O. Coordinate and confirm exact water source and electric source.

3.2 ELECTRIC AND WATER SERVICE:

- A. Water Service: When directed on the Construction drawings or general provisions, the contractor shall include in the bid price all costs associated with providing water service to system as required. This includes all applications and fees required by City of Tampa Water Department to provide service, connection fees and all materials and labor for a complete functioning system. Contractor shall be responsible for applying and paying for any new water meters as required. Coordinate this requirement with the contract documents.
- B. Electric Service: Contractor shall include in bid price all costs associated with providing power service to system as indicated in the general provisions of the contract. This includes all applications, drawings and fees required by Tampa Electric Company (TECO) and the City of Tampa. All work to comply with City of Tampa codes and TECO standards for power connection. All costs associated with power installation and connection shall be the responsibility of the contractor.
- C. Upon final acceptance of irrigation system, ownership of water and electric meters will be transferred to the City of Tampa.

3.3 TRENCHING AND BACKFILLING:

- A. General: Protect existing utilities, paving, plants, trees and other facilities caused by irrigation operations. Contractor shall be responsible for the repair of any damage to existing utilities and paving. Excavate straight and true with bottom uniformly sloped to low point.

- B. Sunshine: Contactor shall be responsible for notifying underground utilities 48 hours prior to beginning work (800) 432-4770. No site work shall commence until all underground utilities have been properly located and identified.
- C. Backfill: Backfill with clean material from excavation. Remove organic material as well as rocks and debris larger than 1" diameter. Place acceptable backfill material in 6" lifts, compacting each lift.
- D. Existing Lawns: Where trenching is required across existing lawns, trench no wider than necessary to accommodate pipes.
 - 1. Backfill trench to within 6" of finished grade. Continue fill with acceptable topsoil and compact to bring area to the elevation of existing lawn.
 - 2. If trench is more than 6" in width, relay or plant new sod within 7 days after removal, roll and water generously.
 - 3. Restore to original condition any sod areas not in healthy condition equal to adjoining lawns 30 days after planting.
- E. Existing Trees: All efforts shall be made to avoid trenching under the driplines of existing trees and canopy spread of proposed trees. All proposed trenching or other work under the limb spread of any and all trees shall be done by hand so that no limbs or branches or roots are damaged in any way.
 - 1. Trenching shall comply with Chapter 13-146, Technical Manual and shall be done to minimize root disturbance. City of Tampa representative shall be present prior to beginning work, to determine limits of root pruning and shall approve any work taking place within protective radius of trees. All tree roots shall be severed cleanly per the Chapter 13 of the City Code.
 - 2. Protective radius schedule per Chapter 13 of the City Code reads as follows:
 - 1" caliper – no trenching within 4' of tree trunk
 - 6" – 14" caliper – no trenching within 6' of tree trunk
 - 15" – 34" caliper – no trenching within 15' of tree trunk
 - 34" and greater – no trenching within 20' unless approved by Parks and Recreation representative
- F. Pavements:
 - 1. Boring is the preferred method. Open cuts must be approved by City of Tampa representative. Where existing pavements must be crossed to install landscape irrigation system, saw cut straight clean lines 6" wider than trench.
 - 2. Excavate trench to required depth and width.
 - 3. Remove cut out pavement and excavated material from the site.

4. Backfill with dry sand fill material, placing in 6" lifts to meet City of Tampa compaction requirements.
5. Repair or replace pavement cuts with equivalent materials and finishes.
6. If a concrete sidewalk is cut or damaged, the full section must be replaced.
7. Piping under hardscape that is 5' wider or greater shall be sleeved.
8. Contractor is responsible for daily cleanup of operations to include debris, directional bore slurry and any hydraulic fluids.

3.4 INSTALLATION: (See details on construction drawings)

- A. A pre-construction meeting will occur on site prior to commencement of work.
- B. General: Contractor shall be responsible for filing and obtaining any and all agency permits as described. All work must conform to City of Tampa and the latest adopted plumbing code. Any work taking place along a city, county or state road or median must comply with appropriate regulating authority guidelines for Traffic Control for Construction and Maintenance Operations.
- C. Required Inspections:
 1. Piping: prior to covering.
 2. All materials prior to planting and/or mulching.
 3. 24 hour notice of inspection required.
 4. Main lines require pressure tests of 50 PSI to be maintained for minimum of 1 hour.
- D. Backflow Preventer: Top ported DCVB installed underground in a rectangular valve box with 6" gravel sump. Box of adequate size for easy testing access.
- E. Control Valves: Install in valve box. Arrange in box for easy adjustment and removal.
 1. Adjust size of automatic control valves to provide flow rate of rated operating pressure required for each sprinkler zone.
 2. All zone wiring and Maxi-com cable to be installed under the main line or in conduit. Wiring that shares a sleeve with irrigation water lines shall be contained in its own conduit.
- F. Provide 18" of straight uninterrupted PVC pipe in front of the master Meter and 12" of straight behind.
- G. Piping: Lay pipe on solid sub-base uniformly sloped.
 1. Install PVC pipe in dry weather when temperature is above 40 degrees F in strict accordance with manufacturer's instructions. Allow joints to cure at least 24 hours at temperatures above 40 degrees F (4 degrees C) before testing, unless otherwise recommended by manufacturer. All PVC connections will be cleaned with purple primer prior to cementing.

- a. Mainline depth shall be 18"
 - b. Lateral line depth shall be 12"
- H. Sprinkler Heads: Flush circuit lines with full pressure and install nozzles after hydrostatic test is completed.
 - 1. Install all heads at manufacturer's recommended heights.
 - 2. Locate part-circle heads to maintain a minimum distance of 3" from curbs, hardscape and structures.
 - 3. After completion of grading, seeding or sodding, and rolling of the grass areas, carefully adjust lawn sprinkler heads so they will be flush with grade.
 - 4. Pop-ups installed on ½" flex hose using schedule 40 PVC connectors.
 - 5. Rotors to be installed on appropriate size flex hose using schedule 40 PVC connectors.
 - 6. Ensure sprayer rotor water does not directly contact existing structures or hardscape areas.
- I. Low Volume: If Applicable (See details on construction drawings)
 - 1. Dripline should be on surface and pinned every 3' using staples at least 6" in length.
 - 2. Headers and footer manifolds shall use compression adapters and be buried under 5" to 6" of soil.
 - 3. Flush completed before installing flush valve.
 - 4. Use compression fittings on all Dripline connections.
 - 5. Flush caps are to be installed in a 6" valve box. Box shall have a 6" diameter by 36" deep sump filled with gravel. Not required if using "LD" Rainbird.
 - 6. Inline pressure regulator and filter to be installed in plastic box for easy access and maintenance.
 - 7. Dripline should be routed around tree rings, boxes, inlets, utilities, etc.,
- J. Dielectric Protection: Use dielectric fittings at connection where pipes of dissimilar metal are joined.
- K. Wiring: All wiring shall be performed by the contractor as shown on drawings. All wiring shall be run from point of connection back to the controller, Provide 6' pig tail.
- L. Quick Coupler Valves: Build and install per details on construction drawings. Valve box shall be adequately sized and installed so as not to interfere with the operation of the quick coupler key.
- M. Wells: Athletic fields will require 5" well (see Materials, 2.1.O.2 Wells)

3.5 ACCEPTANCE:

- A. Maintenance: Contractor is responsible for all maintenance of the system until final acceptance by City of Tampa Parks and Recreation representative and for the maintenance period specified in section Trees, Plants and Ground Covers.
- B. Final Inspection: The inspection of irrigated areas will be made by the City of Tampa representative upon contractor's request. Provide notification at least 2 working days prior. The City of Tampa representative will provide a punch list of those items which must be corrected before re-inspection for final acceptance. The City of Tampa representative will set an appropriate time period in which the punch list items must be corrected.
 - 1. Contractor to provide notification of at least 2 working days prior to inspection.
 - 2. System to be run through electronically of all zones to ensure all components are working properly.
 - 3. System to be run through City programming for one week prior to final acceptance.
- C. As Built drawings: At project closeout, the Contractor shall submit complete electronic drawings showing any changes from approved shop drawing. These shall be included as part of required As-Built/Record Drawings requirement of the general provision.
 - 1. As-built drawings shall include the following:
 - o Irrigation system as installed.
 - o Water source location and size.
 - o Power source location.
 - o Changes to controller type of location.
 - o Changes in type or location of flow meter or master valve.
 - o Any wiring changes in location, number, type, color.
 - o Valve locations should be dimensioned and areas controlled identified.
 - o Manifold locations, depth and whether it is a header or footer.
 - o Direction of Dripline and spacing.
 - o Location, depth and size of mainline and feeder lines. Off-set to main line requested.
 - o Location of maxi-com cable.
 - o Location and depth of all directional bores.

3.6 GUARANTEE:

- A. Guarantee: All work shall be guaranteed by contractor for one year from date of final acceptance against all defects and malfunctions in materials, equipment and workmanship and shall be included as a part of the project closeout document requirements.
 - 1. The guarantee shall also cover repair of damage to any part of the premises resulting from leaks or other defects in materials, equipment and workmanship, to the satisfaction of the City of Tampa. Repairs, if required, shall be done promptly at no cost to the City of Tampa. The contractor shall not be responsible for damage to the irrigation system by others. The guarantee shall state the name of the owner, provide full guarantee terms, effective and termination date, name and license number. It shall be signed by the chief executive of the contracting firm and notarized. Manufacturer's warranties shall not relieve the contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

2. The contractor shall make necessary repairs within 72 hours' notice. If the contractor neglects to make or undertake the repairs with the due diligence, the City of Tampa may make such repairs at the contractor's expense. In the case of an emergency where in the judgment of the City of Tampa, delay would cause loss or damage, repairs or replacement may be made without notice being sent to the contractor and the contractor shall pay the cost thereof.

END OF SECTION 02440

SECTION 02460 – HELICAL PULLDOWN™ MICROPILE FOUNDATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The purpose of this specification is to detail the furnishing of all designs, materials, tools, equipment, labor supervision, and installation techniques necessary to install Helical Pulldown™ Micropiles (HPM) as detailed on the drawings, including connection details. This shall include provisions for load testing that are part of the scope of work.

1.2 SCOPE OF WORK

- A. This Work consists of furnishing all necessary engineering and design services, supervision, labor, tools, materials, and equipment to perform all work necessary to install the screw piles per the specifications described herein, and as shown on the Drawings. The Contractor shall install an HPM that will develop the load capacities as detailed on the Drawings.

1.3 QUALIFICATIONS OF THE HPM CONTRACTOR

- A. The HPM Contractor shall be experienced in the installation of HPM foundations and shall furnish all materials, labor, and supervision to perform the work. The Contractor shall provide names of on-site personnel materially involved with the work, including those who carry documented certification of screw pile training. At a minimum, these personnel shall include foreman, machine operator, and project engineer/manager.
- B. The HPM Contractor shall not sublet the whole or any part of the contract without the express written permission of the City.

1.4 DEFINITIONS

Alignment Load (AL):	A nominal load applied to a ground anchor during testing to keep the testing equipment correctly positioned and remove any slack in the reaction system. Alignment load is typically 10%-15% DL.
Design Load (DL):	Maximum anticipated service load applied to the screw anchor. Also known as the working load (WL).
Elastic Movement:	The recoverable movement measured during a ground anchor test resulting from the elastic elongation of the tieback material or soils.
Helical Extension:	Screw pile component installed immediately following the lead section, if required. This component consists of one or more helix plates welded to a central steel shaft of finite length.
Helical Pulldown™ Micropile:	A small diameter, soil displacement, cast-in-place screw pile. Load transfer to soil is both end bearing and friction. United States Patent 5,707,180, Method and Apparatus for Forming Piles In-Situ. Also known as HPM.
Helix Plate:	Generally round steel plate formed into a ramped spiral. The helical shape provides the means to install the helical tieback anchor, plus the plate transfers

load to soil in end-bearing. Helix plates are available in various diameters and thicknesses.

Lead Section:	The first screw pile component installed into the soil, consisting of single or multiple helix plates welded to a central steel shaft. Helix plates provide end-bearing capacity.
Plain Extension:	Central steel shaft of finite length without helix plates. It is installed following the installation of the lead section or helical extension (if used). The units are connected with integral couplings and bolts. Plain extensions are used to extend the helix plates beyond the specified minimum depth and into competent load bearing stratum.
Safety Factor:	The ratio of the ultimate capacity to the working or design load of the screw pile.
Torque Strength Rating:	The maximum torque energy that can be applied to the helical tieback anchor during installation in soil, also known as allowable or safe torque.
Working Load (WL):	Equivalent term for Design Load.
Ultimate Capacity (UC):	Limit state based on the structural and/or geotechnical capacity of the ground anchor defined as the point at which no additional capacity can be justified.

1.5 ALLOWABLE TOLERANCES

- A. Centerline of screw pile shall not be more than 3 inches from indicated plan location.
- B. Screw pile plumbness shall be within 2° of design alignment.
- C. Top elevation of screw pile shall be within +1 inch to -2 inches of the design vertical elevation.

1.6 QUALITY ASSURANCE

- A. The Contractor shall employ an adequate number of skilled workers who are experienced in the necessary crafts and who are familiar with the specified requirements and methods needed for proper performance of the work of this specification.
- B. All HPMs shall be installed in the presence of a designated representative of the City unless said representative informs the Contractor otherwise. The designated representative shall have the right to access any and all field installation records and test reports.
- C. HPM components as specified in the drawings and herein shall be manufactured by a facility whose quality systems comply with ISO (International Organization of Standards) 9001 requirements. Certificates of Registration denoting ISO Standards Number shall be presented upon request to the City or their representative.

1.7 GROUND CONDITIONS

- A. The Geotechnical Report, including logs of soil borings as shown on the boring location plan, shall be considered to be representative of the in-situ subsurface conditions likely to be encountered on the project site. Said Geotechnical Report shall be used as the basis for HPM foundation design using generally accepted engineering judgment and methods.

- B. The Contractor should anticipate that difficult installation of HPMs may be encountered due to nearby existing structures, soil conditions, or buried debris. If during HPM installation, subsurface conditions of a type and location are encountered of a frequency that were not reported, inferred and/or expected at the time of preparation of the bid, the additional costs required to overcome such conditions shall be considered as extras for which the Contractor shall be paid.

1.8 REFERENCED CODES AND STANDARDS

- A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation. In case of conflict, the particular requirements of this specification shall prevail. The latest publication as of the issue of this specification shall govern, unless indicated otherwise.

1. American Society for Testing and Materials (ASTM):

ASTM A29/A29M	Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.
ASTM A36/A36M	Structural Steel.
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
ASTM A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware.
ASTM A252	Welded and Seamless Steel Pipe Piles.
ASTM A775	Electrostatic Epoxy Coating
ASTM A193/A193M	Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.
ASTM A320/A320M	Alloy-Steel Bolting Materials for Low Temperature Service.
ASTM A500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
ASTM A572	HSLA Columbium-Vanadium Steels of Structural Quality.
ASTM A618	Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
ASTM A656	Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability.
ASTM A1018	Steel, Sheet and Strip, Heavy Thickness Coils, Hot Rolled, Carbon, Structural, High-Strength Low-Alloy, Columbium or Vanadium, and High-Strength Low-Alloy with Improved Formability.

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| ASTM D1143 | Method of Testing Piles Under Static Axial Compressive Load. |
| ASTM D3689 | Method of Testing Individual Piles Under Static Axial Tensile Load. |
2. American Welding Society (AWS):

AWS D1.1	Structural Welding Code – Steel.
AWS D1.2	Structural Welding Code – Reinforcing Steel.
 3. American Society of Civil Engineers (ASCE):

ASCE 20-96	Standard Guidelines for the Design and Installation of Pile Foundations.
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 4. Deep Foundations Institute (DFI):

Guide to Drafting a Specification for High Capacity Drilled and Grouted Micropiles for Structural Support, 1st Edition, Copyright 2001 by the Deep Foundation Institute (DFI).
 5. Post Tensioning Institute (PTI):

Recommendations for Prestressed Rock and Soil Anchors, Third Edition, Copyright 1996 By the Post-Tensioning Institute.
 6. Society of Automotive Engineers (SAE):

SAE J429	Mechanical and Material Requirements for Externally Threaded Fasteners.
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1.9 SUBMITTALS

A. Construction Submittals:

1. At least 14 calendar days prior to the planned start of construction, the Contractor shall submit a detailed description of the construction procedures proposed for use to the City for review. This shall include a list of major equipment to be used.
2. The technical submittal shall include the following:
 - a. HPM number, location and pattern by assigned identification number if not indicated on plans
 - b. Load required of each HPM
 - c. Type and size of central steel shaft
 - d. Helix configuration (number and diameter of helix plates proposed)

- e. Minimum effective installation torque
 - f. Minimum depth
 - g. Grout column diameter
 - h. Grout mix design and type of materials to be used in the grout
 - i. Means for mixing and placing grout
 - j. Methods and equipment for accurately monitoring and recording the grout volume as it is being placed
 - k. HPM attachment to pile cap
 - l. The proposed HPM load testing equipment and procedure as described in 3.06 herein.
- 3. The Contractor shall submit shop drawings for all HPM components, including corrosion protection and pile top attachment to the City for review and approval. This includes screw pile lead and extension section identification (manufacturer's catalog numbers).
 - 4. The Contractor shall submit a copy of the proposed Installation Record form to be used during construction that will provide the information as described in Section B., below.
 - 5. Work shall not begin until all the submittals have been received and approved by the City.

B. Installation Records:

- 1. The Contractor shall provide the City copies of HPM installation records within 24 hours after each installation is completed. Formal copies shall be submitted on a weekly basis. These installation records shall include, but are not limited to, the following information.
 - a. Name of project and Contractor
 - b. Name of Contractor's supervisor during installation
 - c. Date and time of installation
 - d. Name and model of installation equipment
 - e. Type of torque indicator used
 - f. Location of HPM by assigned identification number
 - g. Actual central steel shaft type and configuration – including lead section (number and size of helix plates), number and type of extension sections
 - h. HPM installation duration and observations
 - i. Total length of installed HPM

- j. Cut-off elevation
 - k. Inclination
 - l. Installation torque at one-foot intervals for the entire length
 - m. Grout quantities pulled-down on a per section basis
 - n. Actual grout column diameter and length
 - o. Comments pertaining to interruptions, obstructions, rate of advancement or other relevant information
- 2. The Contractor shall submit shop drawings for all HPM components, including corrosion protection and pile top attachment to the City for review and approval. This includes screw pile lead and extension section identification (manufacturer's catalog numbers).
 - 3. Work shall not begin until all the submittals have been received and approved by the City.

C. Test Reports:

- 1. The Contractor shall provide the City copies of field test reports within 24 hours after completion of the load tests. Formal copies shall be submitted within 5 days after completing the load test. These test reports shall include, but are not limited to, the following information.
 - a. Name of project and Contractor
 - b. Name of Contractor's supervisor during installation
 - c. Name of third party test agency, if used
 - d. Date, time, and duration of test
 - e. Location of HPM by assigned identification number
 - f. Type of test (i.e. tension or compression)
 - g. Description of calibrated testing equipment and test set-up
 - h. Actual helical pile type and configuration – including lead section, number and type of extension sections
 - i. Steps and duration of each load increment
 - j. Cumulative pile-head movement at each load step
 - k. Comments pertaining to test procedure, equipment adjustments, or other relevant information
 - l. Signed by third party test agency representative or registered professional engineer

PART 2 – PRODUCTS

2.1 MATERIALS

A. Central Steel Shaft

1. The central steel shaft, consisting of lead sections, helical extensions, and plain extensions, shall be Solid Square Shaft, Type SS175 as manufactured by A.B. Chance or approved equal.
 - a. *Solid Square Shaft Material (1.75"x1.75")*: Shall be hot rolled Round-Cornered-Square (RCS) solid steel bars meeting the dimensional and workmanship requirements of ASTM A29. The bar shall be High Strength Low Alloy (HSLA), low to medium carbon steel grade with improved strength due to fine grain size.
 - 1) Torsional strength rating: = 11,000 ft-lb
 - 2) Minimum yield strength = 90 ksi

B. Helix Bearing Plate:

1. Helix plates material shall be hot rolled carbon steel sheet, strip, or plate formed on matching metal dies to true helical shape and uniform pitch. Bearing plate material shall conform to the following ASTM specifications.
 - a. *Solid Square Shaft Material (Torque $\geq 5,500$ ft-lb)*: Hot rolled steel sheet, strip or plate per ASTM A656 or A936 with minimum yield strength of 80 ksi. Plate thickness is 3/8" or 1/2".

C. Bolts:

1. The size and type of bolts used to connect the central steel shaft sections together shall conform to the following ASTM specifications.
 - a. *Solid Square Shaft Material (Torque $\geq 7,000$ ft-lb)*: 7/8" – 1-1/4" per ASTM A193 Grade B7.

D. Couplings:

1. Couplings shall be capable of transmitting both the maximum installation torque from the tool string to the helix plates, and the maximum axial load from the top of the pile to the helical bearing plates.

E. Plates, Shapes, or Pile Caps:

1. Structural steel plates and shapes for screw pile top attachments shall conform to ASTM A36 or ASTM A572 Grade 50.

F. Water:

1. Water for mixing grout shall be potable, clean and free from impurities, which may be detrimental to grout or steel. Potable water shall be available in quantities sufficient to mix grout and for equipment clean-up.

G. Grout:

1. Cement for HPM grout shall be Portland cement conforming to ASTM C150 Type I or Type II. Pre-packaged, non-shrink cement grouts shall be subject to the review and acceptance by the City, and shall conform to the requirements of ASTM C1107. The Contractor shall use a stable neat cement grout with a minimum 28-day unconfined compressive strength of 4,000 psi. Admixtures, if used, shall be mixed in accordance with manufacturer's recommendations. The grouting equipment used shall produce a grout free of lumps and undispersed cement.
2. The Contractor shall provide a qualified professional soils/materials testing firm, approved by the Engineer, to perform grout testing as described herein. Grout samples shall be taken directly from the discharge of the mixer delivering grout.
3. HPM grout shall be tested for compressive strength in accordance with AASHTO T106/ASTM C109 at a frequency of no less than one set of three, 2-inch grout cubes from each grout plant each day of operation or per every 10 piles, whichever occurs more frequently. The compressive strength shall be the average of the 3 cubes tested.
4. Grout within the HPM verification and proof test piles shall attain the minimum required 3-day compressive strength of 2,000 psi prior to load testing.

H. Admixtures

1. Chemical admixtures for grout shall conform to the requirements of ASTM C494. Chemical admixtures which control bleed water, improve consistency, reduce water/cement ratio, and retard set may be used in the grout subject to the review and acceptance by the City. Expansive admixtures can be used to fill confined areas of the central steel shaft coupling joints, or to compensate for drying shrinkage. Accelerators shall not be permitted. Chemical admixtures, if used, shall be compatible with the central steel shaft and mixed in accordance with the grout manufacturer's recommendations.
2. Mineral admixtures for grout shall conform to the requirements of ASTM C618 (coal fly ash) or C1240 (silica fume). Mineral admixtures, which provide thixotropic consistency, reduce porosity, increase compressive strength, and resist segregation may be used in the grout subject to the review and acceptance by the City. Mineral admixtures, if used, shall be compatible with the central steel shaft and mixed in accordance with the grout manufacturer's recommendations.

I. Aggregate

1. Sand fillers shall not be used in the grout mix.

J. Corrosion Protection

1. Galvanization: All screw pile material shall be hot-dipped galvanized in accordance with ASTM A153 after fabrication.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

- A. Prior to commencing HPM installation, the Contractor shall inspect the work of all other trades and verify that all said work is completed to the point where screw pile installation may commence without restriction.
- B. The Contractor shall verify that all HPMs may be installed in accordance with all pertinent codes and regulations regarding such items as underground obstructions, right-of-way limitations, utilities, etc.
- C. In the event of a discrepancy, the Contractor shall notify the City. The Contractor shall not proceed with screw pile installation in areas of discrepancies until said discrepancies have been resolved.

3.2 INSTALLATION EQUIPMENT

- A. Shall be rotary type, hydraulic power driven torque motor with clockwise and counter-clockwise rotation capabilities. The torque motor shall be capable of continuous adjustment to revolutions per minute (RPM's) during installation. Percussion drilling equipment shall not be permitted. The torque motor shall have torque capacity 15% greater than the torsional strength rating of the central steel shaft to be installed.
- B. Equipment shall be capable of applying adequate down pressure (crowd) and torque simultaneously to suit project soil conditions and load requirements. The equipment shall be capable of continuous position adjustment and swing capacity at maximum installation torque to maintain proper screw pile alignment during installation. The application of bending stress to the pile during installation will not be permitted.

3.3 INSTALLATION TOOLING

- A. Shall consist of a Kelly Bar Adapter (KBA) and drive tool as appropriate for the central shaft of the screw pile under maximum installation torque and used in accordance with the manufacturers written installation instructions.
- B. Installation tooling should be maintained in good working order and safe to operate at all times. Flange bolts and nuts should be regularly inspected for proper tightening torque. Bolts, connecting pins, and retainers should be periodically inspected for wear and/or damage and replaced with identical items provided by the manufacturer. Heed all warning labels. Worn or damaged tooling should be replaced.
- C. A torque indicator shall be used during screw pile installation. The torque indicator shall be a device that directly measures torque and that is mounted in-line with the installation tooling. Devices that infer torque from hydraulic pressure will not be permitted.
 - 1. The device shall be capable of providing continuous measurement of applied torque throughout the installation.
 - 2. The device shall be capable of torque measurements in increments of 200 ft-lb or less.

3. The device shall be re-calibrated, if in the opinion of the City and/or Contractor reasonable doubt exists as to the accuracy of the torque measurements.

3.4 INSTALLATION PROCEDURES

A. Central Steel Shaft:

1. The screw pile installation technique shall be such that it is consistent with the geotechnical, logistical, environmental, and load carrying conditions of the project.
2. The lead section shall be positioned at the location as shown on the working drawings. The screw pile sections shall be engaged and advanced into the soil in a smooth, continuous manner at a rate of rotation of not to exceed 16 RPM's. The extension sections shall be provided to obtain the required minimum overall length and installation torque as shown on the working drawings. Connect sections together using coupling bolt(s) and nut torqued to 40 ft-lb.
3. Sufficient down pressure shall be applied to uniformly advance the screw pile sections approximately 3 inches per revolution. The rate of rotation and magnitude of down pressure shall be adjusted for different soil conditions and depths.
4. A lead displacement plate (LDP) of appropriate diameter shall be positioned on the central steel shaft at the location necessary to install the grout column as shown on the working drawings. The LDP shall not be located closer than 12 inches above the top helical plate. Additional LDP's or extension displacement plates (EDP) shall be positioned on the central steel shaft at regular intervals – typically at every coupling joint. Displacement plates shall not be spaced more than 7-ft. apart. Displacement plates shall permit the free flow of grout without misalignment of the central steel shaft.

B. Grout:

1. Grout shall be mixed with equipment capable of providing a steady supply at the required level of production. When using a pre-packaged grout, the recommended water-cement ratios listed in the mixing instructions on the package shall be followed.
2. The grout shall be placed via a gravity fed reservoir located at the surface. The reservoir shall consist of a temporary casing or form, which is capable of containing liquid grout. The reservoir shall be appropriately sized (diameter and length) to accommodate the soil conditions and grout column diameter. The grout shall be placed in the reservoir immediately prior to the advancement of the first LDP into the soil. The volume of grout contained in the reservoir shall be maintained at a level sufficient to maintain positive hydrostatic pressure on the grout column.
3. Grout placement shall continue until the minimum installation torque has been achieved as shown on the working drawings. Volume measurements shall be taken throughout the installation in order to determine the actual grout column diameter.
4. Grout shall be allowed to attain the minimum design strength prior to being loaded.

3.5 TERMINATION CRITERIA

- A. The torque as measured during the installation shall not exceed the torsional strength rating of the central steel shaft.
- B. The minimum installation torque as shown on the technical submittal shall be satisfied prior to terminating the screw pile foundation installation.
- C. If the torsional strength rating of the central steel shaft and has been reached prior to achieving the minimum overall length required, the Contractor shall have the following options:
 - 1. Terminate the installation at the depth obtained subject to the review and acceptance by the City.
 - 2. Remove the existing screw pile and install a new one with fewer and/or smaller diameter helix plates. The new helix configuration shall be subject to review and acceptance of the City.
- D. If the minimum installation torque as shown on the working drawings is not achieved at the minimum overall length, and there is no maximum length constraint, the Contractor shall have the following options:
 - 1. Install the screw pile deeper using additional extension sections.
 - 2. Remove the existing screw pile and install a new one with additional and/or larger diameter helix plates.
- E. If the screw pile is refused or deflected by a subsurface obstruction, the installation shall be terminated and the pile removed. The obstruction shall be removed, if feasible, and the screw pile re-installed. If the obstruction can't be removed, the screw pile shall be installed at an adjacent location, subject to review and acceptance by the City.
- F. If the torsional strength rating of the central steel shaft has been reached prior to proper positioning of the last plain extension section relative to the final elevation, the Contractor may remove the last plain extension and replace it with a shorter length extension. If it is not feasible to remove the last plain extension, the Contractor may cut said extension shaft to the correct elevation. The Contractor shall not reverse (back-out) the screw pile to facilitate extension removal.
- G. The average torque for the last three feet of penetration shall be used as the basis of comparison with the minimum installation torque as shown on the working drawings. The average torque shall be defined as the average of the last three readings recorded at one-foot intervals.

3.6 LOAD TESTS

- A. Pre-Production Pile Tests:
 - 1. Load tests shall be performed to verify the suitability and capacity of the proposed HPMs and the proposed installation procedures prior to installation of production piles. Two sacrificial test piles with reaction anchors shall be constructed immediately prior to the start of work on the production HPMs. One test pile will be located in the area of the Laurel Street bridge piles and one test pile will be located in the area of the I-275 bridge piles. Each pile shall be loaded in compression to a maximum of 2.0 times the design compressive load. An additional purpose of pre-production tests is to empirically verify

the ultimate capacity to the average installing torque of the screw pier foundation for the project site.

2. Pre-production pile installation methods, procedures, equipment, and overall length shall be identical to the production piles to the extent practical except where approved otherwise by the City.
3. The Contractor shall submit for review and acceptance the proposed HPM load testing procedure. The pre-production test proposal shall be in general conformance with ASTM D1143 except as modified herein, and shall provide the minimum following information:
 - a. Type and accuracy of load equipment
 - b. Type and accuracy of load measuring equipment
 - c. Type and accuracy of pile-head deflection equipment
 - d. General description of load reaction system, including description of reaction anchors
 - e. Calibration report for complete load equipment, including hydraulic jack, pump, pressure gauge, hoses, and fittings.
4. If the pre-production test fails to meet the design requirements, the Contractor shall modify the HPM design and/or installation methods and retest the modified pile, as directed by the City.

B. Load Test Equipment:

1. The load test equipment shall be capable of increasing or decreasing the applied load incrementally. The incremental control shall allow for small adjustments, which may be necessary to maintain the applied load for a sustained, hold period.
2. The reaction system shall be designed so as to have sufficient strength and capacity to distribute the test loads to the ground. It should also be designed to minimize its movement under load and to prevent applying an eccentric load to the pile head. The direction of the applied load shall be collinear with the helical pile at all times.
3. Dial gauges shall be used to measure helical pile movement. The dial gauge shall have an accuracy of at least ± 0.001 " and a minimum travel sufficient to measure all helical pile movements without requiring resetting the gauge. The dial gauge shall be positioned so its stem is parallel with the axis of the helical pile. The stem may rest on a smooth plate located at the pile head. Said plate shall be positioned perpendicular to the axis of the helical pile. The dial gauge shall be supported by a reference apparatus to provide an independent fixed reference point. Said reference apparatus shall be independent of the reaction system and shall not be affected by any movement of the reaction system.
4. The load test equipment shall be recalibrated, if in the opinion of the City and/or Contractor reasonable doubt exists as to the accuracy of the load or deflection measurements.

C. Load Test Procedures

1. The hydraulic jack shall be positioned at the beginning of the test such that the unloading and repositioning of the jack during the test shall not be required. The jack shall also be positioned coaxially with respect to the pile head so as to minimize eccentric loading. The hydraulic jack shall be capable of applying a load not less than two times the proposed design load (DL).
2. An alignment load (AL) shall be applied to the HPM prior to setting the deflection measuring equipment to zero or a reference position. The AL shall be no more than 10% of the design load (i.e., 0.1 DL). After the AL is applied, the test set-up shall be inspected carefully to ensure it is safe to proceed.
3. Axial pile load tests shall be conducted by loading the HPM in step-wise fashion as shown in Table 3. Pile-head deflection shall be recorded at the beginning of each step and after the end of the hold time. The beginning of the hold time shall be defined as the moment when the load equipment achieves the required load step.
4. Test loads shall be applied until continuous jacking is required to maintain the load step or until the test load increment equals 200% of the design load (DL) (i.e., 2.0 DL), whichever occurs first. The observation period for this last load increment shall be 10 minutes. Displacement readings shall be recorded at 1, 2, 3, 4, 5 and 10 minutes (load increment maxima only).
5. The applied test load shall be removed in four approximately equal decrements per the schedule in Table 3. The hold time for these load decrements shall be 1 minute, except for the last decrement, which shall be held for 5 minutes.

D. Acceptance Criteria for HPM Verification Load Tests:

1. Both a., and b., as follows must be met for approval:
 - a. The helical pile shall sustain the compression design capacity (1.0 DL) with no more than 0.25 in. total vertical movement of the pile head as measured relative to the top of the helical pile prior to the start of testing.
 - b. Failure shall not occur at the 2.0 DL maximum compression and tension test loads. The failure load shall be defined by one of the following definitions – whichever results in the lesser load:
 - 1) The point at which the movement of the helical pile tip exceeds the elastic compression of the pile shaft by 0.08 B, where B is defined as the diameter of the largest helix.
 - 2) The point at which the slope of the load versus deflection (at end of increment) curve exceeds 0.05 inches/kip.
2. The Contractor shall provide the City copies of field test reports confirming helical pile configuration and construction details within 24 hours after completion of the load tests. Formal copies shall be submitted per Section 1.09, Paragraph C. Test Reports. This written documentation will either confirm the load capacity as required on the drawings or propose changes based upon the results of the pre-production tests.

Table 3. Steps for Pre-Production Load Testing

LOAD STEP	HOLD TIME (MINUTES)
AL	1.0 Min.
0.25 DL	2.5 Min.
0.50 DL	2.5 Min.
0.75 DL	2.5 Min.
1.00 DL	10.0 Min.
0.75 DL	1.0 Min.
0.50 DL	1.0 Min.
0.25 DL	1.0 Min.
AL	1.0 Min.
0.25 DL	1.0 Min.
0.50 DL	1.0 Min.
0.75 DL	1.0 Min.
1.00 DL	1.0 Min.
1.25 DL	2.5 Min.
1.50 DL	2.5 Min.
1.75 DL	2.5 Min.
2.00 DL	10.0 Min.
1.50 DL	2.5 Min.
1.00 DL	2.5 Min.
0.50 DL	2.5 Min.
AL	5.0 Min.

AL = Alignment Load; DL = Design Load

E. Production Pile Testing

1. The Contractor shall perform proof tests on a two production HPMs. The piles to be tested will be selected by the City. The test sequence shall be as shown in Table 4.

Table 4. Steps for Production Load Testing

LOAD STEP	HOLD TIME (MINUTES)
AL	0 Min.
0.20 DL	2.5 Min.
0.40 DL	2.5 Min.
0.60 DL	2.5 Min.
0.80 DL	2.5 Min.
1.00 DL	5.0 Min.
0.60 DL	1.0 Min.
0.40 DL	1.0 Min.
0.20 DL	1.0 Min.
AL	5.0 Min.

AL = Alignment Load; DL = Design Load

2. The acceptance criteria for production piles shall be per Section D. Acceptance Criteria for HPM Verification Load Tests, Paragraph 1., a.
3. If a production HPM that is tested fails to meet the acceptance criteria, the Contractor shall be directed to proof test another HPM in the vicinity. For failed piles and further construction of other piles, the Contractor shall modify the design, the construction procedure, or both. These modifications include, but are not limited to, installing replacement HPMs, modifying the installation methods and equipment, increasing or decreasing the grout column diameter, increasing the minimum effective installation torque, changing the helix configuration, increasing the grout column length, or changing the HPM material (i.e., central steel shaft, grout mix, etc.). Modifications that require changes to the structure shall have prior review and acceptance of the City.

END OF SECTION 02460

SECTION 02493 – HELICAL TIEBACK ANCHORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The purpose of this specification is to detail the furnishing of all designs, materials, tools, equipment, labor supervision, and installation techniques necessary to install helical tieback anchors as shown on the Drawings, including connection details. This shall include provisions for load testing that are part of the scope of work.

1.2 SCOPE OF WORK

- A. This work consists of furnishing all necessary engineering and design services, supervision, labor, tools, materials, and equipment to perform all work necessary to install the helical tieback anchors per the specifications described herein, and as shown on the Drawings. The Contractor shall install a helical anchor that will develop the load capacities as detailed on the Drawings. This also includes provisions for load testing to verify tieback capacity and deflection.

1.3 QUALIFICATIONS OF THE HELICAL TIEBACK ANCHOR CONTRACTOR

- A. The helical tieback anchor Contractor shall be experienced in the installation of helical tieback anchors and shall furnish all materials, labor, and supervision to perform the work. The Contractor shall provide names of on-site personnel materially involved with the work, including those who carry documented certification of helical anchor training. At a minimum, these personnel shall include foreman, machine operator, and project engineer/manager.

1.4 DEFINITIONS

Alignment Load (AL):	A nominal load applied to a ground anchor during testing to keep the testing equipment correctly positioned and remove any slack in the reaction system. Alignment load is typically 10%-15% DL.
Creep:	The movement that occurs during the creep test of a ground anchor under a constant load.
Design Load (DL):	Maximum anticipated service load applied to the ground anchor. Also known as the working load (WL).
Elastic Movement:	The recoverable movement measured during a ground anchor test resulting from the elastic elongation of the tieback material or soils.
Free Length:	Length of plain extension acting as a tendon, which is free to elongate elastically. Also known as un-bonded length or stressing length. Helix plates shall not be located in free length section of tieback. Minimum free length shall be specified on a project specific basis.
Ground Anchor:	Also known as tieback or anchor, used to transfer tensile loads to soil. Ground anchors consist of central steel shaft, helix bearing plates, coatings, corrosion protection, connection means, etc.

Helical Extension:	Helical tieback anchor component installed immediately following the lead section, if required. This component consists of one or more helix plates welded to a central steel shaft of finite length.
Helical Tieback Anchor:	A helical tieback anchor is a bearing type foundation consisting of a lead section, helical extension (if so required by site conditions), plain extension section(s), and a wall connection.
Helix Plate:	Generally round steel plate formed into a ramped spiral. The helical shape provides the means to install the helical tieback anchor, plus the plate transfers load to soil in end-bearing. Helix plates are available in various diameters and thicknesses.
Lead Section:	The first helical tieback anchor component installed into the soil, consisting of single or multiple helix plates welded to a central steel shaft. Helix plates provide end-bearing capacity.
Lock-off Load:	The stressing force in the ground anchor after load has been transferred from the hydraulic jack to the bearing plate and nut. Also known as the transfer load.
Net Settlement:	The non-elastic (non-recoverable) movement of a ground anchor measured during load testing.
Performance Test:	Similar to a Proof Test except a cyclic loading method is used to analyze total, elastic, and net movement of the ground anchor. Often used for pre-contract or pre-production load tests, in addition to a specified percentage of production anchors.
Plain Extension:	Central steel shaft of finite length without helix plates. It is installed following the installation of the lead section or helical extension (if used). The units are connected with integral couplings and bolts. Plain extensions are used to extend the helix plates beyond the specified minimum free length and into competent load bearing stratum.
Proof Test:	Incremental loading of a ground anchor, holding for a period of time, and recording the total movement at each load increment.
Safety Factor:	The ratio of the ultimate capacity to the working or design load of the ground anchor.
Test Load (TL):	The maximum load applied to the ground anchor during testing.
Thread Bar Adapter:	Section of central steel shaft used to connect the ground anchor to the wall face via a high tensile strength pre-stressing thread bar.
Torque Strength Rating:	The maximum torque energy that can be applied to the helical tieback anchor during installation in soil, also known as allowable or safe torque.
Working Load (WL):	Equivalent term for Design Load.

Ultimate Capacity (UC): Limit state based on the structural and/or geotechnical capacity of the ground anchor defined as the point at which no additional capacity can be justified.

1.5 QUALITY ASSURANCE

- A. The Contractor shall employ an adequate number of skilled workers who are experienced in the necessary crafts and who are familiar with the specified requirements and methods needed for proper performance of the work of this specification.
- B. All helical tieback anchors shall be installed in the presence of a designated representative of the City unless said representative informs the Contractor otherwise. The designated representative shall have the right to access to any and all field installation records and test reports.
- C. Helical tieback anchors components as specified in the drawings and herein shall be manufactured by a facility whose quality systems comply with ISO (International Organization of Standards) 9001 requirements. Certificates of Registration denoting ISO Standards Number shall be presented upon request to the City or their representative.
- D. Individual helical tieback anchors shall be designed so that the maximum test load will not exceed 80 percent of the maximum ultimate tension capacity of the central steel shaft material. The Contractor shall select the type of thread bar to be used. The thread bar shall be sized so the design load does not exceed 70 percent of the guaranteed ultimate tensile strength of the thread bar. In addition, the thread bar shall be sized so the maximum test load does not exceed 80 percent of the guaranteed ultimate tensile strength of the thread bar.

1.6 GROUND CONDITIONS

- A. The Geotechnical Report, including logs of soil borings as shown on the boring location plan, shall be considered to be representative of the in-situ subsurface conditions likely to be encountered on the project site. Said Geotechnical Report shall be used as the basis for helical tieback anchor design using generally accepted engineering judgment and methods.
- B. The Contractor should anticipate that difficult installation of helical tieback anchors may be encountered due to nearby existing structures, soil conditions, or buried debris. If during helical tieback anchor installation, subsurface conditions of a type and location are encountered of a frequency that were not reported, inferred and/or expected at the time of preparation of the bid, the additional costs required to overcome such conditions shall be considered as extras for which the Contractor shall be paid.

1.7 ALLOWABLE TOLERANCES

- A. Centerline of helical tieback anchor shall not be more than 3" from indicated plan location.
- B. The angular tolerance between installed tieback anchor angle and design angle shall be $\pm 3^\circ$.

1.8 REFERENCED CODES AND STANDARDS

- A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority

abbreviation and standard designation. In case of conflict, the particular requirements of this specification shall prevail. The latest publication as of the issue of this specification shall govern, unless indicated otherwise.

1. American Society for Testing and Materials (ASTM):

ASTM A29/A29M	Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.
ASTM A36/A36M	Structural Steel.
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
ASTM A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware.
ASTM A252	Welded and Seamless Steel Pipe Piles.
ASTM A775	Electrostatic Epoxy Coating
ASTM A193/A193M	Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.
ASTM A320/A320M	Alloy-Steel Bolting Materials for Low Temperature Service.
ASTM A500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
ASTM A572	HSLA Columbium-Vanadium Steels of Structural Quality.
ASTM A656	Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability.
ASTM A935	Steel, Sheet and Strip, Heavy Thickness Coils, High-Strength, Low-Alloy, Columbium or Vanadium, or Both, Hot-Rolled.
ASTM A936	Steel, Sheet and Strip, Heavy Thickness Coils, High-Strength, Low-Alloy, Hot-Rolled, with Improved Formability.
ASTM D1784	Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.
ASTM D1785	Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
ASTM D3034	Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
ASTM D3689	Method of Testing Individual Piles Under Static Axial Tensile Load.

2. American Welding Society (AWS):

AWS D1.1 Structural Welding Code – Steel.

AWS D1.2 Structural Welding Code – Reinforcing Steel.

3. American Society of Civil Engineers (ASCE):

ASCE 20-96 Standard Guidelines for the Design and Installation of Pile Foundations.

4. Association of Drilled Shaft Contractors (ADSC) The International Association of Foundation Drilling:

GEC No. 4 Ground Anchors and Anchored Systems

ADSC Mechanical Anchor Product Data

5. Post Tensioning Institute (PTI):

Recommendations for Prestressed Rock and Soil Anchors, Third Edition, Copyright 1996
By the Post-Tensioning Institute.

6. Society of Automotive Engineers (SAE):

SAE J429 Mechanical and Material Requirements for Externally Threaded Fasteners.

1.9 SUBMITTALS

A. Construction Submittals:

1. At least 14 calendar days prior to the planned start of construction, the Contractor shall submit a detailed description of the construction procedures proposed for use to the City for review. This shall include a list of major equipment to be used.
2. The technical submittal shall include the following:
 - a. Helical tieback anchor number, location and pattern by assigned identification number if not indicated on plans
 - b. Load required of each anchor
 - c. Type and size of central steel shaft
 - d. Helix configuration (number and diameter of helix plates proposed)
 - e. Minimum free length
 - f. Tieback anchor threadbar attachment to structure.
 - g. The proposed helical tieback anchor load testing equipment and procedure as described in Section 6.

3. The Contractor shall submit shop drawings for all helical tieback components, including corrosion protection and threadbar attachment to the City for review and approval. This includes helical anchor lead and extension section identification (manufacturer's catalog numbers).
4. The Contractor shall submit a copy of the proposed Installation Record form to be used during construction that will provide the information as described in Part 3, Section 3.06.
5. Work shall not begin until all the submittals have been received and approved by the City.

B. Installation Records:

1. The Contractor shall provide the City copies of screw pile installation records within 24 hours after each installation is completed. Formal copies shall be submitted on a weekly basis. These installation records shall include, but are not limited to, the following information.
 - a. Name of project and Contractor
 - b. Name of Contractor's supervisor during installation
 - c. Date and time of installation
 - d. Name and model of installation equipment
 - e. Type of torque indicator used
 - f. Location of helical tieback pile by assigned identification number
 - g. Actual central steel shaft type and configuration – including lead section (number and size of helix plates), number and type of extension sections
 - h. Helical tieback installation duration and observations
 - i. Free length of installed helical tieback Inclination
 - j. Installation torque at one-foot intervals for the entire length
 - k. Comments pertaining to interruptions, obstructions, rate of advancement or other relevant information

PART 2 – PRODUCTS

2.1 MATERIALS

A. Central Steel Shaft:

1. The central steel shaft, consisting of lead sections, helical extensions, and plain extensions, shall be Solid Square Shaft, Type SS5 as manufactured by A.B. Chance or approved equal.

- a. *Solid Square Shaft Material (1.5"x1.5")*: Shall be hot rolled Round-Cornered-Square (RCS) solid steel bars meeting dimensional and workmanship requirements of ASTM A29. The bar shall be modified medium carbon steel grade (similar to AISI 1044) with improved strength due to fine grain size.
 - 1) Torsional strength rating = 5,500 ft-lb
 - 2) Minimum yield strength = 70 ksi
- B. Helix Bearing Plate:
 1. Helix plates material shall be hot rolled carbon steel sheet, strip, or plate formed on matching metal dies to true helical shape and uniform pitch. Bearing plate material shall conform to the following ASTM specifications.
 - a. *Solid Square Shaft Material (Torque \leq 5,500 ft-lb)*: Per ASTM A572, or A1018, or A656 with minimum yield strength of 50 ksi. Plate thickness is 3/8".
- C. Bolts:
 1. The size and type of bolts used to connect the central steel shaft sections together shall conform to the following ASTM specifications.
 - a. *Solid Square Shaft Material (Torque \leq 7,000 ft-lb)*: 3/4" diameter bolt per ASTM A320 Grade L7.
- D. Couplings:
 1. Couplings shall be capable of transmitting both the maximum installation torque from the tool string to the helix plates, and the maximum axial load from the end of the anchor to the helical bearing plates.
- E. Thread bar:
 1. Helical tieback anchor thread bar shall be either a threaded stud adapter, or a combination of pre-stressing steel thread bar and adapter, both of which are attached to the previously installed central steel shaft via a coupling described in Paragraph D.
- F. Anchorage:
 1. Stressing anchorages shall be a steel bearing plate with a threaded anchor nut. Anchorage devices shall be capable of developing 95 percent of the guaranteed ultimate tensile strength of the thread bar.
 - a. Anchor nuts and other threadable hardware shall be designed to comply with the load carrying requirements of the anchorage.
 - b. The bearing plate shall be fabricated from steel conforming to ASTM A36, A588, A709 or A572 specifications, or suitable equivalent.
- G. Corrosion Protection:

1. Galvanization: All helical tieback for permanent structures shall be hot-dipped galvanized in accordance with ASTM A153 after fabrication.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

- A. Prior to commencing helical tieback installation, the Contractor shall inspect the work of all other trades and verify that all said work is completed to the point where tieback installation may commence without restriction.
- B. The Contractor shall verify that all helical tieback anchors may be installed in accordance with all pertinent codes and regulations regarding such items as underground obstructions, right-of-way limitations, utilities, etc.
- C. In the event of a discrepancy, the Contractor shall notify the City. The Contractor shall not proceed with helical tieback installation in areas of discrepancies until said discrepancies have been resolved.

3.2 INSTALLATION EQUIPMENT

- A. Shall be rotary type, hydraulic power driven torque motor with clockwise and counter-clockwise rotation capabilities. The torque motor shall be capable of continuous adjustment to revolutions per minute (RPM's) during installation. Percussion drilling equipment shall not be permitted. The torque motor shall have a minimum torque capacity 15% greater than the torsional strength rating of the central steel shaft to be installed.
- B. Equipment shall be capable of applying adequate down pressure (crowd) and torque simultaneously to suit project soil conditions and load requirements. The equipment shall be capable of continuous position adjustment and swing capacity at maximum installation torque to maintain proper helical tieback alignment during installation. The application of bending stress to the anchor during installation will not be permitted.

3.3 INSTALLATION TOOLING

- A. Shall consist of a Kelly Bar Adapter (KBA) and drive tool as appropriate for the central shaft of the helical tieback anchor under maximum installation torque and used in accordance with the manufacturers written installation instructions.
- B. Installation tooling should be maintained in good working order and safe to operate at all times. Flange bolts and nuts should be regularly inspected for proper tightening torque. Bolts, connecting pins, and retainers should be periodically inspected for wear and/or damage and replaced with identical items provided by the manufacturer. Heed all warning labels. Worn or damaged tooling should be replaced.
- C. A torque indicator shall be used during helical tieback anchor installation. The torque indicator shall be a device that directly measures torque and that is mounted in-line with the installation tooling. Devices that infer torque from hydraulic pressure will not be permitted.
 1. The device shall be capable of providing continuous measurement of applied torque throughout the installation.

2. The device shall be capable of torque measurements in increments of 200 ft-lb or less.
- 3 The device shall be re-calibrated, if in the opinion of the City and/or Contractor reasonable doubt exists as to the accuracy of the torque measurements.

3.4 INSTALLATION PROCEDURES

A. Central Steel Shaft:

1. The helical tieback anchor installation technique shall be such that it is consistent with the geotechnical, logistical, environmental, and load carrying conditions of the project.
2. The lead section shall be positioned at the location as shown on the working drawings. The lead section may be started perpendicular to the wall face to assist initial advancement into the soil. After initial penetration, the required inclination angle shall be established. The helical tieback anchor sections shall be engaged and advanced into the soil in a smooth, continuous manner at a rate of rotation not to exceed 16 RPM's. Extension sections shall be provided to obtain the required minimum free length and load capacity as shown on the working drawings. Connect sections together using coupling bolt and nut torqued to 40 ft-lb.
3. Sufficient crowd pressure shall be applied to uniformly advance the helical tieback anchor sections approximately 3 inches per revolution. The rate of rotation and magnitude of crowd pressure shall be adjusted for different soil conditions and depths.

B. Thread Bar:

1. After the termination criteria as detailed in Section 5.5 has been met, the central steel shaft is connected to the anchorage via the threaded stud adapter or via the combination of pre-stressing steel thread bar and adapter.

3.5 TERMINATION CRITERIA

- A. The torque as measured during the installation shall not exceed the torsional strength rating of the central steel shaft.
- B. The minimum installation torque required to achieve the test load and the minimum free-length criteria as shown on the working drawings shall be satisfied prior to terminating the helical tieback anchor installation.
- C. If the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to achieving the minimum free-length required, the Contractor shall have the following options:
 1. Remove the existing helical tieback anchor and install a new one with fewer and/or smaller diameter helix plates. The new helix configuration shall be subject to review and acceptance of the City.
 2. Remove the existing helical tieback anchor and install a new one with a larger central steel shaft capable of withstanding greater installation torques in order to achieve the minimum free length.

- D. If the minimum installation torque required to achieve the test load is not achieved at the minimum free length, and there is no maximum length constraint, the Contractor shall have the following options:
 - 1. Install the helical tieback anchor deeper using additional extension sections or:
 - 2. Remove the existing helical tieback anchor and install a new one with additional and/or larger diameter helix plates.
- E. If the helical tieback anchor is refused or deflected by a subsurface obstruction, the installation shall be terminated and the anchor removed. The obstruction shall be removed, if feasible, and the helical tieback anchor re-installed. If obstruction can't be removed, the helical tieback anchor shall be installed at an adjacent location, subject to review and acceptance of the City.
- F. If the torsional strength rating of the central steel shaft has been reached prior to proper positioning of the last plain extension section relative to the anchorage, the Contractor may remove the last plain extension and replace it with a shorter length extension. The Contractor shall not reverse (back-out) the helical anchor to facilitate extension removal.
- G. The average torque for the last three feet of penetration shall be used as the basis of comparison with the minimum installation torque required to achieve the test load. The average torque shall be defined as the average of the last three readings recorded at one-foot intervals.

3.6 HELICAL TIEBACK ANCHOR LOAD TESTS

A. General

- 1. The Contractor shall submit for review and acceptance the proposed helical tieback anchor load testing procedure. Production test procedures shall be in conformance with the ground anchor test procedures as detailed below, and shall provide the minimum following information:
 - Type and accuracy of load equipment
 - Type and accuracy of load measuring equipment
 - Type and accuracy of anchor-head deflection equipment
 - Calibration report for complete load equipment, including hydraulic jack, pump, pressure gauge, hoses, and fittings. Calibration shall have been performed within 120 days.

B. Load Test Equipment

- 1. The hydraulic jack shall be positioned at the beginning of the test such that the unloading and repositioning of the jack during the test is not required. The jacking system shall be capable of applying the maximum test load within 75% of the pressure rating of the jack and pump system. The pressure gauge shall be graduated in 100 psi increments or less.
- 2. The load test equipment shall be capable of increasing or decreasing the applied load incrementally. The incremental control shall allow for small adjustments, which may be necessary to maintain the applied load for a sustained, hold period.
- 3. The reaction system shall be designed so as to minimize its movement under load and to prevent bending of the thread bar. Test loads are normally higher than the design loads

on the structure. The direction of the applied load shall be collinear with the ground anchor at all times.

4. A dial gauge shall be used to measure anchor movement. The dial gauge shall have an accuracy of +/-0.001-in. or less and a minimum travel sufficient to prevent resetting the gauge. The dial gauge shall be positioned so its stem is coaxial with the axis of the anchor. The stem may rest on a smooth plate located at the end of the anchor. Said plate shall be positioned perpendicular to the axis of the anchor. The dial gauge shall be supported by a reference apparatus to provide an independent fixed reference point. Said reference apparatus shall be independent of the reaction system and shall not be affected by any movement of the reaction system.
5. The load test equipment shall be re-calibrated, if in the opinion of the City and/or Contractor reasonable doubt exists as to the accuracy of the load or deflection measurements.

C. Testing Program:

1. The anchor testing program shall consist of two parts, namely, performance tests and proof tests. The testing procedures are as described below in Section 4 – “Performance Test Procedures” and Section 5 “Proof Test Procedures” below, respectively. The Contractor shall take extreme care to not damage the wall or cap during testing, and shall be responsible for all damages caused by construction and testing.
2. The City shall select the helical tieback anchors to be performance tested. These anchors are to be installed, tested, and approved by the City prior to the installation of production anchors. All anchors, which are performance tested, shall be used as production anchors and incorporated into the retention structure. Upon completion and approval of the performance tests, the installation of production anchors may proceed.
3. Proof tests shall be performed on all production helical tieback anchors which are not performance tested. Proof tests results are subject to the approval of the City.
4. Performance Test Procedures
 - a. Two (2) anchors shall be performance tested in accordance with the following procedures.
 - b. The helical anchors which are performance tested may be completely unloaded prior to adjusting to the lock-off load, if so warranted by the construction sequence. Final loading to the lock-off load does not require further movement readings.
 - c. Helical tieback anchors shall be performance tested by incrementally loading and unloading the anchor in accordance with the following schedule. The load shall be raised from one increment to another immediately after recording the anchor movement. The anchor movement shall be measured and recorded to the nearest 0.001 inch with respect to an independent fixed reference point at the alignment load and at each increment load. The load shall be monitored with a pressure gauge. At load increments other than the maximum test load, the load shall be held just long enough to obtain and record the movement reading.

PERFORMANCE TEST SCHEDULE				
CYCLICAL LOAD INCREMENTS (%DL/100)				
AL	AL	AL	AL	AL
0.25DL*	0.25DL	0.25DL	0.25DL	0.25DL
	0.50DL*	0.50DL	0.50DL	0.50DL
		0.75DL*	0.75DL	0.75DL
			1.00DL*	1.00DL
				1.25DL*
				Reduce to lock-off load#

- * See Paragraph e. below
- # - Except as noted in Paragraph b. above
- AL = Alignment Load (10%-15% DL);
- DL = Design (Working) Load

d. The 1.25DL load increment shall be held for ten (10) minutes. The ten minute observation period shall commence as soon as the 1.25DL load is applied to the anchor. Movements shall be recorded at 0.5, 1, 2, 3, 4, 5, 6 and 10 minutes. If the anchor movement between the one (1) minute and ten (10) minute readings exceeds 0.05 inches, then the 1.25 DL test load shall be maintained for an additional 20 minutes. Movements shall be recorded at 15, 20, 25, and 30 minutes. If the acceptance criteria given in Section 6.4.1 are not satisfied, then the anchor test shall be continued for an additional 30 minutes. Movements shall be recorded at 45 and 60 minutes. If the acceptance criteria are not satisfied after this extended observation period, then the contractor shall exercise one of the options as referenced in Section 6.4.2.

e. The Contractor shall plot the helical anchor movement versus load for each load increment marked with an asterisk (*) in the performance test schedule and plot the residual movement at each alignment load versus the highest previously applied load.

f. Throughout the 1.25DL observation period, the load shall be held constant by adjusting the hydraulic pressure. Care must be taken so as not to exceed the 1.25DL test load.

5. Proof Test Procedures:

- a. All anchors which are not performance tested shall be proof tested.
- b. Anchors which are proof tested may be completely unloaded prior to adjusting to the lock-off load, if so warranted by the construction sequence. Final loading to the lock-off load does not require further movement readings.
- c. The proof test shall be performed by incrementally loading the helical anchor in accordance with the following schedule. The load shall be raised from one increment to another after an observation period. The anchor movement shall be measured and recorded to the nearest 0.001 inch with respect to an independent fixed reference point at the alignment load and at each increment load. The load

shall be monitored with a pressure gauge. At load increments other than the maximum test load, the load shall be held for a period not to exceed two (2) minutes. The two minute observation period shall begin when the pump begins to load the anchor to the next load increment. Movement readings shall be taken at the end of the two minute observation period.

PROOF TEST SCHEDULE	
LOAD TEST SCHEDULE (%DL/100)	OBSERVATION PERIOD (MIN.)
AL	0.0
0.25DL	2.0
0.50DL	2.0
0.75DL	2.0
1.00DL	2.0
1.25DL	5.0
Reduce to lock-off load = .75DL [#]	

- except as noted in Paragraph b. above

AL = Alignment Load (10%-15% DL)

DL = Design (Working) Load

- d. The 1.25DL test load shall be maintained for five (5) minutes. This five minute observation period shall commence as soon as the 1.25DL is applied to the anchor. Movement readings shall be recorded at 0.5, 1, 2, 3, 4, and 5 minutes. If the movement between the 0.5 and 5 minute reading exceeds 0.05 inches, then the 1.25DL test load shall be maintained for an additional five (5) minutes. Movement readings shall be recorded at 6 and 10 minutes. If the acceptance criteria given in Section 6.4.1 is not satisfied, then the anchor test shall be continued for an additional twenty (20) minutes. Movement readings shall be recorded at 15, 20, 25, and 30 minutes. If the acceptance criteria is not satisfied after this extended observation period, then the contractor shall exercise one of the options as referenced in Section D., Paragraph 2., below.
- e. Throughout the 1.25DL observation period, the load shall be held constant by adjusting the hydraulic pressure. Care must be taken so as not to exceed the 1.25DL test load.

D. Acceptance Criteria:

1. The net movement for the performance and proof tests shall not exceed 0.10 inches during the final log cycle of time (examples, 1-min. to 10-min. for performance tests; 0.5-min. to 5-min. for proof tests).
2. If the above criteria are exceeded, then the test shall be continued for an extended period of time as defined in Section 6.3.4.d for the performance test and in Section 6.3.5.d for the proof test. If the final log cycle of time movement at the end of the extended observation period exceeds 0.10 inches, then the Contractor shall have the following options:
 - a. Extend the observation period for an additional 60 minutes for the performance test with movement readings taken at 80, 90, 100, and 120 minutes. Extend the observation period for an additional 30 minutes if the proof test is involved with movement readings taken at 45 and 60 minutes. The net movement shall not exceed 0.10 inches during the final log cycle of time.

- b. Install the helical anchor deeper so as to increase its average installation torque, provided that the maximum torque capacity of the anchor will not be exceeded. This anchor shall be proof tested.
- c. Remove the helical anchor and reinstall an anchor with larger diameter and/or additional helices. This anchor shall be proof tested.

END OF SECTION 02493

SECTION 02735 – CRUSHED OYSTER SHELL GROUNDCOVER

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work includes construction of a crushed oyster shell groundcover as indicated on Drawings and includes, in general, excavation and compaction of subgrade, steel edge treatment, herbicide treatment, weed barrier and crushed oyster shell groundcover course.

1.2 QUALITY ASSURANCE

- A. Work shall be performed by a firm with a minimum of three (3) years' experience in successful installations of a similar nature. Provide a list of completed projects located in the area similar to this project which can be inspected by the City.

1.3 SUBMITTALS

- A. Product Data: Provide product data with application and installation instructions for all manufactured products. Submit Material Safety Data Sheets (MSDS) and conformance to State of Florida requirements for herbicides or other chemicals used.
- B. Samples: Provide samples of crushed oyster shell material proposed for use in sufficient quantity to clearly indicate uniform gradation size and overall color for Engineer's and City's approval.
- C. Groundcover Sequence: Submit proposed groundcover construction sequence and equipment required.

1.4 PRODUCT HANDLING

- A. Bulk materials shall be delivered and stockpiled at the Project Site at a location agreed to by the Engineer and City.

1.5 WARRANTY

- A. Warrant the Work for a period of one (1) year from date of Final Acceptance against settling and becoming unserviceable or causing an objectionable appearance as determined by Engineer and/or City from either defective or non-conforming materials and workmanship.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Crushed Oyster Shell: Crushed oyster shell material shall be graded for groundcover construction, thoroughly washed, screeded and properly prepared to contain NO animal matter. Material shall match approved sample.
- B. Weed Barrier - Basis of Design: Woven soil separator/weed barrier shall be DeWitt Pro 5 Weed Barrier, or approved equal.
- C. Herbicide - Basis of Design: ohp Casoron® 4G granular weed and grass killer, or approved equal.

- D. Steel Edge Treatment: As indicated on Drawings.

PART 3 – EXECUTION

3.1 EQUIPMENT

- A. All equipment used for constructing groundcover shall be capable of performing the Work as shown on Drawings and herein specified. Equipment used for compaction shall be the rolling type, vibratory type, or combination of both types, and shall be of sufficient capacity to meet the compaction requirements indicated.

3.2 PREPARATION

- A. Stake or otherwise delineate the proposed alignment of the groundcover according to layout on Drawings. Obtain approval of the Engineer and/or City prior to proceeding with excavation and subgrade preparation.
- B. Cut existing grade to minimum depth shown within limits of groundcover. Wet and roll subgrade to obtain a firm, uniform compacted surface. Keep cut sides vertical and true to line horizontally with a uniform depth. Provide fill where required to create proper walking surface slopes.
- C. Compact to 95% Standard Proctor Density per ASTM D 698.
- D. Ensure proper drainage is maintained to prevent standing water on the surface of the prepared groundcover.

3.3 STEEL EDGE TREATMENT

- A. Install steel edge treatment as detailed on Drawings.

3.4 HERBICIDE/CHEMICAL APPLICATION

- A. Apply granular weed and grass killer to prepared subgrade per manufacturer's written instructions.
- B. Herbicide or other chemicals shall be applied using well-maintained equipment by individuals who are properly licensed by the State of Florida and Federal Agency(ies) having jurisdiction over such applications.
- C. Herbicides or other chemicals shall NOT be applied during periods when wind, rain or other environmental conditions cause the herbicides or chemicals to be transported from the immediate area where they are being placed.

3.5 WEED BARRIER

- A. Install woven weed barrier with edges staked and lapped per manufacturer's written instructions.

3.6 CRUSHED OYSTER SHELL PLACEMENT

- A. Place approved crushed oyster shell material to a depth of four inches (4") as shown on Drawings. Use a smooth steel wheel roller for the final rolling of the finished surface. Correct soft spots developed during rolling.

- B. Compacted surface shall be uniform and free from waves, ruts and other irregularities. Unsatisfactory portions, as determined by the Engineer and/or City, shall be re-worked, re-laid, and rerolled at no additional cost to the City.

END OF SECTION 02735

SECTION 02750 - INTEGRALLY COLORED CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Integrally colored concrete walls
 - 2. Curing of integrally colored concrete.

1.2 REFERENCES

- A. American Concrete Institute (ACI):
 - 1. ACI 301 "Specification for Structural Concrete for Buildings."
 - 2. ACI 302 IR "Recommended Practice for Concrete Floor and Slab Construction."
 - 3. ACI 303.1 "Standard Specification for Cast-In-Place Architectural Concrete."
 - 4. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing of Concrete."
 - 5. ACI 305R "Recommended Practice for Hot Weather Concreting."
 - 6. ACI 306R "Recommended Practice for Cold Weather Concreting."
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C309 "Liquid Membrane-Forming Compounds for Curing Concrete."
 - 2. ASTM C494 "Standard Specification for Chemical Admixtures for Concrete."
 - 3. ASTM C979 "Standard Specification for Pigments for Integrally Colored Concrete."
- C. American Association of State Highway and Transportation Officials (AASHTO):
 - 1. AASHTO M194 "Chemical Admixtures."

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's complete technical data sheets for the following:
 - 1. Colored admixture.
 - 2. Curing compound.
- B. Design Mixes: For each type of integrally colored concrete.
- C. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.

- D. Qualification Data: For firms indicated in "Quality Assurance" Article, including list of completed projects.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with 10 years experience in the production of specified products.
- B. Installer Qualifications: An installer with 5 years experience with work of similar scope and quality.
- C. Comply with the requirements of ACI 301.
- D. Obtain each specified material from same source and maintain high degree of consistency in workmanship throughout Project
- E. Notification of manufacturer's authorized representative shall be given at least 1-week before start of Work.
- F. Integrally Colored Concrete Wall Mockups:
 - 1. At location on Project selected by Landscape Architect & Engineer, place and finish 10' length each of the wall sections shown on plans.
 - 2. For accurate color, the quantity of concrete mixed to produce the sample should not be less than 3 cubic yards (or not less than 1/3 the capacity of the mixing drum on the ready-mix truck) and should always be in full cubic yard increments. Excess material shall be discarded according to local regulations.
 - 3. Construct mockup of walls using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in mockup walls. Mockup shall be produced by the individual workers who will perform the work for the Project.
 - 4. Retain samples of cements, sands, aggregates and color additives used in mockup for comparison with materials used in remaining work.
 - 5. Accepted mockup provides visual standard for work of Section.
 - 6. Mockup shall remain through completion of work for use as a quality standard for finished work.
 - 7. Remove mockup when directed.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Colored Admixture: Comply with manufacturer's instructions. Deliver colored admixtures in original, unopened packaging. Store in dry conditions.

1.6 PROJECT CONDITIONS

- A. Integrally Colored Concrete Environmental Requirements:

1. Schedule placement to minimize exposure to wind and hot sun before curing materials are applied.
 2. Avoid placing concrete if rain, snow, or frost is forecast within 24-hours. Protect fresh concrete from moisture and freezing.
 3. Comply with professional practices described in ACI 305R and ACI 306R.
- B. Schedule delivery of concrete to provide consistent mix times from batching until discharge. Mix times shall meet manufacturer's written recommendations.

1.7 PRE-JOB CONFERENCE

- A. One week prior to placement of integrally colored concrete a meeting will be held to discuss the Project and application materials.
- B. It is suggested that the Landscape Architect, Engineer, General Contractor, Construction Manager, Subcontractor, Ready-Mix Concrete Representative, and a Manufacturer's Representative be present.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

- A. L. M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California or approved equal. Scofield contact: (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050.

2.2 MATERIALS

- A. Colored Admixture for Integrally Colored Concrete: CHROMIX P® Admixture and CHROMIX ML®; L. M. SCOFIELD COMPANY or approved equal.
1. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are limeproof and ultra-violet resistant.
 2. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194.
- B. Curing Compound for Integrally Colored Concrete: Curing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.
1. Exterior Integrally Colored Concrete: LITHOCHROME COLORWAX; L. M. SCOFIELD COMPANY or approved equal. Use to cure exterior flatwork that will be allowed to cure naturally with only occasional maintenance.
- C. Curing and Sealing Compound: Cureseal-S Matte; L. M. SCOFIELD COMPANY or approved equal. Curing and sealing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.

D. SUBSTITUTIONS: The use of products other than those specified will be considered providing that the Contractor requests its use in writing within 14-days prior to bid date. This request shall be accompanied by the following:

1. A certificate of compliance from material manufacturer stating that proposed products meet or exceed requirements of this Section, including standards ACI 303.1, ASTM C979, ASTM C494 and AASHTO M194.
2. Documented proof that proposed materials have a 10-year proven record of performance, confirmed by at least 5 local projects that Landscape Architect and Engineer can examine.

2.3 COLORS

A. Concrete Color:

1. Cement: Color shall be Natural gray.
2. Sand: Color shall be locally available natural sand and match Landscape Architect's sample.
3. Aggregate: Concrete producer's standard aggregate complying with specifications.
4. Colored Admixture: As selected by Landscape Architect from Scofield Color Chart A-312 or approved equal.

2.4 CONCRETE MIX DESIGN

- A. Minimum Cement Content: 6 sacks per cubic yard of concrete.
- B. Slump of concrete shall be consistent throughout Project at 4-inches or less. At no time shall slump exceed 5-inches.
- C. Do not add calcium chloride to mix as it causes mottling and surface discoloration.
- D. Supplemental admixtures shall not be used unless approved by manufacturer.
- E. Do not add water to the mix in the field.
- F. Add colored admixture to concrete mix according to manufacturer's written instructions.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install concrete according to requirements of Division 3 Section "Cast-In-Place Concrete."
- B. Do not add water to concrete mix in the field.
- C. Surfaces shall be finished uniformly with the following finish:

1. Sandblast: Allow concrete to cure to sufficient strength so that it will not be damaged by blasting but not less than seven days. Use light sandblasting to remove cement mortar from surface and expose aggregate to match originally approved mockup.

3.2 CURING

- A. Integrally Colored Concrete: Apply curing and sealing compound for integrally colored concrete according to manufacturer's instructions using manufacturer's recommended application techniques. Apply curing and sealing compound at consistent time for each pour to maintain close color consistency.
- B. Curing compound shall be same color as the colored concrete and supplied by same manufacturer of the colored admixture.
- C. Precautions shall be taken in hot weather to prevent plastic cracking resulting from excessively rapid drying at surface as described in CIP 5 Plastic Shrinkage Cracking published by the National Ready Mixed Concrete Association.
- D. Do not cover concrete with plastic sheeting.

3.3 TOLERANCES

- A. Minor variations in appearance of integrally colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

3.4 APPLICATORS

- A. For a list of qualified contractors, contact your local Scofield representative or the appropriate representative of approved equal. For Scofield contact Division Office: Eastern Division – 201-672-9050.

END OF SECTION 02750

SECTION 02872 – BICYCLE REPAIR STATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work includes the furnishing and installation of bicycle repair station(s) complete with all related hardware and anchoring required for installation and operation.

1.2 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed installation of bicycle repair stations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing bicycle repair stations similar to those required for this Project and with a record of successful in-service performance.
- C. Source Limitations: Obtain each color, finish, shape and type of bicycle repair station from a single source with resources to provide components of consistent quality in appearance and physical properties.
- D. Product Options: Drawings indicate size, shape and dimensional requirements of bicycle repair stations and are based on the specific system indicated.

1.3 SUBMITTALS

- A. Product Data: Include physical characteristics including shape, dimensions, capacity and finish for bicycle repair station.
- B. Shop Drawings: Show installation details for bicycle repair station.
- C. Samples for Verification: Submit finish samples for review and verification.
- D. Maintenance Data: For bicycle repair station.
 - 1. Include recommended methods for repairing damage to the finish.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Store bicycle repair stations in original undamaged packages and containers until ready for installation
- B. Handle bicycle repair stations with sufficient care to prevent any scratches or damage to the finish.

1.5 WARRANTY

- A. Warrant the Work for a period of one (1) year from date of Final Acceptance against defects in materials and workmanship.

PART 2 – PRODUCTS

2.1 MANUFACTURER/MODEL

- A. Basis of Design: Fixit bicycle repair station manufactured by DERO BIKE RACK CO.
- B. Products of other manufacturers will be considered provided compliance with performance and specification requirements are met, subject to approval by Engineer and City.

2.2 MATERIALS

- A. Main body: 2" pipe, 6" x 2" 11g tube.
- B. Feet: 8" x .25" steel.
- C. Tool tethers: 3/16" stainless steel cable.
- D. Manual air pump.
- E. Hand tools:
 - 1. Philips and flat head screwdrivers
 - 2. 2.5, 3, 4, 5, 6, 8mm Allen wrenches
 - 3. Torx wrench
 - 4. Headset wrench
 - 5. Pedal wrench
 - 6. 8, 9, 10, 11mm box wrenches
 - 7. Two tire levers

2.3 FINISH

- A. Provide manufacturer's TGIC powder-coated finish using an epoxy primer electrostatically applied with a final TGIC, UV resistant polyester powder coat minimum 6 mils DFT.
- B. Color to be selected by Engineer and/or City.

PART 3 – EXECUTION

3.1 GENERAL INSTALLATION GUIDELINES

- A. Space Use:

1. The bicycle repair station can accommodate one bike at a time and will use approximately the amount of space listed in the installation diagrams.
2. To ensure that the bicycle repair station is convenient and safe for bicyclists, use these minimum space use configurations when installing the bicycle repair station next to a wall or street.

B. Setbacks:

1. Wall Setback: The back of the bicycle repair station shall be at least 12" from a wall. Both sides of the Fixit shall be 36" from either wall.
2. No part of the bicycle repair station shall protrude onto a walkway, bike lane, or common area.
3. Street Setback: For bicycle repair stations running parallel to the street, a 96" setback is recommended. For bicycle repair stations installed perpendicular to the street, a 60" setback is the minimum.
4. The foot-mounted bicycle repair station shall have two 8" x .25" plates that are installed onto a concrete base with 6 masonry anchors. 3/8" anchors shall be provided.

3.2 INSTALLATION

- A. Install bicycle repair station in strict accordance with manufacturer's written instructions.
- B. Ensure that all base materials into which the rack will be installed can support the rack and will not be damaged by any required installation procedures.

END OF SECTION 02872

SECTION 02874 - SITE BENCH SWINGS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Bench Swings.
- B. Ipe Wood.

1.2 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings:
 - 1. Engineering design and calculations of complete system.
 - 2. Complete details of layout and assembly, showing member sizes and part identification, fasteners, anchors, and fittings.
- C. Selection Samples: Color selections shall be made from the manufacturer's brochure representing manufacturer's full range of available colors and patterns.
- D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- E. Manufacturer's warranties.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 15 years of experience manufacturing site benches.
- B. Installer Qualifications: Minimum of 5 years of experience assembling and installing site benches.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Engineer.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Engineer.
 - 3. Refinish mock-up area as required to produce acceptable work.
- D. Engineer qualifications: Professional Engineer licensed to practice in the State of Florida and experienced in providing engineering services for similar systems and projects.

E. Referenced Standards:

1. ADMI-05 Aluminum Design Manual: Part 1-A Specification for Aluminum Structures, Allowable Stress Design; and Part 1-B Aluminum Structures, Load and Resistance Factor Design of Buildings and Similar Type Structures AA.
2. AAF-10: Guide to Aluminum Construction in High Wind Areas 2010.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until conditions are ready for installation.

1.5 WARRANTY

- A. Limited twenty-year warranty against structural failure of all aluminum bench frames or complete aluminum bench assemblies.
- B. Limited five-year warranty against structural failure of recycled plastic lumber bench materials.

1.6 COORDINATION

- A. Coordinate Work with other operations and installation of benches to avoid damage to installed materials.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: shall have a minimum of five (5) years demonstrated experience with aluminum fabrications of similar nature and be able to provide references for existing exterior installations of their products which have been in place for at least five years.

2.2 BENCH SWINGS

- A. Provide Aluminum Frame Bench Swings with Sunshade structure at locations indicated on plan drawings which comply with the following criteria:
 1. Swing design shall comply with the concept design drawings provided in the Construction Documents.
 2. Support frame shall be constructed of square and rectangular aluminum tube shapes with, to the greatest extent possible, factory welded assembly joints.
 3. Shade lattice-work shall be constructed of rectangular aluminum tube shapes with, to the greatest extent possible, factory welded assembly joints.
 4. Bolted field assembly joints, shall be kept to a minimum (the fewest possible bolted joints necessary to permit transportation and finish application).

5. All tube shaped members shall have all exposed ends welded closed and shall be provided with weep holes as appropriate to prevent accumulation of internal condensation water.
6. All cuts, drill holes, and welds shall be ground smooth so as to remove any cutting edges, which might present danger of injury to users.
7. Frame assembly shall be anchored in concrete foundations suitably designed by a State of Florida Licensed Structural Engineer, to resist all predictable swing loads, including hurricane wind loads. Use Florida Building Code (2010 Edition with 2012 Supplement) and ASCE 7-10 for wind loads.
 - a. Mounting/anchorage of aluminum frame to concrete foundation shall provide for isolation of aluminum from direct contact with concrete so as to prevent corrosive interface.
8. Swing bench shall be constructed of Ipe Wood (for all seating surfaces) and aluminum tube shape framing.
 - a. Ipe Wood selected shall be finished in color which is complimentary to the aluminum frame color and is heat reflective to the greatest extent possible.
 - 1) Color shall be preapproved by Engineer, prior to fabrication.
 - b. End frames/arm rests for bench may be either prefab cast aluminum or aluminum tube fabrications matching swing frame.
 - c. Provide matching center arm rest mounted so as to prevent swings from being used as a sleeping surface.
 - d. Provide arm rest-resting surface, which protects user from hot metal (sun heated) surfaces.
9. Finish of all aluminum components shall be factory baked-on powder coat in a color to match that indicated for the other Riverwalk Benches, and specifically formulated for exterior weather exposure (rain and ultraviolet/sunlight resistance).
10. All bolt holes required for final assembly must be cut prior to factory finish being applied.
11. No cuts or drill holes may be cut into framework after finish has been applied.
12. Swing bench shall be suspended from the frame by stainless steel tubes or rods and stainless steel hardware selected/designed by a State of Florida licensed Professional engineer who has deemed the hardware components capable of appropriately supporting all predictable loads and of resisting weathering/corrosiveness of the marine environment.

PART3 – EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Embedded mounting: Material is to be extended a minimum of 12 inches below finish surface and cast in concrete.
- C. Surface mounting: Location and drilling of holes for inserts to be included.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Final Acceptance.

END OF SECTION 02874

SECTION 02900 - TREES, PLANTS AND GROUNDCOVERS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

Furnish all materials, equipment and labor as necessary for preparation of planting areas, soil treatment, planting of trees, shrubs, groundcovers and grass, relocation of designated plants, protection of plants, maintenance, guarantee and replacement of plants, and related items as required to complete the work as indicated on the Plans and specified herein.

Related Work:

1. Section 02440: Underground Sprinkler
2. Section 02930: Sodding
3. Section 02945: Planting Accessories

1.2 DEFINITIONS:

- A. The following words and terms or pronouns used instead shall wherever they appear in these specifications, be construed as follows, unless a different meaning is clear from the context:

"Final Acceptance" shall mean that point in time when all requirements of project drawings and specifications are completed, including any punch list items, to the satisfaction of the City of Tampa representative. The contractor shall be notified in writing of final acceptance by a City of Tampa representative.

"Warranty Period" shall be a one-year period beginning at Final Acceptance.

"Maintenance Period" shall begin when plant material is installed and continue for ninety (90) days after notification of Final Acceptance.

"Final Maintenance Inspection" shall be in accordance with 3.5 Acceptance Segment of this Section 02900.

1.3 QUALITY ASSURANCE:

- A. The landscape installation shall be by a single firm specializing in landscape work.
- B. Plant names indicated shall comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed shall conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.
- C. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock" (ANSI Z60 1) and, sizing and grading standards of the latest edition of "Grades and Standards for Nursery Plants: Part I and II" by the Florida Department of Agriculture and Consumer Services. All plant material shall be "Florida No. 1" or better.

1. Caliber measurement shall be taken six (6) inches above ground level if four (4) inches or less. If greater than 4 (four) inches, caliber measurement will be taken at twelve (12) inches above ground level.
- D. Do not make substitutions. If specified landscape material is not obtainable submit to City of Tampa representative in writing, proof of non-availability and proposal for use of equivalent material. When authorized, adjustment of contract amount will be made.
- E. All plants shall be nursery grown and 100% acclimatized to local planting conditions.
- F. Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional cost, providing that the larger plants will not be cut back to size indicated or rootbound in pots. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum size indicated and 75% are of the maximum size indicated. Height and spread specified will prevail over container size specified, for groundcover and shrub material only.
- G. All trees will be inspected and approved by the City of Tampa representative at the place of growth, for compliance with specification requirements for quality, size, and variety. When trees cannot be obtained locally, provide sufficient photographs of the proposed plants for approval.
 1. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.
 2. Tag trees at the source of supply prior to inspection by City of Tampa representative.

1.4 SUBMITTALS:

- A. Submit planting schedule showing scheduled dates for each type of planting in each area of site two weeks prior to beginning work.
- B. Submit certificates of inspection, as required by governmental authorities, and manufacturers or vendors certified analysis for soil amendments, herbicides, insecticides and fertilizer materials, submit other data substantiating that materials comply with specified requirements.
- C. Submit the following material samples:
 1. Mulch
 2. One typical sample of each shrub and groundcover material as specified, prior to planting for approval.
 - a. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.
 3. Photographs of all tree species as specified, prior to planting for approval.
 - a. The City reserves the right to field tag tree material.
 - b. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.
 4. Provide cut-sheet on all fertilizers and pre-emergent materials to be used on site, per specifications.

5. Wild Date Palms/Phoenix *Sylvestris*

- a. Record of date when palms received inoculations for Texas Phoenix Palm Disease (TPPD).
 - b. Notarized certification that date palms are true to variety (Genus: Phoenix, Species: *Sylvestris*)
 - c. Written documentation of treating date palm canopy with insecticide and copy of manufacturer's label.
- D. Upon final acceptance of plant material, submit two (2) written maintenance instructions recommending procedures for maintenance of plant materials for a one year period.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Deliver fertilizer materials in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. Store in manner to prevent wetting and deterioration.
- B. B&B Trees must be held and fully acclimatized over a period not less than eight (8) weeks prior to delivery to site.
- C. Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "Anti-Desiccant" immediately prior to digging to prevent dehydration. Dig, pack, transport, and handle plants with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order. Upon arrival the certificate shall be filed with the appropriate City of Tampa department.
- D. Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, wet peat moss, or in a manner acceptable to the City of Tampa representative. Water heeled-in plantings daily. No plant shall be bound with rope or wire in a manner that could damage or break the branches.
- E. Plant material that is stored improperly shall receive a special review of acceptance/rejection, established on a case by case basis.
- F. Cover plants transported on open vehicles with a protective covering to prevent wind burn.
- G. Topsoil shall be kept dry and loose for planting bed mixes.
- H. Label at least one (1) tree and one (1) shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

1.6 JOB CONDITIONS:

- A. Work notification: Notify City of Tampa representative at least seven (7) working days prior to installation of plant material. All plant samples to be reviewed for approval prior to notification.
- B. Protect existing utilities, paving, and other facilities from damage caused by landscaping operations. Notify Sunshine One Call a minimum of 48 hours prior to beginning work. Awarded contractor responsible for repairing any damage done by landscape installation process.

- C. A complete list of plants, including a schedule of sizes, quantities, and other requirements are shown on the drawings. In the event that quantity discrepancies or material omission occur in the plant materials list, the planting plans shall govern.
- D. Examine the subgrade, verify the elevations and all dimensions, observe the conditions under which work is to be performed, and examine unsatisfactory conditions before proceeding with the work.
 - 1. When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions or obstructions, notify City of Tampa representative before planting to determine alternative action.

Contractor shall be responsible for the removal of existing vegetation deemed necessary by City of Tampa representative to carry out scope of project.

- E. The irrigation system shall be installed prior to planting, if applicable. Locate, protect and maintain the irrigation system during planting operations. Repair irrigation system components, new and existing, damaged during planting operations with like materials. Test system prior to installation of plant material.
- F. Any work taking place along a city, county or state road or median must comply with appropriate regulating authorities' guidelines for "Traffic Controls for Construction and Maintenance Operations". A maintenance of traffic plan must be prepared and submitted to the Florida Department of Transportation prior to starting work. Lane closures will only be allowed one at a time and only between the hours of 9 a.m. and 3 p.m. Lane closures are limited to 30 minutes per event. Maintenance of traffic must be set up by certified maintenance of traffic staff.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Plants: Provide plants typical of their species or variety; with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasion of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces.
 - 1. All plant material shall be "Florida No.1", or better.
 - 2. Dig balled and burlapped plants with firm, natural balls of earth of diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.
 - 3. Container-grown stock: Grown in container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
 - a. No plants shall be loose in the container.
 - b. Container stock shall not be pot bound.

4. Trees with included bark will not be accepted. Trees shall have a minimum of five (5) feet of trunk free from branching, unless otherwise specified.
5. Plants planted in rows shall be matched in form.
6. Plants larger than those specified in the plant list may be used when acceptable to the City of Tampa representative.
 - a. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of the plant.
7. The height of the trees, measured from the crown of the roots to the average height of the top of the tree, shall not be less than the minimum size designated in the plant list. Container size designated, if any, shall be minimum size required.
8. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.
9. Height and spread requirements, of shrub and groundcover material, indicated in the plant list shall prevail over container size indicated, unless otherwise specified.
10. Shrubs and small plants shall conform to the following standards:
 - a. The measurements for height shall be taken from the ground level to the average height of the top of the plant and not the longest branch.
 - b. Single stemmed or thin plants will not be accepted.
 - c. Side branches shall be generous, well-twigged, and the plant as a whole well-bushed to the ground, unless otherwise specified.
 - d. Plants shall be in a vigorous condition, free from dead wood, bruises, or other root or branch injuries.
11. Any plant material showing signs of shock will be judged on a case by case basis for acceptance or rejection.

B. Palms

1. Sabal Palms/Sabal Palmetto:
 - a. Sabal Palms (Sabal Palmetto) specified as having "regenerated roots and leaves" as shown on the plant schedule (L201) shall be minimum Florida No. 1 grade unless noted otherwise. The root balls shall have new, regenerated, round-tipped roots that have emerged from the root initiation zone. Roots shall be whitish-yellow in color, have tapered ends and be present on all sides of the root ball. To qualify as "regenerated roots" Sabal palms, after field harvesting and during the root regeneration period, Sabal palm root balls shall have been placed in containers or be contained within "plastic fabric or film material", or approved equal. They shall have a minimum of three fully expanded new fronds that have not been pruned. Fully expanded new fronds shall meet the minimum requirements to be considered "excellent leaves", as defined by the glossary of

terms in the latest edition of the Florida Department of Agriculture and Consumer Services Grades and Standards for Nursery Plants – Palms and Cycads.

- b. Color photographs of "regenerated roots" Sabal palms shall be provided by the contractor and submitted to the City of Tampa and landscape architect of record for approval prior to delivery and installation on the project construction site. Photos shall clearly depict: the clear trunk height; the trunk diameter measured at the base; the root ball measurements; regenerated roots on all sides of the root ball; three fully expanded new fronds. All measurements and requirements noted herein shall be clearly identifiable in the color photograph submittals.
- c. Upon delivery to the project construction site or holding area "regenerated roots" Sabal palms will be subject to inspection by the landscape architect of record and the City to confirm compliance with these specifications before installation. Sabal palms that do not meet the minimum requirements noted herein will not be approved. Rejected materials shall be removed from the project construction site by the contractor at no additional cost to the City.

2. Wild Date Palms/Phoenix *Sylvestris*:

- a. Untie fronds of Wild Date palms immediately after installation. Remove and dispose of any twine, rope, tags, flagging material, etc. properly.
- b. Prior to start of work, contractor to furnish the landscape architect with a notarized certification form that project Date palms are true to variety, (i.e. genus: Phoenix, Species: *Sylvestris*).
- c. Wild Date palm trunks to be diamond cut.
- d. Wild Date palms to be fertilized with 8-2-12+4 magnesium slow release fertilizer with micronutrients under entire drip line of palm.
- e. Wild Date palms to be sourced from nurseries with no history of Texas Phoenix Palm Decline (TPPD).
- f. Wild Date palm canopies shall be treated with insecticide at the nursery/supplier source prior to shipment to the project site. Provide written documentation to the engineer of the chemical treatment and a copy of the manufacturer's label.
- g. Wild Date palms to be inoculated for TPPD. Contractor to provide record of inoculation dates.

2.2 ACCESSORIES:

- A. Refer to drawings and other portions of specifications for accessories specifically used on this project.
 - B. Topsoil for Planting Beds: Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay, lumps, coarse sands, stones, plants, roots, sticks, and other foreign materials, with acidity range between pH 5.5 and 6.5. Mixture 50% coarse native sand and 50% peat as specified.
1. Expressly identify source location of topsoil and/or peat proposed for use on the project.

2. Provide topsoil free of substances harmful to the plant material. Topsoil shall be sterilized.
- C. Peat: Brown to black in color, sterile, weed and seed free granulated raw peat, containing not more than 9% mineral on a dry basis.
- D. Fertilizer shall be 'Agriform' 20-10-5 application per Landscape Construction Plans. Fertilizer for Citrus species shall be 'NutriCoat' or approved equal, 18-6-8 applied in the planting pit at 2 pounds per 45 gallon container sized tree. Fertilizer shall not be applied between June 1st and October 1st in compliance with the City of Tampa fertilizer ban.
- E. Anti-Desiccant: Protective film emulsion providing a protective film over plant surfaces; permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions.
- F. Mulch shall be mini pine bark nuggets. Mulch shall be spread at minimum of two (2) inches deep and maximum of four (4) inches deep or as otherwise noted.
- G. Water: Free of substances harmful to plant growth. Water shall contain less than 300 ppm soluble salts and less than 10 ppm chlorine, fluoride and sodium. Hoses or other methods of transportation furnished by Contractor. Contractor shall furnish water supply from an acceptable source. Acceptable sources: deep wells, municipal potable supply and treated wastewater.
- H. Guys: All trees shall be secured with Tree Staple TS48 by Tree Staple, Inc., three per tree.
- I. Pre-emergent weed killer: Apply 2: granular "Chipco" Ronstar or approved equal, at a rate recommended by manufacturer.
- J. Palm Tree staking: Palm trees will be staked per detail in Landscape Construction Plans.

PART 3 - EXECUTION

3.1 INSPECTION:

Contractor shall examine proposed planting areas and conditions for installation. Do not start planting work until unsatisfactory conditions are corrected.

3.2 PREPARATION:

- A. Time of planting.
 1. Deciduous material: If deciduous trees are planted in-leaf, they shall be sprayed with an anti-desiccant prior to planting operation.
- B. Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
- C. Layout of individual tree locations shall be performed by the awarded contractor prior to starting work at each site. Give 48 hour notice of need for inspection and approval by City of Tampa representative. If obstructions are encountered that are not shown on the drawings, do not proceed with planting operations until alternate plant locations have been selected. Verify locations of existing utilities.

- D. Excavate circular plant pits with vertical sides. Provide shrub pits at least 12" greater than the diameter of the root system and 3 times greater than diameter of rootball for trees. Depth of pit shall accommodate the root system. Remove excavated materials from the site immediately.
- E. Provide pre-mixed planting mixture for use around the balls and roots of the plants consisting of ½ topsoil, ½ indigenous soil and ½ lb. plant fertilizer as specified, for each cu. yd. of mixture.
- F. Planting soil mixture for all palms shall consist of three (3) parts silica sand and one (1) part native soil backfill mixture.

3.3 INSTALLATION:

- A. Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set plant material 2"-3" above the finish grade. No filling will be permitted around trunks or stems. Backfill the pit with planting mixture until approximately 2/3 full, then water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Do not use muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water.

After balled and burlapped plants are set, place soil mixture around bases of balls and fill all voids.

- 1. Remove all burlap, ropes, and wires from the tops of balls.
- B. Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 4' of the trunks of trees and shrubs within planting bed and to within 18" of edge of bed or curb line.
- C. Apply anti-desiccant using power spray to provide adequate film over trunks, branches, stems, twigs and foliage.
- D. Mulch:
 - 1. Apply pre-emergent weed killer over grade prior to mulching, as specified by City of Tampa representative. Use rates recommended for specified product.
 - 2. Mulch tree, shrub planting pits and shrub beds with required mulching material 3" deep or as otherwise noted immediately after planting. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.
- E. Staking/Guying:
 - 1. Guy all trees over 2" in caliber immediately after lawn seeding or sodding operations and prior to acceptance. When high winds or other conditions which may affect tree survival or appearance occur, the City of Tampa representative may require immediate staking/guying.
 - 2. Brace all palm trees per detail in Landscape Construction Plans.
 - 3. All work shall be acceptable to the City of Tampa representative.
- F. Pruning:

1. Prune branches of B&B stock, prior to transplanting, to balance the loss of roots and preserve the natural character appropriate to the particular plant requirements. In general, remove 1/4 to 1/3 of the leaf bearing buds, proportion shall in all cases be acceptable to the City of Tampa representative. Remove or cut back broken, damaged, and unsymmetrical growth of new wood. Prune trees to retain required height and spread. Do not cut structural branches. Required sizes are the size after pruning.
2. Multiple leader plants: Preserve the leader which will best promote the symmetry of the plant. Cut branches at branch collars.

G. Care of Existing Trees:

1. All existing trees, if any, shall be protected through the duration of this project as outlined in the Tree Protection Standards of the City of Tampa Site Clearing Ordinance. These requirements and those attached at the end of this section are available in the City Hall Annex Building, Duplication office for a fee.

H. Tree Relocation:

1. Tree relocation shall be performed under the supervision of the City Arborist, 931-2121.

3.4 MAINTENANCE:

- A. Begin maintenance immediately after planting. Maintain all plant material until final acceptance and for an establishment period of ninety (90) days after final acceptance.
- B. Maintenance shall include but is not limited to pruning, cultivating, mowing, weeding, fertilizing, watering, and application of appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.

1. Plant Material:

- a. Re-set settled plants to proper grade and position. Restore planting saucer and adjacent material and remove dead material.
- b. Tighten and repair guys and stakes as required.
- c. Correct defective work immediately after deficiencies become apparent and weather permits.
- d. Pruning shall be performed as needed to mechanically remove damaged branches. Contractor shall maintain State of Florida No. 1 form to attain final acceptance.
- e. Apply pesticides as needed to maintain plant material in a healthy condition. Obtain City of Tampa approval prior to any chemical applications. All chemicals shall be applied by a licensed chemical applicator.

2. Water:

- a. Contractor shall provide the City of Tampa with irrigation run times for each zone.

- b. Provide supplemental water as needed for establishment of healthy plant material.
- c. If no system exists, water trees every other day saturating the soil to depth of three (3) feet for the first two (2) weeks. If no irrigation system exists, water plant material per the following schedule:

1-30 days - water every other day, saturating the soil to a depth of 3 feet.

30-90 days - water twice a week, saturating the soil to a depth of three (3) feet.

Quantity of water applied should be adjusted in accordance to rainfall.

3. Litter:

- a. Pick up litter on a weekly basis and prior to any mowing operations.

4. Edging:

- a. Edge planting beds with every mowing operation. Edge any curbs or sidewalks adjacent to new sod.

5. Mulch:

- a. Maintain 3" of mulch through-out planting areas. Add mulch as needed during maintenance period to assure coverage of drip irrigation tubing.

6. Weeding:

- a. Weed planting beds weekly by hand or with chemical application where appropriate. Chemicals must be applied by a licensed applicator. All chemicals must be approved by the City prior to application. Line trimmers will not be allowed for weed removal inside planting beds.

7. Irrigation System:

- a. Maintain irrigation system in working order. This is a computerized irrigation system. The main computer is monitored by the City of Tampa Parks and Recreation Department. High and low flows are recorded as "alarms" on a daily basis. The contractor providing maintenance will be notified daily of any 'alarms'. Repairs should be addressed within forty-eight (48) hours and the department notified of the repair.

8. Mowing:

- a. Mow weekly from April 1st to October 1st and every fourteen (14) days the rest of the year.

3.5 ACCEPTANCE:

- A. Inspection to determine acceptance of planted areas will be made by the City of Tampa representative upon Contractor's request. Provide notification at least 5 working days before requested inspection date.
 - 1. Planted areas will be accepted provided all requirements, including maintenance, have been complied with and plant materials are alive and in a healthy, vigorous condition.
- B. The City of Tampa representative will prepare a "punch list" of those items which must be corrected before reinspection for final acceptance. The City of Tampa representative will determine an appropriate time period in which punch list items must be corrected. Provide 48 hour notification of need for reinspection.
- C. The owner will assume plant maintenance ninety (90) days after final acceptance, at which time, the contractor shall request a final maintenance inspection for acceptance, where requirements as stated in 3.5 apply.

3.6 WARRANTY:

- A. Warrant plant material to remain alive and be in healthy, vigorous condition for a period of one (1) year after completion and final acceptance of entire project.
- B. Replace, in accordance with the drawings and specifications, all plants that are dead or as determined by the City of Tampa representative to be in an unhealthy or unsightly condition, and have lost their natural shape due to contractor's negligence. The cost of such replacement(s) is at Contractor's expense. Warrant all replacement plants for six months after Final Acceptance.
- C. Warranty shall not include damage or loss of trees, plants, or ground covers caused by fires, floods, freezing, rains, lightning storms or winds over 75 miles per hour, winter kill caused by extreme cold and severe winter conditions not typical of planting area; acts of vandalism or negligence on the part of the owner.
- D. Remove and replace immediately all plants found to be dead or in unhealthy condition as determined by City of Tampa representative at any time during warranty period. Make replacements within four (4) weeks of notification.
 - 1. An inspection will be conducted at the end of the warranty period. Contractor will replace any plants found to be dead or in poor condition at this time within four (4) weeks of inspection. Contractor will also remove any tree bracing or guying determined by the city representative to be unnecessary at this point in the trees development.

3.7 CLEANING:

Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soil, debris, and equipment. Do not leave on site overnight, unless arrangements have been made to do so with the City of Tampa representative. Coordinate with City Representative on site storage of debris and/or trash. Repair all damage resulting from bore, irrigation and planting operations.

END OF SECTION 02900

SECTION 02930 – SODDING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide sodded lawns as shown and specified. The work includes:

1. Soil preparation.
2. Sodding lawns and other indicated areas.
3. Maintenance.

B. Related work:

1. Section 02440: Underground Sprinkler.
2. Section 02900: Trees, Plants, and Ground Covers.

1.2 QUALITY ASSURANCE

A. Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.

B. Provide and pay for materials testing. Testing agency shall be acceptable to the Landscape Architect. Provide the following data:

1. Test representative materials samples proposed for use.
2. Soil analysis of existing conditions.
 - a. Soil pH and recommendations for correction. Ideal pH for Bahia is 5.0 - 6.5.
 - b. Nematode infestation check and recommendation for eradication.
 - c. Organic matter check and recommendation.
 - d. Starter fertilizer check and recommendations.

1.3 SUBMITTALS

A. Submit sod growers certification of grass species. Identify source location.

B. Submit the following material samples:

1. Topsoil.

C. Submit the following material certification:

1. Submit certificates of inspection as required by governmental authorities and manufacturers or vendors certified analysis for soil amendments, herbicides, insecticides

and fertilizer materials; submit other data substantiating that materials comply with specified requirements.

- D. Submit soil analysis report.
- E. Bidders shall furnish, with their bid, evidence in writing that they maintain a permanent place or places of business and have adequate equipment, finances, and personnel to provide the specified services. This evidence shall include, but not be limited to: a list of current contracts, their value, and a contact person with each firm; at least three references who can verify work of a similar nature done by your firm in the last three year; a list of owned and/or leased equipment available for use on this contract; a list of key personnel and a brief summary of their qualifications. Failure to provide the listed material may cause the Bidder to be deemed non-responsive. The City reserves the right to inspect the apparent low Bidder's place of business and equipment prior to contract of any bid to determine the responsibility and capability of the Bidder to perform the services. The City also reserves the right to solicit references in making judgment on the Bidder's ability to perform said services.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Cut, deliver and install sod within a 24-hour period.
 - 1. Do not harvest or transport sod when moisture content may adversely affect Sod survival.
 - 2. Protect sod from sun, wind, and dehydration prior to installation.
 - 3. Do not tear, stretch, or drop sod during handling and installation.

1.5 PROJECT CONDITIONS

- A. Work notification: Notify City of Tampa representative at least 7 working days prior to start of sodding operations.
- B. Protect existing utilities, paving and other facilities from damage caused by sodding operations.
- C. Perform sodding work only after planting and other work affecting ground surface has been completed.
- D. Existing soil to be amended as determined necessary from soil analysis, including: soil pH, nematode infestation, organic matter check and starter fertilizer check.
- E. Restrict traffic from lawn areas until grass is established.
- F. Provide hose and lawn watering equipment as required.
- G. The irrigation system for plant material and trees will be installed prior to sodding. Locate, protect and maintain the irrigation system during sodding operations. Repair irrigation system components damaged during sodding operations at this Contractor's expense.

1.6 WARRANTY

- A. Provide a uniform stand of grass by watering, mowing and maintaining lawn areas until Final Acceptance and for a period of 90 days after Final Acceptance. Re-sod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the City of Tampa representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Sod: An "approved" nursery grown sod composed of Argentine Bahia (*Paspalum notatum* 'Argentine').
1. Provide well-rooted, healthy sod, free of diseases, nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.
 2. Furnish sod machine stripped and of supplier's standard width, length, and Thickness: Uniformly 1" to 1-1/2" thick with clean cut edges. Mow sod before stripping.
- B. Fertilizer:
1. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
 - a. Type A: Starter fertilizer containing 16% nitrogen, 4% phosphoric acid, and 8% potash by weight or similar approved composition.
 - b. Type B: Top dressing fertilizer containing 31% nitrogen, 3% phosphoric acid, and 10% potash by weight or similar approved composition.
 - c. Ground Limestone: Containing not less than 85% of total carbonates and Ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20 mesh sieve.
- C. Stakes
1. Steel, tee shaped pins, 4" head x 8" leg.
- D. Water: Free of substance harmful to sod growth. Hoses or other methods of Transportation furnished by contractor.
- E. Topsoil: Fertile, friable, natural topsoil of loamy character, without admixture of material, reasonably free from clay lumps, coarse sand stones, plants, roots and other foreign materials with an acidity level as specified by type of sod.
1. Identify source location of topsoil.
 2. Topsoil shall be fertilized.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start sodding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. If area to be sodded has existing grass or vegetative cover, apply a non-selective Herbicide (Round-up) to area. Wait ten (10) days before continuing with prep work.
- B. Loosen topsoil of lawn areas to minimum depth of 8". Remove stones over 1" in any dimension and sticks, roots, rubbish, and extraneous matter.
- C. Add 2" topsoil or organic material as required from organic matter check. Till into top 8" of existing soil.
- D. Grade lawn areas to smooth, free drainage and even surface with a loose, uniformly fine texture. Roll and rake, remove ridges and fill depressions as required to drain.
- E. Apply limestone at rate determined by the soil test, to adjust pH of topsoil as specified in sod type. Distribute evenly by machine and incorporate thoroughly into topsoil.
- F. Apply "Type A" fertilizer as specified by manufacturer. Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to a depth of by dicing or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil. Fertilizer shall not be applied between June 1st and October 1st in compliance with City of Tampa fertilizer ban.
- G. Dampen dry soil prior to sodding.
- H. Restore prepared areas to specified condition if eroded, settled or otherwise. Distributed after fine grading and prior to sodding.

3.3 INSTALLATION

- A. Lay sod to form a solid mass with tightly-fitted joints. Butt ends and sides of sod Strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains and seed areas.
- B. Do not lay dormant sod or install sod on saturated soil.
- C. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row.
- D. Peg sod on slopes greater than 3 to 1 to prevent slippage at a rate of 2 stakes per yd. of sod.
- E. Water sod thoroughly with a fine spray immediately after laying.
- F. Roll with light lawn roller to ensure contact with subgrade.
- G. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

3.4 H. Top dress all seams of sodded area with specified topsoil.
MAINTENANCE

- A. Maintain sodded lawns for a period of at least 90 days after completion and acceptance of sodding operations.
- B. Maintain sodded lawn areas, including watering, spot weeding, mowing, application of herbicides, fungicides, insecticides and re-sodding until a full, uniform stand of grass free of weed, undesirable grass species, disease, and insects is achieved and accepted by the City of Tampa representative.
 - 1. Water sod thoroughly every 2 to 3 days, as required to establish proper rooting.
 - 2. Repair, rework, and re-sod all areas that have washed out or are eroded. Replace undesirable or dead areas with new sod.
 - 3. Mow lawn areas as soon as lawn top growth reaches a 3" height. Cut back to 1-1/4" height. Repeat mowing as required to maintain specified height. Not more than 40% of grass leaf shall be removed at any single mowing.
 - 4. Apply "Type B" fertilizer to lawns approximately 30 days after sodding at a rate specified by the manufacturer. Apply with a mechanical rotary or drop type distributor. Thoroughly water into soil.
 - 5. Apply herbicides as required to control weed growth or undesirable grass species.
 - 6. Apply fungicides and insecticides as required to control disease and insects.

3.5 ACCEPTANCE

- A. Inspection to determine acceptance of sodded lawns will be made by the Landscape architect, upon contractor's request. Provide notification at least 5 working days before requested inspection date.
 - 1. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects.
- B. Upon acceptance contractor shall maintain area for 90 days. At the end of this period contractor shall request a final request a final maintenance inspection for acceptance.
- C. Upon acceptance at end of maintenance period the City of Tampa will assume lawn maintenance.

3.6 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the Work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from sodding operations.

END OF SECTION 02930

SECTION 02945 - PLANTING ACCESSORIES

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. Landscape edging for straight-line and curvilinear borders between turf, planting beds and shell areas.
- B. Related work:
 - 1. Section 02440: Underground Sprinkler
 - 2. Section 02900: Trees, Plants, and Ground Covers
 - 3. Section 02930: Sodding

1.2 REFERENCES

- A. ASTM B 221 (ASTM B 221M): Standard Specification for Aluminum and Aluminum - Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- B. ASTM B 209-01 (ASTM B 221M): Standard Specification for Aluminum and Aluminum – Alloy Sheet and Plate.
- C. AAMA: American Architectural Manufacturer's Association for aluminum finishes.

1.3 SUBMITTALS

- A. Submit manufacturer's product data.
 - 1. Submit 3 inch (76 mm) long edging sample of specified size and colors.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver to location as instructed by Contractor in manufacturer's package showing no signs of damage to product.
- B. Investigate delivered damaged packages and if product is damaged, Contractor to not accept and have product returned and replaced. Store boxed products on flat surface and protect from water exposure.

1.5 WARRANTY

- A. 15-year limited material warranty for manufacturing defects in workmanship or material.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. PermaLoc Corporation, 13505 Barry St, Holland, MI 49424, USA, telephone: (800) 356-9660, (616) 399-9600, fax (616) 399-9770, e-mail: info@permaloc.com, web site: www.permaloc.com, or approved equal.

2.2 MANUFACTURED UNITS

A. Heavy Duty Straight Profile Edging.

1. Description: PermaLoc CleanLine, or approved equal extruded aluminum landscape edging for straight-line and curvilinear applications in corrugated straight profile. Section shall have loops on side of section to receive stakes spaced approximately 2 to 3 feet (610 mm to 915 mm) apart along its length.
2. Size:
 - a. 1/8 inch x 5-1/2 inches (3.2 mm x 140 mm) – curved bed edges.
 - b. 3/16 inch x 5 1/2 inches (4.8 mm x 140 mm) - straight bed edges.
3. Thickness:
1/8 inch (3.2 mm) gage section at 0.072 inch (1.83 mm) minimum thick with 0.135 inch (3.4 mm) exposed top lip and 3/16 inch (4.8 mm) gage section at 0.116 inch (2.95 mm) minimum thick with 0.187 inch (4.75 mm) exposed top lip.
4. Length:
16 feet (4.88 meters). Selected products in 8-foot (2.44 meters) sections.
5. Connection Method:
Section ends shall splice together with an interlocking stakeless snap-down design.
6. Finish:
 - a. Natural Mill Aluminum

2.3 STAKES

- A. Standard Gage Stake: 12 inch (305 mm) PermaLoc Standard Stake, aluminum, 0.10 inch (2.5 mm) thick x 11.81 inches (300 mm) long x 1.12 inches (28.4 mm) wide.
- B. Optional Heavy Gage Stake: PemaLoc Structural Stake, extruded aluminum, 0.125 inch (3.2 mm) thick with 0.25 inch (6.4 mm) round mid-section, 1.25 inches (32 mm) wide in following lengths:
1. 16" (406 mm)
 2. 18" (457 mm)
 3. 24" (610 mm)
- C. Stakes to interlock into section loops on face side of section. Requires 5 (or 8 for PermaStrip) stakes for each 16 feet (4.88 meters) section with total of 8 loops available or 3 stakes for each 8 feet (2.44 meters) section with total of 3 loops available.
- D. Finish: Shall be same as edging.

2.4 EDGING AND STAKE MATERIAL

- A. Edging: ASTM B 221 (ASTM B 221M), Aluminum 6063 alloy, T6 hardness.
- B. Stakes (12"(305 mm)): ASTM B 209-01 (ASTM B 209M), Aluminum 3004 alloy, H34 hardness.
- C. Stakes (16"(406 mm), 18" (457 mm), 24"(610 mm)): ASTM B 221 (ASTM B 221M), Aluminum 6063 alloy, T6 hardness.

PART 3- EXECUTION

3.1 PREPARATION

- A. Ensure that all underground utility lines and pipe lines are located and will not interfere with the proposed edging installation before beginning work.
- B. Locate border line of edging with string or other means to assure border straightness and curves as designed.
- C. Dig trench 1 inch (25 mm) deeper than set of edging bottom.

3.2 INSTALLATION

- A. Set edging into trench with top at ½ inch (12.7 mm) above compacted finish grade on turf side with side having loops for stakes placed on opposite side of turf.
- B. Securely connect sections together in accordance with manufacturer's instructions. Drive stakes through edging loops with spacing in accordance with manufacturer's recommendations until locked into edging with stake top 1/8" (3.2 mm) below top of edging. Provide additional stakes, longer stakes, heavier gage stakes, or any combination of previously mentioned as necessary to firmly secure edging for permanent intended use.
- C. Where edging sections turn at corners and at angled runs, cut edging partially up through its height from bottom and turn back to desired angle to form rounded exposed radius.

3.3 BACKFILLING AND CLEANUP

- A. Backfill both sides of edging, confirm and adjust if necessary that sections are securely held together, and compact backfill material along edging to provide top of edging at ½ inch (12.7 mm) above yard finish grade.
- B. Cleanup and remove excess material from site.

END OF SECTION 02945

SECTION 05720 - CABLE RAILING SYSTEM (MODULAR ORNAMENTAL RAILING SYSTEM)

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete railing as shown on the drawings and/or specified herein:
 - 1. Stainless steel handrails, guardrails and railing systems.

1.3 QUALITY ASSURANCE

- A. General: Work of this section shall be equal in performance, durability, and appearance, to SPI-2000 Component Railing System, stainless steel (316 SST) railing with 1/8" stainless steel cable infill by Secosouth, Inc. Materials, methods of fabrication, fitting, assembly bracing, supporting, fastening, operating devices and erection shall be in accordance with drawings and specifications and approved shop drawings. Fabrication will be of the highest quality practices in the industry, using new and clean materials as specified, having structural properties sufficient to safely sustain or withstand stresses and strains to which materials and assembled work will be subjected, and shall comply with all applicable Codes and regulations. All work shall be accurately and neatly fabricated, assembled and erected.
- B. Contractor/fabricator shall be responsible for fabrication of a complete railing system for each type.
- C. Product Quality: Handrails, guardrails, and railing systems shall be fabricated from stainless steel only, retaining consistent quality in appearance and physical properties.
- D. Engineer Qualifications: Professional engineers licensed to practice in the State of Florida, and experienced in providing engineering services of the kind indicated for handrails and railing systems similar to this Project in material, design, extent, and that have a record of successful in-service performance.

1.4 SUBMITTALS

- A. Shop Drawings: Submit for all items of work, showing metal thickness arrangement of components, of joining, of jointing, details of all field connections and anchorages, fastening and sealing methods, and support methods, metal finishes and all other pertinent information:
 - 1. Engineering design and calculations for handrails and railing assemblies – see Article 1.7 herein.
 - 2. Shop Drawings to be prepared utilizing AUTOCAD 2011 (or newer), Utilizing solid models and paper space.

1.5 PRODUCT HANDLING

- A. Finished Materials: Protect finishes against soiling, staining or damage from scratches and abrasion. Maintain protection during construction until written product approval by the Engineer/Contractor.

1.6 PERFORMANCE STANDARDS

- A. Railings shall withstand a two hundred (200) lb. force applied to rail from any direction, and a uniformly distributed load of 50 lbs./lin. ft. applied downward or horizontally, loads not to act simultaneously.
- B. Thermal Movements: Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in engineering, fabricating, and installing handrails and railing systems to prevent buckling, opening of joints, overstressing of components and connections, damage to adjoining construction, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 120°F (67°C) ambient, 180°F (100°C) material surfaces.
 - 2. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Handrail and railings to be furnished shall be equal in performance, durability, and appearance, to SPI-2000 Component Railing System, stainless steel (316 SST) railing with 1/8" stainless steel cable infill by Secosouth, Inc.
- B. "Basis of Design, Manufacturer Contact:
Secosouth, Inc.
2111 34th Way
Largo, FL 33771
Tel: 727-536-1924
email: Sales@Secosouth.com
- C. Provide materials which have been selected for their surface flatness, smoothness and freedom from surface blemishes where exposed to view in the finish unit. Exposed surfaces which exhibit pitting, seam marks, roller marks, "oil canning", stains, discolorations or other imperfections on the finished units will not be acceptable.
- D. Stainless steel pipe: Provide Type 304 stainless steel – 1-1/2" O.D. industry approved by ADA.
- E. Stainless steel castings: Provide investment (ceramic shell or lost wax) cast stainless steel Type 316 in sizes, configurations and finish as indicated on drawings.
- F. Fasteners for Interconnection Handrails and Railing Components: Select fasteners of type, grade and class required. Fasteners shall be fabricated from Type 316 stainless steel.

- G. Fasteners for Anchoring Handrails and Railings to Other Construction: Select fasteners of type, grade and class required to produce connections suitable for anchoring handrails and railing to other types of construction indicated and capable of withstanding design loads. Fasteners shall be fabricated from Type 316 stainless steel.
- H. Adhesive: 3M Scotch-Weld DP-125 Grey (25-minute work life) and/or DP-810 (10-minute work life) for railing connections.
- I. Fast Setting Cement (Pour Stone or Rockite) for floor-mounted railings.
- J. Cable In-Fill: Provide cable in-fill as follows:
 - 1. Cable to be 1/8" diameter braided, type 316 stainless steel aircraft cable.
 - 2. Cables shall be supplied complete with all fittings necessary to form a functioning unit, including quick connect fittings.
 - 3. Horizontal rows of cable shall be placed on 3" maximum centers to form the in-fill, and must comply with Code.
 - 4. Posts shall be spaced so as to limit the deflection of the cable in-fill.

2.2 FABRICATION

- A. General: Fabricate handrails and railing systems to comply with requirements indicated for design, dimension, details, finish, and member sizes, including wall thickness of hollow members, post spacing, and anchorage, but not less than those required to support structural loads.
- B. Shear, punch, laser or water-jet cut material cleanly and accurately. Remove burrs from exposed cut edges.
- C. Ease exposed edges to a radius of approximately 1/32", unless otherwise indicated. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing work.
- D. Cut, reinforce, drill and tap components, as indicated, to receive finish hardware, screws and similar items.
- E. Provide weep holes, or other means to evacuate entrapped water, in hollow sections of railing members that are exposed to exterior or to moisture from condensation or others sources.

2.3 FINISHES

- A. Provide #4 satin finish on all exposed stainless steel tubing components including but not limited to horizontal top, intermediate and bottom rails and vertical balusters.
- B. All finishes to be provided evenly without significant changes in coloration and texture.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare for attachment as follows:
 - 1. Concrete boring, to fit posts as required for embed mounted posts.
 - 2. Anchors and/or threaded inserts will be required for all bolt-connection type fittings (fascia mount, surface mount, wall mount).
 - 3. When welded post connections are specified, clean and prep the internal tenon and underlying structure per contract requirements and the applicable welding code.
- B. At any surfaces to be glued, to insure proper bonding, the mating surfaces on all fittings and tubing need to be scuffed using a "Scotch-Brite" pad or sandpaper and wiped clean with a 50% alcohol solution. All gluing surfaces must be free of grease and dirt.
- C. Gluing surfaces must be free of grease and dirt.

3.2 INSTALLATION – GENERAL

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling and fitting required for installing handrails and railing systems. Set handrails and railing systems accurately in location, alignment, and elevation, measured from established lines and levels and free from rack.
 - 1. Do not weld, cut, or abrade surfaces of handrails and railing components that have been coated or finished after fabrication and are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of ¼-inch in 7 feet.
 - 3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed ¼-inch in 7 feet.
 - 4. Adjust handrails and railing systems prior to anchoring to ensure matching alignment at abutting joints.
- C. Removable thread locking compound can be applied to panel clamp fasteners if vibration loosening is a concern.

3.3 CLEANING AND PROTECTION

- A. Immediately upon completion of installation and as needed, clean all railing surfaces using a NON-abrasive stainless steel cleaner. Do not use abrasive agents or harsh chemicals. Provide adequate protection for all surfaces of completed installations to prevent damage during remainder of construction activities.

END OF SECTION 05720

SECTION 05750 – DECORATIVE METAL SCREEN-WALL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work includes perforated metal screen-wall panels, and all related framing, supports, mounts and hardware.
- B. Decorative Metal Screen-wall systems include two types. One system mounts directly to bridge barrier wall as indicated in drawings. The other system mounts to lamp posts as indicated in drawings.

1.2 QUALITY ASSURANCE

- A. All fabrication shall be accomplished by supplier who has been regularly and consistently involved in design and construction of similar fabrications for at least five (5) years.
- B. All welds shall be accomplished by certified welders.

PART 2 – PRODUCTS

2.1 PERFORATED METAL PANELS

- A. Metal Panels shall be perforated stainless steel (316) sheet metal of 3/16" thickness (minimum) with all edges ground smooth (all sharp edges removed). Pattern of perforations shall be 1/2" diameter round holes on 11/16" staggered centers.
- B. Panels shall be fabricated to sizes and in shapes indicated on drawings.

2.2 FRAMING

- A. Framing shall consist of stainless steel angle, tube and channel shapes of sizes and in configurations indicated on drawings.
- B. All exposed surfaces shall have brushed stainless finish. All assembly surfaces shall have matching and consistent finishes throughout.

2.3 HARDWARE

- A. All clips, straps, hinges, hasps and hardware shall be fabricated from 316 stainless steel as indicated and shall have all sharp edges removed prior to assembly.
- B. All fasteners shall be made of stainless steel and be of tamper-resistant design.
- C. All welds shall be ground smooth and have consistent finish throughout the assembly.

PART 3 – EXECUTION

- A. Provide assemblies at locations and to extent shown on drawings.

- B. Assemblies must be installed so as to allow future temporary disassembly/removal without damage of any components. Reassembly/reinstallation shall not require any welding.
- C. All fasteners involved in disassembly/reinstallation shall be of tamper resistant design. Any specialized tools required for these fasteners shall be provided to owner in duplicate.

END OF SECTION 05750

SECTION 16010 - GENERAL PROVISIONS FOR ELECTRICAL WORK

PART 1 –GENERAL

1.1 SCOPE OF WORK:

- A. Provide labor, material, equipment and services necessary for complete, safe installation of functioning systems in compliance with performance requirements specified and in conformity with all applicable codes and authorities having jurisdiction, including temporary light and power, cutting and patching and in general, the following Technical Specification Sections of these Specific Provisions:

16050	ELECTRICAL – BASIC REQUIREMENTS
16110	RACEWAYS AND BOXES
16120	WIRE AND CABLE: 600V AND BELOW
16130	ELECTRICAL: EXTERIOR UNDERGROUND
16160	PANELBOARDS
16405	SAFETY SWITCHES
16410	OVERCURRENT AND SHORT CIRCUIT PROTECTIVE DEVICES
16430	LOW VOLTAGE SURGE PROTECTION DEVICES
16450	GROUNDING
16520	EXTERIOR LIGHTING

1.2 REFERENCES AND DEFINITIONS:

- A. Refer to Tampa Agreement for definitions applicable to the work of this Section. In addition, the following definitions apply:
1. "Work": labor, materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.
 2. "Wiring": raceway, fittings, wire, boxes and related items.
 3. "Concealed": embedded in masonry or other construction installed in furred spaces within double partitions or hung ceilings, in trenches, in crawl spaces or in enclosures.
 4. "Exposed": not installed underground or "concealed" as defined above.
 5. "Indicated," "Shown," or "noted": as indicated, shown or noted on drawings or specifications.
 6. "Similar" or "equal": equal in materials, weight, size, design and efficiency of specified product.
 7. "Reviewed," "satisfactory," "accepted," or "directed": as reviewed, satisfactory, accepted or directed by or to Engineer.
 8. "Motor Controllers": manual or magnetic starters (with or without switches) individual pushbuttons or hand-off-automatic (HOA) switches controlling the operation of motors.
 9. "Control Devices": automatic sensing and switching devices, such as photoelectric switches and electrodes controlling operation of equipment.

- B. Specifications are of simplified form, and include incomplete sentences, words or phrases, such as, "The Contractor shall," "shall be," "furnish," "provide," "a," "an," "the," and "all" have been omitted for brevity.

1.3 APPLICABLE PUBLICATIONS:

The National Electrical Code and Publications of the Organizations listed below are referenced herein by the abbreviations noted in parentheses, with or without additional identifying symbols. Unless otherwise specified, all work shall be manufactured, tested and installed in accordance with the latest issues of such standards.

- A. American Society for Testing and Materials (ASTM).
- B. Underwriters' Laboratories, Inc. (UL).
- C. Insulated Power Cable Engineers Association (IPCEA).
- D. National Electrical Manufacturers Association (NEMA).
- E. Institute of Electrical and Electronic Engineers (IEEE).
- F. American National Standards Institute, Inc. (ANSI).
- G. National Fire Protection Association (NFPA).
- H. Southern Standard Building Code (SSBC).
- I. Illumination Engineering Society (IES).

1.4 ELECTRICAL CHARACTERISTICS:

- A. Distribution: 120/208 volt, single phase, 3 wire, 60 hertz.

1.5 DRAWINGS:

- A. Electrical drawings considered to be diagrammatic indicating general arrangement of systems and equipment and are not to be used as erection drawings. They do not indicate every fitting, pull box, etc., which may be required to complete the job. Prepare field erection drawings, as required, to ensure proper installation.
- B. Electrical Drawings indicate the general arrangements of circuits and outlets, location of switches, panelboards, conduit and other work. Equipment shall be located uniformly with respect to beams, structures, etc.
- C. For exact locations of structural elements, refer to dimensioned structural drawings. Field measurements take precedence over dimensioned drawings.

1.6 RECORD DRAWINGS:

- A. For requirements refer to Conditions of the Contract.

1. Keep a complete set of all electrical drawings in job site office for showing actual installation of electrical systems and equipment.
2. Use this set of drawings for no other purpose.
3. Where any material, equipment, or system components are installed differently from that shown, indicate differences clearly and neatly using ink or indelible pencil.
4. At project completion, submit record set of drawings (see SP-2.17).

1.7 SUBMITTALS:

- A. Standard Products: Materials and equipment essentially the standard products of a manufacturer regularly engaged in the manufacture of the product. They shall essentially duplicate materials and equipment that have been in satisfactory use for at least two years, except where a longer period is indicated.
- B. A manufacturer's statement indicating compliance with the applicable standard of the American Society for Testing and Materials, National Electrical Manufacturers Association, or other commercial standard, is acceptable.
- C. The Contractor shall provide a letter of concurrence, acquired by the Contractor, from Hillsborough County regarding the attachment of the lighting fixtures, conduit and all other associated entities to the Laurel Street Bridge.

1.8 OPERATION AND MAINTENANCE MANUAL:

- A. Prepare maintenance manuals, and in addition to the requirements specified in General Provisions, include the following information for equipment items:
 1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and catalog numbers of replacement parts.
 2. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.
 3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair and reassembly; aligning and adjusting instructions.
 4. Servicing instructions and lubrication charts and schedules.

PART 2 -PRODUCTS

2.1 QUALITY OF MATERIALS:

- A. New, free from defects and listed by Underwriters' Laboratories, Inc.

2.2 INSERTS AND SUPPORTS:

- A. Stainless steel for supports:

1. Shop fabricate for field assembly using stainless steel bolts.
2. Maximum loading 75 percent of rating.
3. Supports from construction: inserts, beam clamps, steel fishplates (in concrete fill only), cantilever brackets or other means. Submit for review.
4. Grouped lines and services: trapeze hangers or bolted angles or channels.

2.3 PRIME PAINT AND TOUCH UP:

A. Paint:

1. Best grade for its purpose
2. Deliver in original sealed containers
3. Apply in accordance with manufacturer's instructions
4. Colors: as selected.

B. Hot dipped galvanized or dipped in zinc-chromate: outlet boxes junction boxes, conduit hangers, rods, inserts and supports.

C. Red lead or zinc-chromate with finish to match surroundings: marred surfaces of steel equipment iron work.

2.4 LABELING:

A. Nameplates:

1. Engraved phenolic nameplates for switchboards, panelboards and lighting control centers.
2. Pressure embossed label for disconnect switches.
3. Inscription: subject to review, indicating equipment and voltage.
4. Provide for:
 - a. Disconnect Switches
 - b. Panelboard and Load Centers
 - c. Lighting Contactors

B. Panelboard typewritten directories.

PART 3 –EXECUTION

3.1 GENERAL:

- A. Use only thorough, highly skilled, and experienced workmen.
- B. Provide all necessary offsets and crossovers in conduits, raceways, and ducts.
- C. Install exposed conduits parallel to structure to least visibility of pedestrian and vertically plumb, unless otherwise indicated.

3.2 CUTTING AND PATCHING:

- A. Provide cutting, fitting, repairing, patching and finishing of installed work.
 - 1. Include installed work of other sections where it is necessary to disturb such work to permit installation of electrical work
 - 2. Repair or replace existing or new work disturbed.
- B. Before cutting, obtain approval of the City
 - 1. Use only approved methods.
 - 2. Cut all holes neatly and as small as possible to admit work.
 - 3. Do not weaken walls or slabs; locate holes in concrete to miss structural sections.
- C. Locate openings and sleeves to permit neat installation of conduits and equipment.

3.3 PROTECTION OF THE WORK:

- A. Protect the work against damage from all causes. Provide and maintain protective coverings to exclude dirt, dust, paint, etc., from equipment to prevent entrance of dirt or construction material.
- B. Equipment Cleaning: All equipment shall be thoroughly cleaned upon completion of the work. Cleaning shall be in accordance with Conditions of the Contract of these Specifications. All dust, dirt, spatter of paint, and other materials and all stains and discolorations of the factory finish shall be removed. Finishes shall be restored to original condition.
- C. Damage Repair and Replacement: Prior to acceptance of work, repair all damaged equipment, cables, surfaces and finishes equal to new. Replace broken work and damaged conduit with new.
- D. Prevention of Corrosion: All metallic materials shall be protected against corrosion. Exposed metallic parts of outdoor apparatus shall be given a rust-inhibiting treatment and standard finish by the manufacturer. Aluminum where connected to dissimilar metal shall be protected by approved fittings and treatment. All parts such as boxes, bodies, fittings, guards, and miscellaneous parts made of ferrous metals, but not of corrosion-resistant steel, shall be zinc-coated in accordance with ASTM A123 or A153, except where other equivalent protective treatment is specifically approved in writing by the City.

3.4 INSTALLATION:

- A. Install and connect all appliances and equipment as specified and as shown on the contract drawings in accordance with the manufacturer's instructions and recommendations. Furnish and install complete electrical connections recommended by the manufacturer, and as required for

proper operation. Before placing electrical equipment, verify locations, voltage, phase, current rating and type of equipment required from approved shop drawings of the equipment; for Owner furnished equipment verify same from shop drawing or visual inspection of equipment. Except as otherwise shown on the contract drawings, provide a junction box on the wall next to the operating level of the equipment and connect to the equipment with flexible conduit. Plugs and cords shall be replaced, shortened or lengthened to suit the equipment furnished.

- B. Provide all necessary anchoring devices and supports.
 - 1. Use structural supports suitable for equipment.
 - 2. Check loadings and dimensions of equipment with shop drawings.
 - 3. Do not cut, or weld to, bridge structural members.
- C. Verify that equipment will fit support layouts indicated.
 - 1. Where equipment is used, revise indicated supports to fit at no additional cost.
- D. Install equipment to permit easy access for normal maintenance.
 - 1. Maintain easy access to switches, pull boxes, light fixtures, handhole, etc.
 - 2. Relocate items which interfere with access.
- E. Provide tamperproof screws on all light fixtures, device plates, etc.

3.5 COORDINATION:

- A. Interferences between trades must be determined before work is fabricated or installed. The Contractor must thoroughly familiarize himself with all details of the work and working conditions and coordinate the work during the preliminary stages to ensure that actual erection will proceed without such interference. The coordination is of paramount importance; and no request for additional payment will be considered where such request is based upon interference.
- B. Where job conditions require reasonable deviations from contract documents, make such deviations without additional cost to City after obtaining City's approval in writing.
- C. Within the limits indicated on drawings, provide the maximum practicable space for operation, repair, removal and testing of electrical equipment. Verify prior to submission of shop drawings, that each submitted component of electrical equipment will properly fit and function within its allotted space, and will properly interface with the work of other trades.
- D. Conduits and similar items, shall be kept as close as possible to structure, walls and columns to take up a minimum amount of space. Locate such items so that they will not interfere with the intended use of other equipment.
- E. Furnish and install all offsets, fittings and similar items necessary to accomplish the requirements of coordination without additional expense to City.
- F. Electrical systems shall be provided complete to all points of connection and service as shown on drawings.

- G. Do not use equipment exceeding dimensions indicated or arrangements that reduce required clearances.

3.6 EXAMINATION OF EXISTING CONDITIONS:

- A. Visit and carefully examine those portions of the site and/or present bridge affected by this work so as to become familiar with existing conditions and difficulties that will attend the execution of the work before submitting proposals.
- B. Submission of a proposal will be construed as evidence that such examination has been made and later claims for labor, equipment or materials required because of difficulties encountered, which would have been foreseen had such examination been made, will not be recognized.

3.7 CONNECTIONS TO EXISTING WORK:

Plan installation of new work and connections to existing work to insure minimum interference with regular operation of existing facilities.

3.8 MOVING OF EQUIPMENT:

Where necessary, ship in crated sections of size to permit passing through available spaces.

3.9 ACCESSIBILITY:

Group concealed electrical equipment requiring access with equipment freely accessible through access doors.

3.10 NOISE AND VIBRATION:

Exceeding specified limits or due to faulty equipment or workmanship: correct, as directed, without additional cost to the City.

3.11 FIELD QUALITY CONTROL:

- A. Perform indicated tests to demonstrate workmanship, operation, and performance.
 - 1. Conduct tests in presence of Engineer and, if required inspectors of agencies having jurisdiction.
 - 2. Arrange date of tests in advance with Engineer, manufacturer and installer.
 - 3. Furnish or arrange for use of electrical energy, steam, water, diesel fuel or gas required for tests.
 - 4. Furnish all lubricating material required for test.
- B. Repair or replace equipment and systems found inoperative or defective and retest.
 - 1. If equipment or system fails retest, replace it with product conforming with Contract Documents.
 - 2. Continue remedial measures and retests until satisfactory results are obtained.

- C. Test equipment and systems as indicated for each item, unless otherwise recommended by manufacturer.

3.12 FINAL PERFORMANCE TEST:

- A. Perform panel load balance, short circuit and freedom from ground (including ground fault protection where provided), at completion of installation. Provide lighting level report at completion.
- B. Submit results for review.

3.13 ADJUST AND CLEAN:

- A. Inspect all equipment and put in good working order. Adjust light fixtures for proper orientation, tilt, and functionality.
- B. Clean all exposed items.
- C. Where new work occurs in existing areas where no other work has been done, clean area and restore to original condition.
- D. Adjust light fixtures for artwork and sculptures with owner's input before final placement.

3.14 PUTTING SYSTEM IN OPERATION - START UP:

- A. Put all systems into satisfactory operation prior to final acceptance, at time agreed to by Contractor, CITY and Engineer.
- B. Operate all systems in good working for period of 5 working days.

END OF SECTION 16010

SECTION 16050 - ELECTRICAL: BASIC REQUIREMENTS

PART 1 –GENERAL

1.1 SUMMARY

A. Section Includes:

1. Basic requirements for electrical systems.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16120 - Wire and Cable - 600 Volt and Below.
2. Section 16110 - Raceways and Boxes.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Aluminium Association (AA).
2. ASTM International (ASTM):
 - a. A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - b. A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
3. ETL Testing Laboratories (ETL).
4. Institute of Electrical and Electronics Engineers, Inc. (IEEE):
 - a. C2, National Electrical Safety Code (NESC).
5. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
6. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
7. Underwriters Laboratories, Inc. (UL).

B. Where Underwriters Laboratories, Inc. (UL) test procedures have been established for the product type, use UL or ETL Testing Laboratories (ETL) approved electrical equipment and provide with the UL or ETL label.

1.3 DEFINITIONS

A. For the purposes of providing materials and installing electrical work the following definitions shall be used.

1. Outdoor area: Exterior locations where the equipment is normally exposed to the weather and including below grade structures.
2. Highly corrosive and corrosive area: Areas identified on the Drawings where there is a varying degree of spillage or splashing of corrosive materials such as water, wastewater or chemical solutions; or chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes or chemical mixtures.

1.4 SUBMITTALS

A. Shop Drawings:

1. General requirements:
 - a. Provide manufacturer's technical information on products to be used, including product descriptive bulletin.
 - b. Include data sheets that include manufacturer's name and product model number.
 - 1) Clearly identify all optional accessories.
 - c. Acknowledgement that products are UL or ETL listed or are constructed utilizing UL or ETL recognized components.
 - d. Manufacturer's delivery, storage, handling and installation instructions.
 - e. Product installation details.
 - f. See individual Technical Specification sections for any additional requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery

1. Scheduling:
 - a. Schedule delivery of products or equipment as required to allow timely installation and to avoid prolonged storage.
2. Packaging:
 - a. Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.
3. Identification:

- a. Clearly and fully mark and identify as to manufacturer, item, and installation location.
 - 4. Protection and Handling:
 - a. Provide manufacturer's instructions for storage and handling.
 - B. STORAGE
 - 1. Provide methods of storage of products and equipment off the ground.
 - C. Protect nameplates on electrical equipment to prevent defacing.
 - D. Protect nameplates on electrical equipment to prevent defacing.
- 1.6 AREA DESIGNATIONS
- A. Designation of an area will determine the NEMA rating of the electrical equipment enclosures, types of conduits and installation methods to be used in that area.
 - 1. Outdoor areas:
 - a. Wet.
 - b. Also, corrosive and/or hazardous when specifically designated on the Drawings or in the Specific Provisions.

PART 2 –PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, refer to specific Division 16 Specific Provision Sections and specific material paragraphs below for acceptable manufacturers.
- B. Provide all components of a similar type by one (1) manufacturer.

2.2 MATERIALS

- A. Electrical Equipment Support Pedestals and/or Racks:
 - 1. Approved manufacturers:
 - a. Modular strut:
 - 1) Unistrut Building Systems.
 - 2) B-Line.
 - 3) Globe Strut.
 - 2. Material requirements:

- a. Modular strut:
 - 1) Galvanized steel: ASTM A123 or ASTM A153.
 - 2) Stainless steel: AISI Type 316.
 - 3) PVC coated galvanized steel: ASTM A123 or ASTM A153 and 20 mil PVC coating.
 - 4) Aluminum: AA Type 6063-T6.
 - b. Mounting hardware:
 - 1) Galvanized steel.
 - 2) Stainless steel.
 - c. Anchorage per Manufacturers recommendations and as described in the Plans.
- B. Field touch-up of galvanized surfaces.
- 1. Zinc-rich primer.
 - a. One (1) coat, 3.0 mils, ZRC by ZRC Products.

PART 3 –EXECUTION

3.1 INSTALLATION

- A. Install and wire all equipment, including prepurchased equipment, and perform all tests necessary to assure conformance to the Drawings and Specific Provision Sections and ensure that equipment is ready and safe for energization.
- B. Install equipment in accordance with the requirements of:
 - 1. NFPA 70 (NEC).
 - 2. IEEE C2.
 - 3. The manufacturer's instructions.
- C. In general, conduit routing is shown on the Drawings.
 - 1. The Contractor is responsible for routing all conduits including those shown on one-line and control block diagrams and home runs shown on plans.
 - 2. Conduit routings and stub-up locations that are shown are approximate; exact routing to be as required for equipment furnished and field conditions.
- D. When complete branch circuiting is not shown on the Drawings:

1. A homerun indicating panelboard name and circuit number will be shown and the circuit number will be shown adjacent to the additional devices (e.g., light fixture and receptacles) on the same circuit.
 2. The Contractor is to furnish and install all conduit and conductors required for proper operation of the circuit.
 3. The indicated home run conduit and conductor size shall be used for the entire branch circuit.
- E. Do not use equipment that exceed dimensions or reduce clearances indicated on the Drawings or as required by the NFPA 70 (NEC).
- F. Install equipment plumb, square and true with construction features and securely fastened.
- G. Install electrical equipment, including pull and junction boxes, minimum of 3' from any equipment or utility.
- H. Install equipment so it is readily accessible for operation and maintenance, is not blocked or concealed and does not interfere with normal operating and maintenance requirements of other equipment.
- I. Avoid interference of electrical equipment operation and maintenance with structural members, walkway features and equipment of other trades.
1. When it is necessary to adjust the intended location of electrical equipment, unless specifically dimensioned or detailed, the Contractor may make adjustments of up to 3' in equipment location with the Engineer's approval
- J. Provide electrical equipment support system per the following area designations:
1. Wet areas:
 - a. Galvanized system consisting of galvanized steel channels and fittings, nuts and hardware.
 - b. Field touch-up cut ends and scratches of galvanized components with the specified primer during the installation, before rust appears.
 2. Highly corrosive areas:
 - a. PVC coated steel or Fiberglass system consisting of PVC coated steel or Fiberglass channels and fittings with stainless steel nuts and hardware.
- K. Provide all necessary anchoring devices and supports rated for the equipment load based on dimensions and weights verified from approved submittals, or as recommended by the manufacturer.
1. Do not cut, or weld to, building structural members.
 2. Do not mount safety switches or other equipment to equipment enclosures, unless enclosure mounting surface is properly braced to accept mounting of external equipment.

- L. Provide corrosion resistant spacers to maintain 1/4 inch separation between metallic equipment and/or metallic equipment supports and mounting surface in wet areas, on below grade walls and on walls of liquid containment.
- M. Do not place equipment fabricated from aluminum in direct contact with earth or concrete.
- N. Screen or seal all openings into equipment mounted outdoors.
- O. Do not use materials that may cause the walls or roof of a structure to discolor or rust.
- P. Identify electrical equipment and components in accordance with NEC.

3.2 FIELD QUALITY CONTROL

- A. Verify exact installation location and dimensions for connection to electrical equipment, provided by others.
- B. Replace equipment and systems found inoperative or defective and re-test.
- C. The protective coating integrity of support structures and equipment enclosures shall be maintained.
 - 1. Repair galvanized components utilizing a zinc rich paint.
 - 2. Repair painted components utilizing touch up paint provided by or approved by the manufacturer.
 - 3. Repair PVC coated components utilizing a patching compound, of the same material as the coating, provided by the manufacturer of the component.
 - 4. Repair surfaces which will be inaccessible after installation prior to installation.
 - 5. See Specific Provision Section 16110 for requirements for conduits and associated accessories.

END OF SECTION 16050

SECTION 16110 - RACEWAYS AND BOXES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material and installation requirements for:
 - a. Conduits.
 - b. Conduit fittings.
 - c. Conduit supports.
 - d. Pull and junction boxes.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16050 - Electrical: Basic Requirements.
2. Section 16130 - Electrical: Exterior Underground.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. American Iron and Steel Institute (AISI).
2. ASTM International (ASTM):
 - a. A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - b. A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - c. D2564, Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
3. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. RN 1, Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit (IMC).
 - c. TC 2, Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.

- d. TC 3, Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing.
- 4. National Electrical Manufacturers Association/American National Standards Institute (NEMA/ANSI):
 - a. C80.1, Electric Rigid Steel Conduit (ERSC).
 - b. OS 1, Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- 5. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
- 6. Underwriters Laboratories, Inc. (UL):
 - a. 1, Standard for Flexible Metal Conduit.
 - b. 6, Standard for Electrical Rigid Metal Conduit - Steel.
 - c. 50, Enclosures for Electrical Equipment, Non-Environmental Considerations.
 - d. 360, Standard for Liquid-Tight Flexible Steel Conduit.
 - e. 467, Grounding and Bonding Equipment.
 - f. 514A, Metallic Outlet Boxes.
 - g. 514B, Conduit, Tubing, and Cable Fittings.
 - h. 651, Standard for Schedule 40 and 80 Rigid PVC Conduit and Fittings.
 - i. 886, Standard for Outlet Boxes and Fittings for Use in Hazardous (Classified) Locations.

1.3 SUBMITTALS

A. Shop Drawings:

- 1. Product technical data:
 - a. Provide submittal data for all products specified in PART 2 of this Specific Provision Section except:
 - 1) Conduit fittings.
 - 2) Support systems.
 - b. See Specific Provision Section 16050 for additional requirements.
- 2. Fabrication and/or layout drawings:

- a. Identify dimensional size of pull and junction boxes to be used.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. See Specific Provision Section 16050.

PART 2 –PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

1. Rigid metallic conduits:
 - a. Allied Tube and Conduit Corporation.
 - b. Triangle PWC Inc.
 - c. Western Tube and Conduit Corporation.
 - d. Wheatland Tube Company.
 - e. LTV Steel Company.
2. Rigid non-metallic conduit:
 - a. Carlon.
 - b. Cantex.
 - c. Osburn Associates.
3. Flexible conduit:
 - a. AFC Cable Systems.
 - b. Anamet, Inc.
 - c. Electri-Flex.
 - d. Flexible Metal Hose Company.
 - e. International Metal Hose Company.
 - f. Triangle PWC Inc.
 - g. LTV Steel Company.
4. Conduit fittings and accessories:
 - a. Appleton.

- b. Carlon.
 - c. Cantex.
 - d. Crouse-Hinds.
 - e. Killark.
 - f. Osburn Associates.
 - g. OZ Gedney Company.
 - h. RACO.
 - i. Steel City.
 - j. Thomas and Betts.
5. Support systems:
- a. Unistrut Building Systems.
 - b. B-Line Systems Inc.
 - c. Kindorf.
 - d. Minerallac Fastening Systems.
 - e. Caddy.
6. Outlet, pull and junction boxes:
- a. Appleton Electric Co.
 - b. Crouse-Hinds.
 - c. Quazite.
 - d. O-Z/Gedney.
 - e. Steel City.
 - f. Raco.
 - g. Bell.
 - h. Hoffman Engineering Co.
 - i. Wiegmann.
 - j. B-Line Circle AW.

k. Adalet.

l. Rittal.

2.2 RIGID METALLIC CONDUITS

A. Rigid Galvanized Steel Conduit (RGS):

1. Mild steel with continuous welded seam.
2. Metallic zinc applied by hot-dip galvanizing or electro-galvanizing.
3. Threads galvanized after cutting.
4. Internal coating: Baked lacquer, varnish or enamel for a smooth surface.
5. Standards: NEMA/ANSI C80.1, UL 6.

2.3 RIGID NON-METALLIC CONDUIT

A. Schedules 40 (PVC-40):

1. Polyvinyl-chloride (PVC) plastic compound which includes inert modifiers to improve weatherability and heat distribution.
2. Rated for direct sunlight exposure.
3. Fire retardant and low smoke emission.
4. Shall be suitable for use with 90 DegC wire and shall be marked "maximum 90 DegC".
5. Standards: NEMA TC 2, UL 651.

2.4 FLEXIBLE CONDUIT

A. Flexible non-metallic (liquid-tight) conduit (FLEX-NM):

1. Formed of a helically wound spiral of rigid PVC reinforcement embedded within a flexible PVC wall.
2. Layered construction with a smooth seamless inner core of flexible PVC that is bonded to a covering of flexible PVC.
3. Between the layers is a woven nylon mesh for reinforcement.
4. Standard: UL 1660.

2.5 CONDUIT FITTINGS AND ACCESSORIES

A. Fittings for Use with RGS:

1. Locknuts:

- a. Threaded steel or malleable iron.
 - b. Gasketed or non-gasketed.
 - c. Grounding or non-grounding type.
2. Bushings:
 - a. Threaded, insulated metallic.
 - b. Grounding or non-grounding type.
3. Hubs: Threaded, insulated and gasketed metallic for raintight connection.
4. Couplings:
 - a. Threaded straight type: Same material and finish as the conduit with which they are used on.
 - b. Threadless type: Gland compression or self-threading type, concrete tight.
5. Unions: Threaded galvanized steel or zinc plated malleable iron.
6. Conduit bodies (ells and tees):
 - a. Body: Zinc plated cast iron or cast copper free aluminum with threaded hubs.
 - b. Standard and mogul size.
 - c. Cover:
 - 1) Clip-on type with stainless steel screws.
 - 2) Gasketed or non-gasketed galvanized steel, zinc plated cast iron or cast copper free aluminum.
7. Conduit bodies (round):
 - a. Body: Zinc plated cast iron or cast copper free aluminum with threaded hubs.
 - b. Cover: Threaded screw on type, gasketed, galvanized steel, zinc plated cast iron or cast copper free aluminum.
8. Sealing fittings:
 - a. Body: Zinc plated cast iron or cast copper free aluminum with threaded hubs.
 - b. Standard and mogul size.
 - c. With or without drain and breather.

- d. Fiber and sealing compound: UL listed for use with the sealing fitting.
- 9. Expansion couplings:
 - a. 2 IN nominal straight-line conduit movement in either direction.
 - b. Galvanized steel with insulated bushing.
 - c. Gasketed for wet locations.
 - d. Internally or externally grounded.
- 10. Expansion/deflection couplings:
 - a. 3/4 IN nominal straight-line conduit movement in either direction.
 - b. 30-degree nominal deflection from the normal in all directions.
 - c. Metallic hubs, neoprene outer jacket and stainless steel jacket clamps.
 - d. Internally or externally grounded.
 - e. Watertight, raintight and concrete tight.
- 11. Standards: UL 467, UL 514B, UL 886.
- B. Fittings for Use with FLEX-NM:
 - 1. Connector:
 - a. Straight or angle type.
 - b. Metal construction, insulated and gasketed.
 - c. Composed of locknut, grounding ferrule and gland compression nut.
 - d. Liquid tight.
 - 2. Standards: UL 467, UL 514B.
- C. Fittings for Use with Rigid Non-Metallic PVC Conduit:
 - 1. Coupling, adapters and conduit bodies:
 - a. Same material, thickness, and construction as the conduits with which they are used.
 - b. Homogeneous plastic free from visible cracks, holes or foreign inclusions.
 - c. Bore smooth and free of blisters, nicks or other imperfections which could damage the conductor.

2. Solvent cement for welding fittings shall be supplied by the same manufacturer as the conduit and fittings.

3. Standards: ASTM D2564, NEMA TC 3, UL 651, UL 514B.

D. Weather and Corrosion Protection Tape:

1. PVC based tape, 10 mils thick.

2. Protection against moisture, acids, alkalis, salts and sewage and suitable for direct bury.

3. Used with appropriate pipe primer.

2.6 ALL RACEWAY AND FITTINGS

A. Mark Products:

1. Identify the nominal trade size on the product.

2. Stamp with the name or trademark of the manufacturer.

2.7 PULL AND JUNCTION BOXES

A. IP67 Rated:

1. Totally insulated.

2. No knockouts.

3. External mounting flanges.

4. Hinged door and stainless steel screws and clamps.

5. Gasket.

B. NEMA 4X Rated (metallic):

1. Body and cover: 14 GA Type 316 stainless steel.

2. Seams continuously welded and ground smooth.

3. No knockouts.

4. External mounting flanges.

5. Hinged door and stainless steel screws and clamps.

6. Door with oil-resistant gasket.

C. NEMA 4X Rated (non-metallic):

1. Body and cover: Ultraviolet light protected fiberglass-reinforced polyester boxes.

2. No knockouts.
3. External mounting flanges.
4. Hinged door with quick release latches and padlocking hasp.
5. Door with oil resistant gasket.

D. Miscellaneous Accessories:

1. Rigid handles for covers larger than 9 SF or heavier than 25 LBS.
2. Split covers when heavier than 25 LBS.
3. Weldnuts for mounting optional panels and terminal kits.
4. Terminal blocks: Screw-post barrier-type, rated 600 volt and 20 ampere minimum.

E. Standards: NEMA 250, UL 50.

2.8 SUPPORT SYSTEMS

A. Pull or Junction Box Supports:

1. Material requirements.
 - a. Galvanized steel: ASTM A123 or ASTM A153.
 - b. Stainless steel: AISI Type 316.
 - c. PVC coat galvanized steel: ASTM A123 or ASTM A153 and 20 mil PVC coating.

B. Single Conduit and Outlet Box Support Fasteners:

1. Material requirements:
 - a. Zinc plated steel.
 - b. Stainless steel.
 - c. Malleable iron.
 - d. PVC coat malleable iron or steel: 20 mil PVC coating.
 - e. Steel protected with zinc phosphate and oil finish.

PART 3 – EXECUTION

3.1 RACEWAY INSTALLATION – GENERAL

- A. Shall be in accordance with the requirements of:

1. NFPA 70.
 2. Manufacturer instructions.
- B. Size of Raceways:
1. Raceway sizes are shown on the Drawings, if not shown on the Drawings, then size in accordance with NFPA 70.
 2. Unless specifically indicated otherwise, the minimum raceway size shall be:
 - a. Conduit: 3/4 IN.
- C. Field Bending and Cutting of Conduits:
1. Utilize tools and equipment recommended by the manufacturer of the conduit, designed for the purpose and the conduit material to make all field bends and cuts.
 2. Do not reduce the internal diameter of the conduit when making conduit bends.
 3. Prepare tools and equipment to prevent damage to the PVC coating.
 4. Degrease threads after threading and apply a zinc rich paint.
 5. Debur interior and exterior after cutting.
- D. Male threads of conduit systems shall be coated with an electrically conductive anti-seize compound.
- E. The protective coating integrity of conduits, fittings, outlet, pull and junction boxes and accessories shall be maintained.
1. Repair galvanized components utilizing a zinc rich paint.
 2. Repair painted components utilizing touch up paint provided by or approved by the manufacturer.
 3. Repair PVC coated components utilizing a patching compound, of the same material as the coating, provided by the manufacturer of the conduit; or a self-adhesive, highly conformable, cross-linked silicone composition strip, followed by a protective coating of vinyl tape.
 - a. Total nominal thickness: 40 mil.
 4. Repair surfaces which will be inaccessible after installation prior to installation.
- F. Remove moisture and debris from conduit before wire is pulled into place.
1. Pull mandrel with diameter nominally 1/4 IN smaller than the interior of the conduit, to remove obstructions.

2. Swab conduit by pulling a clean, tight-fitting rag through the conduit.
 3. Tightly plug ends of conduit with tapered wood plugs or plastic inserts until wire is pulled.
- G. Only nylon or polyethylene rope shall be used to pull wire and cable in conduit systems.
- H. Where portions of a raceway are subject to different temperatures and where condensation is known to be a problem, as in cold storage areas of buildings or where passing from the interior to the exterior of a building, the raceway shall be sealed to prevent circulation of warm air to colder section of the raceway.
- I. Fill openings in walls, floors, and ceilings and finish flush with surface.

3.2 RACEWAY ROUTING

- A. Raceways shall be routed in the field unless otherwise indicated.
1. Conduit and fittings shall be installed, as required, for a complete system that has a neat appearance and is in compliance with all applicable codes.
 2. Run in straight lines parallel to or at right angles to building lines.
 3. Do not route conduits:
 - a. Through areas of high ambient temperature or radiant heat.
 - b. In suspended concrete slabs.
 4. Conduit shall not interfere with, or prevent access to, piping, valves, ductwork, or other equipment for operation, maintenance and repair.
 5. Provide pull boxes or conduit bodies as needed so that there is a maximum of 360 degrees of bends in the conduit run or in long straight runs to limit pulling tensions.
- B. Maintain minimum spacing between parallel conduit and piping runs in accordance with the following when the runs are greater than 30 FT:
1. Between 125 V, 48 V and 24 Vdc, 2 IN.
 2. Between 600 V and less AC power: 6 IN.
 3. Between process, gas, air and water pipes: 6 IN.
- C. Conduits shall be installed to eliminate moisture pockets.
1. Where water cannot drain to openings, provide drain fittings in the low spots of the conduit run.
- D. Conduit shall not be routed on the exterior of structures except as specifically indicated on the Drawings.

- E. Where sufficient room exists within the housing of roof-mounted equipment, the conduit shall be stubbed up inside the housing.
- F. Provide all required openings in walls, floors, and ceilings for conduit penetration.

3.3 RACEWAY APPLICATIONS

A. Permitted Raceway Types per Wire or Cable Types:

- 1. Power wire or cables: All raceway types.

B. Permitted Raceway Types Per Area Designations:

- 1. Wet areas above ground:
 - a. RGS

C. Permitted Raceway Types Per Routing Locations:

- 1. Direct buried conduits and ductbanks:
 - a. PVC-40.

D. FLEX-NM conduits shall be installed as shown on the Plans.

E. Underground Conduit: See Specific Provision Section 16130.

3.4 CONDUIT FITTINGS AND ACCESSORIES

A. Rigid non-metallic conduit and fittings shall be joined utilizing solvent cement.

- 1. Immediately after installation of conduit and fitting, the fitting or conduit shall be rotated 1/4 turn to provide uniform contact.

B. Install Expansion Fittings:

- 1. Where conduits are exposed to the sun and conduit run is greater than 200 FT.
- 2. Elsewhere as identified on the Drawings.

C. Install Expansion/Deflection Fittings:

- 1. Where conduits enter a structure.
 - a. Except electrical manholes and handholes.
 - b. Except where the ductbank is tied to the structure with rebar.
- 2. Where conduits span structural expansions joints.
- 3. Elsewhere as identified on the Drawings.

- D. Threaded connections shall be made wrench-tight.
- E. Conduit joints shall be watertight:
 - 1. Where subjected to possible submersion.
 - 2. In areas classified as wet.
 - 3. Underground.
- F. Conduit joints shall be watertight:
 - 1. Where subjected to possible submersion.
 - 2. In areas classified as wet.
 - 3. Underground.
- G. Terminate Conduits:
 - 1. In NEMA 4, NEMA 4X and IP67 rated enclosures and junction boxes:
 - a. Watertight, insulated and gasketed hub and locknut or with IP67 rated fittings.
- H. Threadless couplings shall only be used to join new conduit to existing conduit when the existing conduit end is not threaded and it is not practical or possible to cut threads on the existing conduit with a pipe threader.

3.5 CONDUIT SUPPORT

- A. Permitted multi-conduit surface or trapeze type support system per area designations and conduit types:
 - 1. Wet areas:
 - a. Galvanized system consisting of: Galvanized steel channels and fittings, nuts and hardware and conduit clamps.
 - b. Aluminum system consisting of: Aluminum channels, fittings and conduit clamps with stainless steel nuts and hardware.
 - 2. Conduit type shall be compatible with the support system material.
 - a. Stainless steel system may be used with RGS, PVC-40, and FLEX-NM.
 - b. PVC coated galvanized steel system may be used with PVC-40 and FLEX-NM.
- B. Permitted single conduit support fasteners per area designations and conduit types:
 - 1. Wet areas:
 - a. Material: Zinc plated steel, stainless steel and malleable iron.

- b. Types of fasteners: Straps, hangers with bolts, clamps with bolts and bolt on beam clamps.
 - 2. Conduit type shall be compatible with the support fastener material.
 - a. Zinc plated steel, steel protected with zinc phosphate and oil finish and malleable iron fasteners may be used with RGS.
 - b. Stainless steel system may be used with RGS, PVC-40 and FLEX-NM.
 - c. Non-metallic fasteners may be used with PVC-40.
- C. Conduit Support General Requirements:
 - 1. Maximum spacing between conduit supports per NFPA 70.
 - 2. Support conduit from the building structure.
 - 3. Do not support conduit from process, gas, air or water piping; or from other conduits.
 - 4. Provide hangers and brackets to limit the maximum uniform load on a single support to 25 LBS or to the maximum uniform load recommended by the manufacturer if the support is rated less than 25 LBS.
 - a. Do not exceed maximum concentrated load recommended by the manufacturer on any support.
 - b. Conduit hangers:
 - 1) Continuous threaded rods combined with struts or conduit clamps: Do not use perforated strap hangers and iron bailing wire.
 - c. Do not use suspended ceiling support systems to support raceways.
 - d. Hangers in metal roof decks:
 - 1) Utilize fender washers.
 - 2) Not extend above top of ribs.
 - 3) Not interfere with vapor barrier, insulation, or roofing.
 - 5. Conduit support system fasteners:
 - a. Use sleeve-type expansion anchors as fasteners in masonry wall construction.
 - b. Do not use concrete nails and powder-driven fasteners.

3.6 PULL AND JUNCTION BOX INSTALLATION

- A. General:

1. Install products in accordance with manufacturer's instructions.
2. See Specific Provision Section 16050 and the Drawings for area classifications.
3. Fill unused punched-out, tapped, or threaded hub openings with insert plugs.
4. Size boxes to accommodate quantity of conductors enclosed and quantity of conduits connected to the box.

B. Pull and Junction Boxes:

1. Install pull or junction boxes in conduit runs where indicated or required to facilitate pulling of wires or making connections.
 - a. Make covers of boxes accessible.
2. Permitted uses of IP67 and NEMA 4X enclosures:
 - a. Pull or junction box surface mounted in areas designated as wet and/or corrosive.

END OF SECTION 16110

SECTION 16120 - WIRE AND CABLE: 600 VOLT AND BELOW

PART 1 –GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material and installation requirements for:
 - a. Building wire.
 - b. Wire connectors.
 - c. Insulating tape.
 - d. Pulling lubricant.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16050 - Electrical: Basic Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. National Electrical Manufacturers Association (NEMA):
 - a. ICS 4, Industrial Control and Systems: Terminal Blocks.
2. National Electrical Manufacturers Association/Insulated Cable Engineers Association (NEMA/ICEA):
 - a. WC 57/S-73-532, Standard for Control Cables.
 - b. WC 70/S-95-658, Non-Shielded Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
3. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
4. Underwriters Laboratories, Inc. (UL):
 - a. 467, Standard for Safety Grounding and Bonding Equipment.
 - b. 486A, Standard for Safety Wire Connectors and Soldering Lugs for use with Copper Conductors.
 - c. 486C, Standard for Safety Splicing Wire Connections.

- d. 510, Standard for Safety Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape.
- e. 1581, Standard for Safety Reference Standard for Electrical Wires, Cables, and Flexible Cords.

1.3 DEFINITIONS

- A. Building Wire: Single conductor, insulated, with or without outer jacket depending upon type.

1.4 SUBMITTALS

- A. Shop Drawings:

- 1. Product technical data:

- a. Provide submittal data for all products specified in Part 2 of this Specific Provision except:
 - 1) Wire connectors.
 - 2) Insulating tape.
 - 3) Cable lubricant.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. See Specific Provision Section 16050.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

- 1. Building wire, power and control cable:

- a. American Insulated Wire Corporation.
- b. General Cable.
- c. Manhattan/CDT.
- d. Southwire Company.

- 2. Wire connectors:

- a. Burndy Corporation.
- b. Buchanan.

- c. Ideal.
 - d. IIsco.
 - e. 3M Co.
 - f. Teledyne Penn Union.
 - g. Thomas and Betts.
 - h. Phoenix Contact.
3. Insulating and color coding tape:
- a. 3M Co.
 - b. Plymouth Bishop Tapes.
 - c. Red Seal Electric Co.

2.2 MANUFACTURED UNITS

A. Building Wire:

- 1. Conductor shall be copper with 600 V rated insulation.
- 2. Conductors shall be stranded, except for conductors used in lighting and receptacle circuits which may be stranded or solid.
- 3. Surface mark with manufacturers name or trademark, conductor size, insulation type and UL label.
- 4. Conform to NEMA/ICEA WC 70/S-95-658 and UL 83 for type THHN/THWN and THHN/THWN-2 insulation.
- 5. Conform to NEMA/ICEA WC 70/S-95-658 and UL 44 for type XHHW-2 insulation.

B. Wire Connectors:

- 1. Twist/screw on type:
 - a. Insulated pressure or spring type solderless connector.
 - b. 600 V rated.
 - c. Ground conductors: Conform to UL 486C and/or UL 467 when required by local codes.
 - d. Phase and neutral conductors: Conform to UL 486C.
- 2. Compression and mechanical screw type:

- a. 600 V rated.
 - b. Ground conductors: Conform to UL 467.
 - c. Phase and neutral conductors: Conform to UL 486A.
- 3. Terminal block type:
 - a. High density, screw-post barrier-type with white center marker strip.
 - b. 600 V and ampere rating as required, for power circuits.
 - c. 600 V, 20 ampere rated for control circuits.
 - d. 300 V, 15 ampere rated for instrumentation circuits.
 - e. Conform to NEMA ICS 4 and UL 486A.
- C. Insulating and Color Coding Tape:
 - 1. Pressure sensitive vinyl.
 - 2. Premium grade.
 - 3. Heat, cold, moisture, and sunlight resistant.
 - 4. Thickness, depending on use conditions: 7, 8.5, or 10 mil.
 - 5. For cold weather or outdoor location, tape must also be all-weather.
 - 6. Color:
 - a. Insulating tape: Black.
 - b. Color coding tape: Fade-resistant color as specified herein.
 - 7. Comply with UL 510.
- D. Pulling Lubricant: Cable manufacturer's standard containing no petroleum or other products which will deteriorate insulation.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Permitted Usage of Insulation Types:
 - 1. Type XHHW-2:
 - a. Building wire at outdoor wet and corrosive locations.
 - b. Building wire in conduit below grade.

B. Color Code All Wiring as Follows:

1. Building wire:

	240 V, 208 V, 240/120 V, 208/120 V	480 V, 480/277 V
Phase 1	Black	Brown
Phase 2	Red *	Orange
Phase 3	Blue	Yellow
Neutral	White	White or Gray
Ground	Green	Green

* Orange when it is a high leg of a 120/240 V Delta system.

- a. Conductors No. 6 AWG and smaller: Insulated phase, neutral and ground conductors shall be identified by a continuous colored outer finish along its entire length.
- b. Conductors larger than No. 6 AWG:
 - 1) Insulated phase and neutral conductors shall be identified by one (1) of the following methods:
 - a) Continuous colored outer finish along its entire length.
 - b) 3 IN of colored tape applied at the termination.
 - 2) Insulated grounding conductor shall be identified by one (1) of the following methods:
 - a) Continuous green outer finish along its entire length.
 - b) Stripping the insulation from the entire exposed length.
 - c) Using green tape to cover the entire exposed length.
 - 3) The color coding shall be applied at all accessible locations, including but not limited to: Junction and pull boxes, wireways, manholes and handholes.

C. Install all wiring in raceway unless otherwise indicated on the Drawings.

1. Contractor is responsible for making the required adjustments in conductor and raceway size, in accordance with all requirements of the NEC, including but not limited to:
 - a. Up sizing conductor size for required ampacity de-ratings for the number of current carrying conductors in the raceway.
 - b. The neutral conductor may be shared on sequential circuits. Up sizing raceway size for the size and quantity of conductors.

- D. Splices and terminations for the following circuit types shall be made in the indicated enclosure type using the indicated method.
1. Feeder and branch power circuits:
 - a. Device outlet boxes:
 - 1) Twist/screw on type connectors.
 - b. Junction and pull boxes and wireways:
 - 1) Twist/screw on type connectors for use on No. 8 and smaller wire.
 - 2) Compression, mechanical screw or terminal block or terminal strip type connectors for use on No. 6 AWG and larger wire.
- E. Insulating Tape Usage:
1. For insulating connections of No. 8 AWG wire and smaller: 7 mil vinyl tape.
 2. For insulating splices and taps of No. 6 AWG wire or larger: 10 mil vinyl tape.
 3. For insulating connections made in cold weather or in outdoor locations: 8.5 mil, all weather vinyl tape.
- F. Color Coding Tape Usage: For color coding of conductors.

END OF SECTION 16120

SECTION 16130 - ELECTRICAL: EXTERIOR UNDERGROUND

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material and installation requirements for:
 - a. Underground conduits and ductbanks.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16450 - Grounding.
2. Section 16110 - Raceways and Boxes.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. Standard Specifications for Highway Bridges.
2. ASTM International (ASTM):
 - a. A536, Standard Specification for Ductile Iron Castings.
3. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).

1.3 DEFINITIONS

A. Direct-buried conduit(s):

1. Individual (single) underground conduit.
2. Multiple underground conduits, arranged in one or more planes, in a common trench.

1.4 SUBMITTALS

A. Shop Drawings:

1. Product technical data:
 - a. Provide submittal data for all products specified in PART 2 of this Specific Provision Section.

PART 2 –PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

1. Ductbank accessories:
 - a. Unistrut.
 - b. Condux International, Inc.
 - c. Underground Devices, Inc.

2.2 UNDERGROUND CONDUIT AND ACCESSORIES

A. Conduit: See Specific Provision Section 16110.

B. Duct Spacers/Supports:

1. High density polyethylene or high impact polystyrene.
2. Interlocking.
3. Provide 2 IN minimum spacing between conduits.
4. Accessories, as required:
 - a. Hold down bars.
 - b. Ductbank strapping.

PART 3 – EXECUTION

3.1 GENERAL

A. Drawings indicate the intended location of handholes and routing of ductbanks and direct buried conduit.

1. Field conditions may affect actual routing.

B. Install products in accordance with manufacturer's instructions.

3.2 UNDERGROUND CONDUITS

A. General Installation Requirements:

1. Direct-buried conduit(s):
 - a. Area/Roadway lighting.

- b. Under deck lighting power supplies.
 - c. Lighting poles receptacles
- 2. Do not place concrete or soil until conduits have been observed by the Engineer.
- 3. Ductbanks shall be sloped a minimum of 4 IN per 100 FT or as detailed on the Drawings.
 - a. Low points shall be at handholes.
- 4. During construction and after conduit installation is complete; plug the ends of all conduits.
- 5. Provide conduit supports and spacers.
 - a. Place supports and spacers for rigid nonmetallic conduit on maximum centers as indicated for the following trade sizes:
 - 1) 1 IN and less: 3 FT.
 - 2) 1-1/4 to 3 IN: 5 FT.
 - 3) 3-1/2 to 6 IN: 7 FT.
 - b. Securely anchor conduits to supports and spacers to prevent movement during placement of concrete or soil.
- 6. Stagger conduit joints at intervals of 6 IN vertically.
- 7. Make conduit joints watertight and in accordance with manufacturer's recommendations.
- 8. Furnish manufactured bends at end of runs.
 - a. Minimum radius of 18 IN for conduits less than 3 IN trade size and 36 IN for conduits 3 IN trade size and larger.
- 9. Field cuts requiring tapers shall be made with the proper tools and shall match factory tapers.
- 10. After the conduit run has been completed:
 - a. Prove joint integrity and test for out-of-round duct by pulling a test mandrel through each conduit.
 - 1) Test mandrel:
 - a) Length: Not less than 12 IN
 - b) Diameter: Approximately 1/4 IN less than the inside diameter of the conduit.

- b. Clean the conduit by pulling a heavy duty wire brush mandrel followed by a rubber duct swab through each conduit.
- 11. Pneumatic rodding may be used to draw in lead wire.
 - a. Install a heavy nylon cord free of kinks and splices in all unused new ducts.
 - b. Extend cord 3 FT beyond ends of conduit.
- 12. Transition from rigid non-metallic conduit to rigid PVC coated metallic conduit, prior to last bend going above ground.
 - a. Except rigid non-metallic conduit may be extended directly to handholes, pad mounted transformer boxes and other exterior pad mounted electrical equipment where the conduit is concealed within the enclosure.
 - b. Terminate rigid PVC conduits with end bells.
 - c. Terminate steel conduits with insulated bushings.
- 13. Place detectable warning tape in trench directly over ductbanks, direct-buried conduit, and direct-buried wire and cable.
- 14. Placement of conduits stubbing into handholes and manholes shall be located to allow for proper bending radiuses of the cables.
- B. Direct-Buried Conduit(s):
 - 1. Install so that the top of the uppermost conduit, at any point:
 - a. Is not less than 24 IN below grade.
 - b. Is below pavement sub-grading.
 - 2. Provide a uniform minimum clearance of 6 IN between conduits or as required in Special Provision Section SP 25.05 for different cabling types.
- C. Conduits embedded in concrete structure (e.g., sidewalks, bridge decks) where shown on the Contract Drawings:
 - 1. Shall not be considered to replace structurally the displaced concrete except as indicated in the following:
 - a. Shall not be larger in outside diameter than one-third the thickness of concrete.
 - b. Shall have a minimum spacing of 3 DIA OC.
 - c. In reinforced concrete construction:
 - a) Place conduit after reinforcing steel has been laid.

- b) The reinforcement steel shall not be displaced by the conduit.
- c) Provide a minimum of 1-1/2 IN of cover over conduit.

END OF SECTION 16130

SECTION 16160 – PANELBOARDS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Lighting and appliance panelboards.

B. Related Specification Sections include but are not necessarily limited to:

1. Section 16010 - General Provisions for Electrical Work
2. Section 16050 - Electrical: Basic Requirements.
3. Section 16410 - Overcurrent and Short Circuit Protective Devices.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. PB 1, Panelboards.
2. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
3. Underwriters Laboratories, Inc. (UL):
 - a. 50, Enclosures for Electrical Equipment, Non-Environmental Considerations.
 - b. 67, Standard for Panelboards.

1.3 SUBMITTALS

A. Shop Drawings:

1. Product technical data.
 - a. Provide submittal data for all products specified in PART 2 of this Specification Section.
 - b. See Specification Section 16050 for additional requirements.
2. Fabrication and/or layout drawings:

- a. Panelboard layout with alphanumeric designation, branch circuit breakers size and type, as indicated in the panelboard schedules.
- B. Operation and Maintenance Manuals:
 - 1. Panelboard schedules with as-built conditions.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

- 1. Cutler-Hammer.
- 2. General Electric Company.
- 3. Square D Company.
- 4. Siemens.

2.2 MANUFACTURED UNITS

- A. Standards: NEMA PB 1, NFPA 70, UL 50, UL 67.

- B. Ratings:

- 1. Current, voltage, number of phases, number of wires as indicated on the Drawings.
- 2. Panelboards rated 240 Vac or less: 10,000 amp minimum short circuit rating or as indicated in the schedule.
- 3. Service Entrance Equipment rated when indicated on the Drawings.

- C. Construction:

- 1. Interiors factory assembled and designed such that switching and protective devices can be replaced without disturbing adjacent units and without removing the main bus connectors.
- 2. Multi-section panelboards: Feed-through or sub-feed lugs.
- 3. Main lugs: Solderless type approved for copper and aluminum wire.

- D. Bus Bars:

- 1. Main bus bars:
 - a. Plated aluminum or copper sized to limit temperature rise to a maximum of 65 DegC above an ambient of 40 DegC.

- b. Drilled and tapped and arranged for sequence phasing of the branch circuit devices.
 - 2. Ground bus and isolated ground bus, when indicated on the Drawings: Solderless mechanical type connectors.
 - 3. Neutral bus bars: Insulated 100 percent rated or 200 percent rated, when indicated on the Drawings and with solderless mechanical type connectors.
- E. Enclosure:
- 1. Boxes: Code gage galvanized steel, furnish without knockouts.
 - 2. Trim assembly: Code gage steel finished with rust inhibited primer and manufacturers standard paint inside and out.
 - 3. Lighting and appliance panelboard:
 - a. Trims supplied with hinged door over all circuit breaker handles.
 - b. Trims for surface mounted panelboards, same size as box.
 - c. Doors lockable with corrosion resistant chrome-plated combination lock and catch, all locks keyed alike.
 - d. Nominal 20 IN wide and 5-3/4 IN deep with gutter space in accordance with NEC.
 - e. Clear plastic cover for directory card mounted on the inside of each door.
 - f. NEMA 1 rated: Door gasketed.
- F. Overcurrent and Short Circuit Protective Devices:
- 1. Main overcurrent protective device:
 - a. Molded case circuit breaker.
 - 2. Branch overcurrent protective devices:
 - a. Mounted molded case circuit breaker.
 - 3. See Section SP-25.08 for overcurrent and short circuit protective device requirements.
 - 4. Factory installed.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install as indicated on the Drawings, in accordance with the NEC, and in accordance with manufacturer's instructions.

- - B. Support panelboard enclosures from wall studs or modular channels support structure, per Specification Section 16050
 - C. Provide NEMA 4X rated enclosure as indicated on the Drawings.
 - D. Provide each panelboard with a typed directory:
 - 1. Identify all circuit locations in each panelboard with the load type and location served.

END OF SECTION 16160

SECTION 16405 - SAFETY SWITCHES

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Safety switches.
- B. Related Specific Provision Sections include but are not necessarily limited to:
 - 1. Section 16050 - Electrical: Basic Requirements.
 - 2. Section 16410 - Overcurrent and Short Circuit Protective Devices.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. KS 1, Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).
 - 2. Underwriters Laboratories, Inc. (UL):
 - a. 98, Enclosed and Dead-Front Switches.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Product technical data:
 - a. Provide submittal data for all products specified.
 - b. Provide a table that associates safety switch model number with connected equipment tag number.
 - c. See Specific Provision Section 16050 for additional requirements.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following safety switch manufacturers are acceptable:
 - 1. Cutler-Hammer.

2. General Electric Company.
3. Square D Company.
4. Siemens.
5. Appleton Electric Company.
6. Crouse-Hinds.
7. Killark.

2.2 SAFETY SWITCHES

A. General:

1. Non-fusible or fusible as indicated on the Drawings.
2. Suitable for service entrance when required.
3. NEMA Type HD heavy-duty construction.
4. Switch blades will be fully visible in the OFF position with the enclosure door open.
5. Quick-make/quick-break operating mechanism.
6. Deionizing arc chutes.
7. Manufacture double-break rotary action shaft and switchblade as one (1) common component.
8. Clear line shields to prevent accidental contact with line terminals.
9. Operating handle:
 - a. Red and easily recognizable.
 - b. Padlockable in the OFF position
 - c. Interlocked to prevent door from opening when the switch is in the ON position with a defeater mechanism.

B. Ratings:

1. Voltage and amperage: As indicated on the Drawings.
2. Short circuit with stand:
 - a. Non-fused: 10,000A.
 - b. Fused: 200,000A.

- C. Accessories, when indicated on the Drawings:
 - 1. Neutral kits.
 - 2. Ground lug kits.
 - 3. Auxiliary contact kits with 1 N.O. and 1 N.C. contact.
- D. Enclosures:
 - 1. NEMA 4X S.S. rated:
 - a. Body and cover: Type 316 stainless steel.
 - b. No knockouts, external mounting flanges, hinged and gasketed door.
- E. Overcurrent and short circuit protective devices:
 - 1. See Specific Provision Section 16410 for overcurrent and short circuit protective device requirements.
- F. Standards: NEMA KS 1, UL 98.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install as indicated and in accordance with manufacturer's instructions and recommendations.
- B. Install switches adjacent to the equipment they are intended to serve unless otherwise indicated on the Drawings.
- C. Permitted uses of NEMA 4X metallic S.S. enclosure:
 - 1. Surface mounted in areas designated as wet and/or corrosive.

END OF SECTION 16405

SECTION 16410 - OVERCURRENT AND SHORT CIRCUIT PROTECTIVE DEVICES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Low voltage circuit breakers.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16050 - Electrical: Basic Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Institute of Electrical and Electronics Engineers, Inc. (IEEE):
 - a. C37.13, Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures.
 - b. C37.16, Low-Voltage Power Circuit Breakers and AC Power Circuit Protectors - Preferred Ratings, Related Requirements, and Application Recommendations.
 - c. C37.17, Trip Devices for AC and General Purpose DC Low Voltage Power Circuit Breakers.
2. National Electrical Manufacturers Association (NEMA):
 - a. AB 1, Molded-Case Circuit Breakers, Molded Case Switches, and Circuit-Breaker Enclosures. (Equivalent to UL 489)
3. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
4. Underwriters Laboratories, Inc. (UL):
 - a. 489, Standard for Safety Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures.
 - b. 943, Standard for Safety for Ground-Fault Circuit-Interrupters.
 - c. 1066, Standard for Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures.

1.3 SUBMITTALS

A. Shop Drawings:

1. Product technical data including:
 - a. Provide submittal data for all products specified in PART 2 of this Specification Section.
 - b. See Specific Provision Section 16050 for additional requirements.

PART 3 – PRODUCTS

3.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

1. Circuit breakers:
 - a. Cutler-Hammer.
 - b. General Electric Company.
 - c. Square D Company.
 - d. Siemens.
2. Fuses:
 - a. Bussmann, Inc.
 - b. Littelfuse, Inc.
 - c. Gould Shawmut.

3.2 CIRCUIT BREAKERS

A. Molded Case Type:

1. General:
 - a. Standards: NEMA AB 1, UL 489.
 - b. Unit construction.
 - c. Over-center, toggle handle operated.
 - d. Quick-make, quick-break, independent of toggle handle operation.
 - e. Manual and automatic operation.
 - f. All poles open and close simultaneously.
 - g. Three (3) position handle: On, off and tripped.
 - h. Molded-in ON and OFF markings on breaker cover.

- i. One-, two- or three-pole as indicated on the Drawings.
 - j. Current and interrupting ratings as indicated on the Drawings.
 - k. Bolt on type.
2. Thermal magnetic type:
- a. Inverse time overload and instantaneous short circuit protection by means of a thermal magnetic element.
 - b. Frame size 150 amp and below:
 - 1) Non-interchangeable, non-adjustable thermal magnetic trip units.
 - c. Frame sizes 225 to 400 amp (trip settings less than 400A):
 - 1) Interchangeable and adjustable instantaneous thermal magnetic trip units.
 - d. Ground Fault Circuit Interrupter (GFCI) Listed:
 - 1) Standard: UL 943.
 - 2) One- or two-pole as indicated on the Drawings.
 - 3) Class A ground fault circuit.
 - 4) Trip on 5 mA ground fault (4-6 mA range).

PART 4 – EXECUTION

4.1 INSTALLATION

- A. Current and interrupting ratings as indicated on the Drawings.
- B. Series rated systems not acceptable.
- C. Devices shall be ambient temperature compensated.
- D. Circuit Breakers:
 - 1. Molded case circuit breakers shall incorporate the following, unless indicated otherwise on the Drawings:
 - a. Frame sizes 400 amp and less with trip setting less than 400A shall be thermal magnetic type.

4.2 FIELD QUALITY CONTROL

- A. Ground Fault Protection System:

1. Single source system:
 - a. Main breaker using the residual sensing method system.
 - b. Main and feeder breakers: Utilize four (4) individual current sensors; the phase sensors are integral to the circuit breaker and the neutral sensor is external to the circuit breaker.

END OF SECTION 16410

SECTION 16430 - LOW VOLTAGE SURGE PROTECTION DEVICES (SPD)

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type 2 SPD - High exposure locations (service entrance equipment, switchgear, switchboard, panelboard, motor control center, or control panels), externally mounted.
2. Type 5 SPD - Medium or low exposure locations at individual equipment locations, external, parallel connection.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Institute of Electrical and Electronics Engineers, Inc. (IEEE):
 - a. C62.41, Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits.
 - b. C62.41.1, Guide on the Surge Environment in Low-Voltage (1000V and Less) AC Power Circuits.
 - c. C62.41.2, Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and Less) AC Power Circuits.
 - d. C62.45, Recommended Practice on Surge Testing For Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits.
2. Military Standard:
 - a. MIL-STD-220B, Method of Insertion-Loss Measurement.
3. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. LS 1, Low Voltage Surge Protective Devices.
4. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
5. Underwriters Laboratories, Inc. (UL):
 - a. 1283, Standard for Electromagnetic Interference Filters.
 - b. 1449, Standard for Safety Transient Voltage Surge Suppressors.

B. Qualifications:

1. Provide devices from a manufacturer who has been regularly engaged in the development, design, testing, listing and manufacturing of SPDs of the types and ratings required for a period of 10 years or more and whose products have been in satisfactory use in similar service.
 - a. Upon request, suppliers or manufacturers shall provide a list of not less than three (3) customer references showing satisfactory operation.

1.3 DEFINITIONS

A. Clamping Voltage:

1. The applied surge shall be induced at the 90 degree phase angle of the applied system frequency voltage.
2. The voltage measured at the end of the 6 IN output leads of the SPD and from the zero voltage reference to the peak of the surge.

B. Let-Through Voltage:

1. The applied surge shall be induced at the 90 degree phase angle of the applied system frequency voltage.
2. The voltage measured at the end of the 6 IN output leads of the SPD and from the system peak voltage to the peak of the surge.

C. Maximum Continuous Operating Voltage (MCOV): The maximum steady state voltage at which the SPD device can operate and meet its Special Provision within its rated temperature.

D. Maximum Surge Current:

1. The maximum 8 x 20 microsecond surge current pulse the SPD device is capable of surviving on a single-impulse basis without suffering either performance degradation or more than 10 percent deviation of clamping voltage at a specified surge current.
2. Listed by mode, since number and type of components in any SPD may vary by mode.

E. Protection Modes: This parameter identifies the modes for which the SPD has directly connected protection elements, i.e., line-to-neutral (L-N), line-to-line (L-L), line-to-ground (L-G), neutral-to-ground (N-G).

F. Surge Current per Phase:

1. The per phase rating is the total surge current capacity connected to a given phase conductor.
 - a. For example, a wye system surge current per phase would equal L-N plus L-G; a delta system surge current per phase would equal L-L plus L-G.
 - b. The N-G mode is not included in the per phase calculation.

- G. System Peak Voltage: The electrical equipment supply voltage sine wave peak (i.e., for a 480/277 V system the L-L peak voltage is 679V and the L-N peak voltage is 392 V).

1.4 SUBMITTALS

A. Shop Drawings:

1. Product technical data including:
 - a. Manufacturer's qualifications.
 - b. Standard catalog cut sheet.
 - c. Electrical and mechanical drawing showing unit dimensions, weights, mounting provisions, connection details and layout diagram of the unit.
 - d. Testing procedures and testing equipment data.
 - e. Create a Product Data Sheet for each different model number of SPD provided (i.e., Model XYZ with disconnect and Model XYZ without disconnect, each require a Product Data Sheet).
 - 1) Data in the Product Data Sheet heading:
 - a) SPD Type Number per PART 2 of the Specific Provisions.
 - b) Manufacturer's Name.
 - c) Product model number.
 - 2) Data in the Product Data Sheet body:
 - a) Column one: Specified value/feature of every paragraph of PART 2 of the Specific Provisions.
 - b) Column two: Manufacturer's certified value confirming the product meets the specified value/feature.
 - c) Name of the nationally recognized testing laboratory that preformed the tests.
 - d) Warranty information.
 - 3) Data in the Product Data Sheet closing:
 - a) Signature of the manufacturer's official (printed and signed).
 - b) Title of the official.
 - 4) Date of signature.

1.5 WARRANTY

- A. Minimum of a five (5) year Warranty from date of shipment against failure when installed in compliance with applicable national/local electrical codes and the manufacturer's installation, operation and maintenance instructions.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Standards: IEEE C62.41.1, IEEE C62.41.2, IEEE C62.45, NEMA LS 1, MIL-STD 220B, UL 1283, UL 1449.

2.2 TYPE 2 SPD

- A. Product:
 - 1. SPD tag number or electrical equipment tag number SPD is connected to load center "A" main breaker.
 - 2. Externally mounted next to service entrance equipment, switchgear, switchboards, MCCs, or control panel.
 - 3. Hybrid solid-state high performance suppression system.
 - a. Do not use suppression system with gas tubes, spark gaps or other components which might short or crowbar the line resulting in interruption of normal power flow to connected loads.
 - 4. Do not connect multiple SPD modules in series to achieve the specified performance.
 - 5. Designed for parallel connection.
 - 6. Enclosure:
 - a. Metallic NEMA 4 or 12 for interior locations.
 - b. Metallic NEMA 4 or 4X for exterior locations.
 - 7. Field connection:
 - a. Mechanical or compression lugs for each phase, neutral and ground that will accept #10 through #1/0 conductors.
 - b. Preinstalled lead conductors: Size per manufacturer, length as required with a maximum of 5 FT.
 - 8. Device monitor:
 - a. Long-life, solid state, externally visible indicators and Form C dry contact(s) that monitor the on-line status of each mode of the units suppression filter system or power loss in any of the phase.

- b. A fuse status only monitor system is not acceptable.
- 9. Accessories (when specifically specified): Unit mounted disconnect switch.
- B. Operating Voltage: Nominal unit operating voltage and configuration as indicated on the Drawings.
- C. Modes of Protection: All modes.
 - 1. Three phase (delta): L-L, L-G.
 - 2. Three phase (wye): L-N, L-L, L-G and N-G.
 - 3. Single phase (2 pole): L-L, L-N, L-G and N-G.
 - 4. Single phase: L-N, L-G and N-G.
- D. Maximum Continuous Operating Voltage: Less than 130 percent of system peak voltage.
- E. Operating Frequency: 45 to 65 Hz.
- F. Short Circuit Rating: Equal to or greater than rating of equipment SPD is connected to.
- G. Maximum Surge Current: 240,000 A per phase, 120,000 A per mode minimum.
- H. Minimum Repetitive Surge Current Capacity: 4000 IEEE C High waveform impulses with no degradation of more than 10 percent deviation of the clamping voltage.
- I. SPD Protection:
 - 1. Integral unit level and/or component level overcurrent fuses and sustained overvoltage thermal cutout device.
 - 2. An IEEE C High waveforms shall not cause the fuse to open and render the SPD inoperable.
- J. Maximum Clamping Voltages: Dynamic test at the 90 degree phase angle including 6 IN lead length and measured from the zero voltage reference:

IEEE C62.41				
System Voltage	Test Mode	C High V & I Wave	B Combination Wave	UL 1449
L-L < 250 V	L-L	1470 V	1000 V	800 V
L-N < 150 V	L-N	850 V	600 V	500 V
	L-G	1150 V	800 V	600 V
	N-G	1150 V	800 V	600 V
L-L > 250 V	L-L	2700 V	2000 V	1800 V
L-N > 150 V	L-N	1500 V	1150 V	1000 V
	L-G	2000 V	1550 V	1200 V
	N-G	2000 V	1550 V	1200 V

- .K. EMI-RFI Noise Rejection: Attenuation greater than 30 dB for frequencies between 100 kHz and 100 MHz.

2.3 TYPE 5 SPD

A. Product:

1. SPD tag number or electrical equipment tag number SPD is connected to power supplies.
2. Externally mounted next to equipment or internally to control panel for point-of-use loads.
3. Hybrid solid state high performance suppression system.
 - a. Do not use gas tubes, spark gaps or other suppression system components which might short or crowbar the line resulting in interruption of normal power flow to connected loads.
4. Designed for parallel connection.
5. Enclosure:
 - a. Metallic NEMA 4 or 12 for interior locations.
 - b. Metallic NEMA 4 or 4X for exterior locations.
6. Field connection:
 - a. Mechanical or compression lugs for each phase, neutral and ground that will accept #10 through #1/0 conductors.
 - b. Preinstalled lead conductors: Size per manufacturer, length as required with a maximum of 2 FT.
7. Device monitor:
 - a. Long-life, solid state, externally visible indicators and Form C dry contact(s) that monitor the on-line status of each mode of the units suppression filter system or power loss in any of the phase.
 - b. A fuse status only monitor system is not acceptable.
8. Accessories (when specifically specified): Unit mounted disconnect switch.

B. Operating Voltage: Nominal unit operating voltage and configuration as indicated on the Drawings.

C. Modes of Protection: All modes.

1. Three phase (delta): L-L, L-G.
2. Three phase (wye): L-N, L-L, L-G and N-G.
3. Single phase (2 pole): L-L, L-N, L-G and N-G.
4. Single phase: L-N, L-G and N-G.

- D. Maximum Continuous Operating Voltage: Less than 130 percent of system peak voltage.
- E. Operating Frequency: 45 to 65 Hz.
- F. Short Circuit Rating: Equal to or greater than rating of equipment SPD is connected to.
- G. Maximum Surge Current: 120,000 A per phase, 60,000 A per mode minimum.
- H. Minimum Repetitive Surge Current Capacity: 4000 IEEE C High or B combination waveform impulses with no degradation of more than 10 percent deviation of the clamping voltage.
- I. SPD Protection:
 - 1. Integral unit level and/or component level overcurrent fuses and sustained overvoltage thermal cutout device.
 - 2. An IEEE B combination wave shall not cause the fuse to open and render the SPD inoperable.
- J. Maximum Clamping Voltages: Dynamic test at the 90 degree phase angle including 6 IN lead length and measured from the zero voltage reference:

IEEE C62.41				
System Voltage	Test Mode	B Comb. Wave	B Ring Wave	UL 1449
L-L < 250 V	L-L	1000 V	700 V	800 V
L-N < 150 V	L-N	600 V	400 V	500 V
	L-G	800 V	550 V	600 V
	N-G	800 V	550 V	600 V
L-L > 250 V	L-L	2000 V	1400 V	1800 V
L-N > 150 V	L-N	1150 V	800 V	1000 V
	L-G	1550 V	1000 V	1200 V
	N-G	1550 V	1000 V	1200 V

- K. EMI-RFI Noise Rejection: Attenuation greater than 30 dB for frequencies between 100 kHz and 100 MHz.

2.4 SOURCE QUALITY CONTROL

- A. SPD approvals and ratings shall be obtained by manufacturers from nationally recognized testing laboratories.
- B. The SPD are to be tested as a complete SPD system including:
 - 1. Integral unit level and/or component level fusing.
 - 2. Neutral and ground shall not be bonded during testing.
 - 3. 6 IN lead lengths.
 - 4. Integral disconnect switch when provided.

- C. The "as installed" SPD system including the manufacturers recommended circuit breaker, the SPD is connected to, will not open when tested with a IEEE C3 combination waveform.
- D. Tests to be performed in accordance with IEEE C62.45:
 - 1. Clamping voltage performance testing using IEEE C62.41 Category waveforms.
 - 2. Single pulse surge current capacity test.
 - 3. Repetitive surge current capacity testing.
 - 4. Spectrum analysis for EMI-RFI noise rejection.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Type 2, 4 and 5 SPD:
 - 1. Mounting options:
 - a. On wall or support structure adjacent to the equipment to be protected with leads routed through conduit.
 - b. Nipple connection directly to the equipment to be protected.
 - 2. Install leads as short and straight as possible.
 - 3. Maximum lead length: 5 FT.
 - 4. Minimum lead size:
 - a. Type 2 and 4 SPD: #2 stranded AWG.
 - b. Type 5: #10 stranded AWG.
 - 5. When conduit connection is used, provide a minimum of four (4) twists per foot in the lead conductors and install in NEC sized conduit.
 - 6. Connect leads to the equipment to be protected by one (1) of the following means:
 - a. Through a circuit breaker or molded case switch mounted in the equipment.
 - 1) Use manufacturer recommended circuit breaker size.
 - b. Directly to the protected equipment bus, when SPD has integral disconnect switch.
 - c. To the load side of field mounted equipment's local disconnect switch.

- 1) Provide taps or lugs as required to provide a UL and NEC compliant connection.

<i>Equipment to be Protected</i>		<i>SPD Type</i>	<i>Integral Disconnect (Yes/No)</i>	<i>Voltage</i>	<i>Short Circuit Rating</i>
<i>1</i>					
<i>2</i>					
<i>3</i>					
<i>4</i>					

END OF SECTION 16430

SECTION 16450 – GROUNDING

PART 1 –GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material and installation requirements for grounding system(s).

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16050 - Electrical: Basic Requirements.
2. Section 16120 - Wire and Cable - 600 Volt and Below.
3. Section 16110 - Raceways and Boxes.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. ASTM International (ASTM):

- a. B8, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.

2. Institute of Electrical and Electronics Engineers, Inc. (IEEE):

- a. 837, Standard for Qualifying Permanent Connections Used in Substation Grounding.

3. National Fire Protection Association (NFPA):

- a. 70, National Electrical Code (NEC).
 - 1) Article 250, Grounding and Bonding.

4. Underwriters Laboratories, Inc. (UL):

- a. 467, Grounding and Bonding Equipment.

B. Assure ground continuity is continuous throughout the entire Project.

1.3 SUBMITTALS

A. Shop Drawings:

1. Product technical data.

- a. Provide submittal data for all products specified in PART 2 of this Specific Provision Section except:

- 1) Grounding clamps, terminals and connectors.
- 2) Exothermic welding system.

PART 2 –PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

1. Ground rods and bars and grounding clamps, connectors and terminals:
 - a. Burndy.
 - b. Harger Lightning Protection.
 - c. Heary Brothers.
 - d. Joslyn.
 - e. Robbins Lightning Protection.
 - f. Thomas & Betts (Blackburn).
 - g. Thompson.
2. Exothermic weld connections:
 - a. Erico Products Inc., Cadweld.
 - b. Harger Lightning Protection.
 - c. Thermoweld.

2.2 COMPONENTS

A. Wire and Cable:

1. Bare conductors: Soft drawn stranded copper meeting ASTM B8.
2. Insulated conductors: Color coded green, per Specific Provision Section 16120.

B. Conduit: As specified in Specific Provision Section 16110.

C. Ground Bars:

1. Solid copper:
 - a. 1/4 IN thick.
 - b. 2 or 4 IN wide.

- c. 24 IN long minimum in main service entrance electrical rooms, 12 IN long elsewhere.
- 2. Predrilled grounding lug mounting holes.
- 3. Stainless steel or galvanized steel mounting brackets.
- 4. Insulated standoffs.
- D. Ground Rods:
 - 1. 3/4 IN x 10 FT,
 - 2. Copperclad:
 - a. Heavy uniform coating of electrolytic copper molecularly bonded to a rigid steel core.
 - b. Corrosion resistant bond between the copper and steel.
 - c. Hard drawn for a scar-resistant surface.
- E. Grounding Clamps, Connectors and Terminals:
 - 1. Mechanical type:
 - a. Standards: UL 467.
 - b. High copper alloy content.
 - 2. Compression type for interior locations:
 - a. Standards: UL 467.
 - b. High copper alloy content.
 - c. Non-reversible.
 - d. Terminals for connection to bus bars shall have two bolt holes.
 - 3. Compression type suitable for direct burial in earth or concrete:
 - a. Standards: UL 467, IEEE 837.
 - b. High copper alloy content.
 - c. Non-reversible.
- F. Exothermic Weld Connections:
 - 1. Copper oxide reduction by aluminum process.

2. Molds properly sized for each application.

PART 3 –EXECUTION

3.1 INSTALLATION

A. General:

1. Install products in accordance with manufacturer's instructions.
2. Size grounding conductors and bonding jumpers in accordance with NFPA 70 Article 250, except where larger sizes are indicated on the Drawings.
3. Remove paint, rust, or other nonconducting material from contact surfaces before making ground connections.
4. Do not splice grounding conductors except at ground rods.
5. Install ground rods and grounding conductors in undisturbed, firm soil.
 - a. Provide excavation required for installation of ground rods and ground conductors.
 - b. Use driving studs or other suitable means to prevent damage to threaded ends of sectional rods.
 - c. Unless otherwise specified, connect conductors to ground rods with compressor type connectors or exothermic weld.
 - d. Provide sufficient slack in grounding conductor to prevent conductor breakage during backfill or due to ground movement.
 - e. Backfill excavation completely, thoroughly tamping to provide good contact between backfill materials and ground rods and conductors.
6. Do not use exothermic welding if it will damage the structure the grounding conductor is being welded to.

B. Grounding Electrode System:

1. Provide a grounding electrode system in accordance with NFPA 70 Article 250 and as indicated on the Drawings.
2. Grounding conductor terminations:
 - a. Ground bars mounted on wall, use compression type terminal and bolt it to the ground bar with two bolts.
 - b. Ground bars in electrical equipment, use compression type terminal and bolt it to the ground bar.
 - c. Piping systems use mechanical type connections.

- d. Building steel, below grade and encased in concrete, use compression type connector or exothermic weld.
- e. At all above grade terminations, the conductors shall be labeled.

C. Supplemental Grounding Electrode:

- 1. Provide the following grounding in addition to the equipment ground conductor supplied with the feeder conductors whether or not shown on the Drawings.
- 2. Metal light poles:
 - a. Connect metal pole to a ground rod or ground conductor on the walkway bridge.
 - b. Grounding conductor: Bare #6 AWG minimum.
- 3. Equipment support rack and pedestals mounted outdoors:
 - a. Connect metallic structure to a ground rod.
 - b. Grounding conductor: #6 AWG minimum.

D. Raceway Bonding/Grounding:

- 1. All metallic conduit shall be installed so that it is electrically continuous.
- 2. All conduits to contain a grounding conductor with insulation identical to the phase conductors, unless otherwise indicated on the Drawings.
- 3. NFPA 70 required grounding bushings shall be of the insulating type.
- 4. Provide double locknuts at all panels and metal enclosures.
- 5. Bond all conduit, at entrance and exit of equipment, to the equipment ground bus or lug.
- 6. Provide bonding jumpers if conduits are installed in concentric knockouts.
- 7. Make all metallic raceway fittings and grounding clamps tight to ensure equipment grounding system will operate continuously at ground potential to provide low impedance current path for proper operation of overcurrent devices during possible ground fault conditions.

E. Equipment Grounding:

- 1. All utilization equipment shall be grounded with an equipment ground conductor.

3.2 FIELD QUALITY CONTROL

- A. Leave grounding system uncovered until observed by CITY.

END OF SECTION 16450

SECTION 16520 - EXTERIOR LIGHTING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material and installation requirements for:
 - a. Exterior site lighting fixtures.
 - b. Lighting control.

B. Related Specific Provision Sections include but are not necessarily limited to:

1. Section 16050 - Electrical: Basic Requirements.
2. Section 16120 - Wire and Cable - 600 Volt and Below.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Certified Ballast Manufacturers (CBM).
2. Institute of Electrical and Electronics Engineers, Inc. (IEEE):
 - a. C62.41, Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
3. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000Volts Maximum).
4. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
 - b. 101, Life Safety Code.
5. Underwriters Laboratories, Inc. (UL):
 - a. 248-4, Low-Voltage Fuses - Part 4: Class CC Fuses.
 - b. 1598, Luminaires.
6. United States Department of Energy (USDOE):
 - a. EAct, the National Energy Policy Act.

1.3 SUBMITTALS

A. Shop Drawings:

1. Product technical data:
 - a. Provide submittal data for all products specified in PART 2 of this Specific Provision Section.
 - b. Identify fixtures by Fixture Schedule number.
 - c. Fixture data sheet including:
 - 1) Photometric performance data including candlepower distribution and coefficient of utilization (CU) table.
 - d. See Specific Provision Section 16050 for additional requirements.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:

1. Lighting fixtures: See Fixture Schedule.
2. LED Driver: Fixture manufacturer's standard.
3. Contactors:
 - a. Automatic Switch Company (ASCO).
 - b. Cutler-Hammer.
 - c. General Electric Company.
 - d. Square D Company.
 - e. Siemens.

2.2 GENERAL REQUIREMENTS

A. All lighting fixtures and electrical components:

1. UL labeled.
2. Fixtures complete with lamps and LED power driver.

B. When intended for use in wet areas: Mark fixtures "Suitable for wet locations."

2.3 LIGHT FIXTURES

- A. Lighting fixtures: See Fixture Schedule.

2.4 MAINTENANCE MATERIALS

- A. Furnish a minimum of 2 of light fixture.
- B. Furnish a minimum of 10 percent of total of each type and amperage of fuses for fixtures indicated to be fused.
- C. Spare parts are to be stored in a box clearly labeled as to its contents.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Locate fixtures in accordance with electrical plans.
- B. Install exterior fixtures so that water cannot enter or accumulate in the wiring compartment.
- C. Ground fixtures and light poles

3.2 LIGHTING CONTROL

A. Contactors

- 1. General Requirements:
 - a. Standards: NEMA ICS 2, UL 508.
- 2. Lighting and Remote Control Switches:
 - a. Electrically operated, electrically held.
 - b. Coil voltage: 208 Vac or as required.
 - c. Contacts: Totally enclosed, double-break silver-cadmium-oxide.
 - d. Rated for ballasted lighting, tungsten and general use loads.
 - e. Number of poles, continuous ampere rating and voltage, as indicated on Drawings or as specified.
 - f. Auxiliary control relays, as indicated on Drawings or as specified.
 - g. Auxiliary contacts, as indicated on Drawings or as specified.
- 3. Definite Purpose:
 - a. Coil voltage: 208 Vac or as required.
 - b. Contacts: Totally enclosed, double-break silver-cadmium-oxide.

- c. Resistive load and horsepower rated.
 - d. Number of poles, continuous ampere rating and voltage, as indicated on Drawings or as specified.
 - e. Auxiliary contacts, as indicated on Drawings or as specified.
 - B. Exterior wall mounted and pole mounted fixtures controlled as detailed on the Drawings.
- 3.3 ADJUST AND CLEAN
- A. Replace all inoperable lamps with new lamps prior to Final Acceptance.

END OF SECTION 16520