

**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-00056**

# **HARBOUR ISLAND ROADWAY SURFACE REPLACEMENT**

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

NOVEMBER 2014

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

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**BID NOTICE MEMO**

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

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CONTRACT NO.: 14-C-00056; Harbor Island Roadway Surface Replacement

BID DATE: December 16, 2014 ESTIMATE: \$1,450,000 SCOPE: The project comprises furnishing all labor, materials and equipment for the removal of the existing concrete topping slab, expansion joint seals and waterproofing membrane, installing new waterproofing membrane including drainage board, protection board and slip sheet to surface of structural concrete slab located below topping slab, installing new three-coat multi-polymer coating to surface of structural concrete slab located below topping slab, installing new concrete topping slab on roadway, with all associated work required for a complete project in accordance with the Contract Documents. PRE-BID CONFERENCE: Tuesday, December 2, 2014, 2:00 p.m. Attendance is not mandatory, but recommended.

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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](http://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](http://www.Tampagov.net). Phone (813) 274-8456 for assistance. **Email Technical Questions to:** [contractadministration@tampagov.net](mailto:contractadministration@tampagov.net).

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NOTICE TO BIDDERS  
CITY OF TAMPA, FLORIDA  
Contract 14-C-00056; Harbour Island Roadway Surface Replacement

Sealed Proposals will be received by the City of Tampa no later than 1:30 P.M., December 16, 2014, in the 4<sup>th</sup> 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 for the removal of the existing concrete topping slab, expansion joint seals and waterproofing membrane, installing new waterproofing membrane including drainage board, protection board and slip sheet to surface of structural concrete slab located below topping slab, installing new three-coat multi-polymer coating to surface of structural concrete slab located below topping slab, installing new concrete topping slab on roadway, with all associated work required for a complete project in accordance with the Contract Documents.

The Instructions to Bidders, Proposal, Form of Bid Bond, Agreement, Form of Public Construction Bond, Specifications, Plans and other Contract Documents are posted at DemandStar.com. Backup files may be downloaded from [http://www.tampagov.net/dept\\_contract\\_administration/programs\\_and\\_services/construction\\_project\\_bidding/index.asp](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](mailto:ContractAdministration@tampagov.net)

"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.

INSTRUCTIONS TO BIDDERS  
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.01 GENERAL:

The proposed work is the Harbour Island Roadway Surface Replacement 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](mailto: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 160 consecutive calendar days. The period for performance shall start from the date indicated in the Notice To Proceed. The start of on-site work shall not begin prior to April 1, 2015.

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 / SLBE / REQUIREMENTS

In accordance with the City of Tampa's Equal Business Opportunity Ordinance, a goal of 2.2% has been established for subcontracting with Small Local Business Enterprises, (SLBEs), certified by the City. The goal is based upon the availability of the firms listed on the Goal Worksheet and as posted in the "SLBEs" link under this Contract's notice on the Department's Construction Project Bidding web page.

BIDDERS MUST SOLICIT ALL SLBEs ON THAT LIST and provide documentation of emails, faxes, phone calls, letters, or other communication with the firms as a first step to demonstrate Good Faith Efforts to achieve the goal. The list is formatted to facilitate e-mail solicitations to the listed firms by copying and pasting e-mail addresses.

Bidders may explore other opportunities for subcontracting with SLBEs by consulting the current directory of all certified SLBEs posted on the Minority Business Development Office web page.

GOOD FAITH EFFORT COMPLIANCE PLAN REQUIRED - When a Goal has been established, the Bidder must submit, with its bid, completed to the fullest extent possible, a Good Faith Effort Compliance Plan using the form GFECF contained herein. Additional documentation is required whenever an SLBE subcontractor's low quote is not utilized. Supplemental information or documentation concerning the Bidder's Compliance Plan may be required prior to award as requested by the City.

DIVERSITY MANAGEMENT INITIATIVE, DMI, DATA REPORTING FORMS REQUIRED - Bidders must submit, with its bid, "DMI-Solicited" forms listing all subcontractors solicited and "DMI-Utilized" forms listing all subcontractors to be utilized. Supplemental forms, documentation, or information may be submitted at bid time or as requested by the City.

After an award, "DMI-Payments" forms are to be submitted with payment requests to report payments to subcontractors.

Bidders may visit the Minority Business Development Office's web page at TampaGov.net for other information about the SLBE program, FAQ's, and the latest SLBE directory of certified firms.

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.

INSTRUCTIONS TO BIDDERS  
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.12 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 issued and executed by (a) surety company(ies) acceptable to the City of Tampa and licensed to underwrite contracts in the State of Florida. After execution of the Agreement and before commencing work, the Contractor must provide the City a certified copy of the officially recorded Bond.

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.

The amount to be paid to the Contract 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 – 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 .05 Partial Payments, 1<sup>st</sup> Paragraph, 1<sup>st</sup> Sentence:

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

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.

INSTRUCTIONS TO BIDDERS  
SECTION 1 - SPECIAL INSTRUCTIONS

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](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.

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.

## 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)

*City of Tampa MBD Office*  
*U-WMBE Goal Setting Firms Report*  
*11/13/14*

**BARRICADES, TRAFFIC CONES, LANE MARKERS, ETC**

**Sentry Barricades, Inc.**

P.O. Box 3647  
820 Creative Drive  
Lakeland, FL 33802

**E-mail** admin@sentryb.com

**Phone** (863) 682-7098

**Fax** (863) 680-9901

**Federal Number** 59-3590342

**Minority** African American

**Contact** Darryl Talley

**PAVEMENT MARKING SERVICES**

**BUN Construction Co., Inc.**

4202 E. Martin Luther King Blvd.  
Tampa, FL 33610

**E-mail** bunconstruction@tampabay.rr.com

**Phone** (813) 931-8270

**Fax** (813) 931-9185

**Federal Number** 59-3362663

**Minority** African American

**Contact** Bart Nwagbuo

**Howard Sealcoating & Land Clearing**

1911N. 57th St  
Tampa, FL 33619

**E-mail** lhoward@asphaltfl.com

**Phone** (305) 693-8972

**Fax** (305) 693-8985

**Federal Number** 65-0802138

**Minority** African American

**Contact** Leroy Howard

**SURVEYORS' SERVICES**

**Spectra Engineering and Research, Inc.**

1060 Maitland Center Commons, Suite 340  
Maitland, FL 32751

**E-mail** spectra@spectraengr.com

**Phone** (407) 951-8844

**Fax** (407) 951-8845

**Federal Number** 59-3009648

**Minority** African American

**Contact** Peter Okonkwo

**TRUCKING & HAULING**

**Logistical Transportation Co., Inc.**

P.O. Box 40001  
Jacksonville, FL 32203-0001

**E-mail** mgraham@logistical-company.com

**Phone** (904) 764-3219

**Fax** (904) 766-2446

**Federal Number** 59-1988061

**Minority** African American

**Contact** Marion Graham, Jr.

**Sabrina's Trucking, LLC**

P.O. Box 992  
Mango, FL 33550

**E-mail** jtrucker151@aol.com

**Phone** (813) 629-7210

**Fax** (813) 627-9094

**Federal Number** 59-3284380

**Minority** African American

**Contact** Nathaniel Johnson

*City of Tampa MBD Office*  
*U-WMBE Goal Setting Firms Report*  
*11/13/14*

**TRUCKING & HAULING**

**Bay Light, LLC d/b/a Professional Property Services**

10105 11th Street North  
Tampa, FL 33612

**Phone** (813) 972-4057  
**Fax** (813) 971-0882

**E-mail** paulrobinson22@msn.com

**Federal Number** 59-1341451

**Minority** African American  
**Contact** Hyacinth Robinson

**Par Development Partners, Inc.**

10002 Forest Hills Dr  
Tampa, FL 33612

**Phone** (813) 374-2856  
**Fax** (866) 594-2505

**E-mail** ydwilson@aol.com

**Federal Number** 20-5657414

**Minority** African American  
**Contact** Yancy Wilson

**Howard Sealcoating & Land Clearing**

1911N. 57th St  
Tampa, FL 33619

**Phone** (305) 693-8972  
**Fax** (305) 693-8985

**E-mail** lhoward@asphaltfl.com

**Federal Number** 65-0802138

**Minority** African American  
**Contact** Leroy Howard

**Charlie Brown's Hauling & Demolition, Inc.**

P.O. Box 1178  
Dade City, FL 33526

**Phone** (352) 521-0482  
**Fax** (352) 521-5915

**E-mail** Charliwbrown@aol.com

**Federal Number** 20-1874672

**Minority** African American  
**Contact** Charlie Brown

**On-Point Group, Inc.**

5608 Puritan Rd  
Tampa, FL 33617

**Phone** (813) 927-2808  
**Fax** (813) 374-0993

**E-mail** d.jones@on-pointgroupinc.com

**Federal Number** 38-3788119

**Minority** African American  
**Contact** Daphne Jones

**Accelerated Waste Solutions of North America, LLC**

8710 W. Hillsborough Ave., Suite 262  
Tampa, FL 33615

**Phone** (866) 698-2874  
**Fax** (813) 871-0377

**E-mail** cityoftampa@acceleratedwaste.com

**Federal Number** 27-1394911

**Minority** African American  
**Contact** Fred Tomlin

**VIDEO SERVICES, PHOTOGRAPHY**

**Kerrick Williams Photography, LLC**

811 Hickory Glen Drive  
Seffner, FL 33584

**Phone** (813) 571-3768  
**Fax** (866) 571-7149

**E-mail** kerrick@kerrickwilliams.com

**Federal Number** 59-3225186

**Minority** African American  
**Contact** Kerrick Williams

**DeHa Multimedia, LLC**

P.O. Box 23532  
Tampa, FL 33623

**Phone** (813) 340-3017  
**Fax** (813) 891-0332

**E-mail** hakeem@dehamagazine.com

**Federal Number** 26-0527750

**Minority** African American  
**Contact** Hakeem Ali

**The Webb Works**

3421 South Gardenia Drive  
Tampa, FL 33629

**Phone** (813) 817-9840  
**Fax**

**E-mail** jim@thewebbworks.com

**Federal Number** 55-0870869

**Minority** African American  
**Contact** James Webb

## City of Tampa MBD Office



# SLBE Goal Setting Firms Report

as of 11/13/2014

### BARRICADES, TRAFFIC CONES, LANE MARKERS, ETC

#### Sentry Barricades, Inc.

P.O. Box 3647  
820 Creative Drive  
Lakeland, FL 33802

**Phone** (863) 682-7098

**Fax** (863) 680-9901

**E-mail** admin@sentryb.com

**Federal Number** 59-3590342

**Minority** Small Business

**Contact** Darryl Talley

### PAVEMENT MARKING SERVICES

#### BUN Construction Co., Inc.

4202 E. Martin Luther King Blvd.  
Tampa, FL 33610

**Phone** (813) 931-8270

**Fax** (813) 931-9185

**E-mail** bunconstruction@tampabay.rr.com

**Federal Number** 59-3362663

**Minority** Small Business

**Contact** Bart Nwagbuo

#### Universal Pavement Marking Inc.

P.O. Box 0021  
Valrico, FL 33594

**Phone** (813) 653-0092

**Fax** (813) 653-0092

**E-mail** upmarking@aol.com

**Federal Number** 59-3245096

**Minority** Small Business

**Contact** Jon Martin

#### Howard Sealcoating & Land Clearing

1911N. 57th St  
Tampa, FL 33619

**Phone** (305) 693-8972

**Fax** (305) 693-8985

**E-mail** lhoward@asphaltfl.com

**Federal Number** 65-0802138

**Minority** Small Business

**Contact** Leroy Howard

#### Superior Construction & Contracting, LLC

4402 Osborne Ave  
Tampa, FL 33614

**Phone** (813) 712-7325

**Fax** (813) 868-1163

**E-mail** jmartinez@superiorflorida.net

**Federal Number** 27-0679204

**Minority** Small Business

**Contact** Michael Strouse

### SURVEYORS' SERVICES

#### Metzger & Willard, Inc.

8600 Hidden River Parkway Ste. 550  
Tampa, FL 33637-1033

**Phone** (813) 977-6055

**Fax** (813) 977-0593

**E-mail** nmetzger@metzgerwillard.com

**Federal Number** 59-1907168

**Minority** Small Business

**Contact** Nancy Metzger

## City of Tampa MBD Office

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### SURVEYORS' SERVICES

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**Mills & Associates, Inc.**

3242 Henderson Blvd. #300  
Tampa, FL 33609

**Phone** (813) 876-5869

**Fax** (813) 870-0317

**E-mail** larry.m@millsandassoc.com

**Federal Number** 59-2354541

**Minority** Small Business

**Contact** Lawrence Mills

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**Northwest Engineering Inc.**

8409 Sunstate St.  
Tampa, FL 33634-1309

**Phone** (813) 889-9236

**Fax** (813) 886-3315

**E-mail** jsilva@neitampa.com

**Federal Number** 59-2899240

**Minority** Small Business

**Contact** Gerald Silva

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**Suncoast Land Surveying, Inc.**

111 Forest Lakes Blvd. S.  
Oldsmar, FL 34677

**Phone** (813) 854-1342

**Fax** (813) 354-3435

**E-mail** mariesls@tampabay.rr.com

**Federal Number** 59-2733609

**Minority** Small Business

**Contact** Marie McClung

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**Land Precision Corporation**

2683 Sunset Point Road  
Clearwater, FL 33759

**Phone** (727) 796-2737

**Fax** (727) 796-3326

**E-mail** vcorbitt@landprecision.com

**Federal Number** 59-3088679

**Minority** Small Business

**Contact** Vincent E. Corbitt

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**Parra & Karimi Engineering, LLC ( P & K Engineering)**

2035 Camp Indianhead Rd  
Land O Lakes, FL 34639

**Phone** (813) 988-8100

**Fax** (813) 988-8108

**E-mail** pkmail@pk-eng.com

**Federal Number** 22-3943908

**Minority** Small Business

**Contact** Mario Parra

---

**Hyatt Survey Services, Inc.**

11007 8th Avenue E.  
Bradenton, FL 34212

**Phone** (941) 746-3903

**Fax** (941) 749-0166

**E-mail** pam@hyatt-survey.com

**Federal Number** 03-0476653

**Minority** Small Business

**Contact** Pamela Hyatt

---

**SurvTech Solutions, Inc.**

10220 U.S. Highway 92 E  
Tampa, FL 33610

**Phone** (813) 621-4929

**Fax** (813) 621-7194

**E-mail** sales@survtechsolutions.com

**Federal Number** 52-2444588

**Minority** Small Business

**Contact** David O'Brien

## City of Tampa MBD Office

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### SURVEYORS' SERVICES

**Digital Aerial Solutions, LLC**

8409 Laurel Fair Cir, Suite 100  
Tampa, FL 33610

**Phone** (813) 628-0788

**Fax** (813) 628-0777

**E-mail** monak@digitalaerial.com

**Federal Number** 47-0907854

**Minority** Small Business

**Contact** Michael Wasielewski

**D.C. Johnson & Associates, Inc.**

11911 S Curley St.  
San Antonio, FL 33576

**Phone** (352) 588-2768

**Fax** (352) 588-2713

**E-mail** chrisxynides@dcjohnson.com

**Federal Number** 59-2214086

**Minority** Small Business

**Contact** Daniel Johnson

**Leftcoast Surveyors, Inc.**

2363 1st Avenue North  
St. Petersburg, FL 33713

**Phone** (727) 576-2877

**Fax** (727) 576-6602

**E-mail** leftcoast@tampabay.rr.com

**Federal Number** 59-3655470

**Minority** Small Business

**Contact** Mike Guiler

**AJN Surveying, LLC**

4406 Flintlock Loop  
Lakeland, FL 33810

**Phone** (813) 352-9483

**Fax** (813) 704-4836

**E-mail** alan@ajnsurveying.com

**Federal Number** 90-0444646

**Minority** Small Business

**Contact** Alan Naumowicz

**REVOLUTION PROFESSIONAL SERVICES, INC**

25400 US Hwy 19 N, Ste 137  
Clearwater, FL 33763

**Phone** (727) 796-8740

**Fax** (727) 796-8601

**E-mail** klanzner@rpspls.com

**Federal Number** 27-4498767

**Minority** Small Business

**Contact** Kathleen Lanzner

**EMK Consultants of Florida, Inc.**

7815 N. Dale Mabry Hwy, Suite 200  
Tampa, FL 33614

**Phone** (813) 931-8900

**Fax** (813) 931-5848

**E-mail** jill@emkfla.com

**Federal Number** 84-1056258

**Minority** Small Business

**Contact** Earl Michaels

**Sycamore Engineering, Inc.**

11435 Cypress Reserve Drive  
Tampa, FL 33626

**Phone** (813) 889-0700

**Fax** (813) 889-0788

**E-mail** akhaled@sycamoreeng.com

**Federal Number** 20-1479603

**Minority** Small Business

**Contact** Abir Khaled

## City of Tampa MBD Office



# SLBE Goal Setting Firms Report

as of 11/13/2014

### SURVEYORS' SERVICES

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#### W.C. Sherrill and Company, LLC.

26232 Wesley Chapel Blvd.  
Lutz, FL 33559

**Phone** (813) 345-4270

**Fax**

**E-mail** rick.weigl@gmail.com

**Federal Number** 61-1606347

**Minority** Small Business

**Contact** Walter Sherrill, Jr.

### TRUCKING & HAULING

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#### Sabrina's Trucking, LLC

P.O. Box 992  
Mango, FL 33550

**Phone** (813) 629-7210

**Fax** (813) 627-9094

**E-mail** jtrucker151@aol.com

**Federal Number** 59-3284380

**Minority** Small Business

**Contact** Nathaniel Johnson

#### Sunrise Utility Construction, Inc.

P.O. Box 272293  
Tampa, FL 33688-2293

**Phone** (813) 949-3749

**Fax** (813) 949-0408

**E-mail** LMNBOSS@AOL.COM

**Federal Number** 59-3034012

**Minority** Small Business

**Contact** Lisa Nehrboss

#### Bay Light, LLC d/b/a Professional Property Services

10105 11th Street North  
Tampa, FL 33612

**Phone** (813) 972-4057

**Fax** (813) 971-0882

**E-mail** paulrobinson22@msn.com

**Federal Number** 59-1341451

**Minority** Small Business

**Contact** Hyacinth Robinson

#### Par Development Partners, Inc.

10002 Forest Hills Dr  
Tampa, FL 33612

**Phone** (813) 374-2856

**Fax** (866) 594-2505

**E-mail** ydwilson@aol.com

**Federal Number** 20-5657414

**Minority** Small Business

**Contact** Yancy Wilson

#### Howard Sealcoating & Land Clearing

1911N. 57th St  
Tampa, FL 33619

**Phone** (305) 693-8972

**Fax** (305) 693-8985

**E-mail** lhoward@asphaltfl.com

**Federal Number** 65-0802138

**Minority** Small Business

**Contact** Leroy Howard

## City of Tampa MBD Office

# SLBE Goal Setting Firms Report

as of 11/13/2014



### TRUCKING & HAULING

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**Charlie Brown's Hauling & Demolition, Inc.**

P.O. Box 1178  
Dade City, FL 33526

**Phone** (352) 521-0482

**Fax** (352) 521-5915

**E-mail** Charliwbrown@aol.com

**Federal Number** 20-1874672

**Minority** Small Business

**Contact** Charlie Brown

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**Suarez Grading Enterprises, Inc.**

P.O. Box 89579  
Tampa, FL 33689

**Phone** (813) 663-9037

**Fax** (813) 620-4158

**E-mail** l.martinez@suarezgrading.com

**Federal Number** 84-1681751

**Minority** Small Business

**Contact** Pedro Suarez

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**On-Point Group, Inc.**

5608 Puritan Rd  
Tampa, FL 33617

**Phone** (813) 927-2808

**Fax** (813) 374-0993

**E-mail** d.jones@on-pointgroupinc.com

**Federal Number** 38-3788119

**Minority** Small Business

**Contact** Daphne Jones

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**Accelerated Waste Solutions of North America, LLC**

8710 W. Hillsborough Ave., Suite 262  
Tampa, FL 33615

**Phone** (866) 698-2874

**Fax** (813) 871-0377

**E-mail** cityoftampa@acceleratedwaste.com

**Federal Number** 27-1394911

**Minority** Small Business

**Contact** Fred Tomlin

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**TNT Environmental, LLC**

17852 Pine Knoll Drive  
Dade City, FL 33523

**Phone** (352) 567-1822

**Fax** (352) 567-5817

**E-mail** tntenvironmental@gmail.com

**Federal Number** 26-3864129

**Minority** Small Business

**Contact** Christopher Leibereid

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**J M J Hauling, Inc.**

13810 Golf Course Road  
Parrish, FL 34219

**Phone** (917) 544-9741

**Fax** (941) 721-6932

**E-mail** mvachu@tampabay.rr.com

**Federal Number** 32-0270935

**Minority** Small Business

**Contact** Bachu Maniram

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**Manes Trucking, Inc.**

5812 Imperial Key  
Tampa, FL 33615

**Phone** (813) 475-4466

**Fax** (813) 475-4466

**E-mail** manestrucking22@tampabay.rr.com

**Federal Number** 59-3594014

**Minority** Small Business

**Contact** Amelia Manes

## City of Tampa MBD Office



# SLBE Goal Setting Firms Report

as of 11/13/2014

### TRUCKING & HAULING

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#### Ortzak Technology, LLC

13014 N. Dale Mabry Hwy, Suite 623  
Tampa, FL 33618

**Phone** (813) 961-6023

**Fax** (813) 961-6023

**E-mail** dcastro@ortzak.com

**Federal Number** 45-4837502

**Minority** Small Business

**Contact** Daniel Castro

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### VIDEO SERVICES, PHOTOGRAPHY

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#### A Business Forms & Pegboard Systems, Inc.

123 W. Seneca Ave.  
Tampa, FL 33612-6753

**Phone** (813) 933-2788

**Fax** (813) 935-9506

**E-mail** results@amediamarketing.com

**Federal Number** 59-1559977

**Minority** Small Business

**Contact** Victoria Jorgenson

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#### Aerial Innovations, Inc.

3703 W. Azeele St.  
Tampa, FL 33609-2807

**Phone** (813) 254-7339

**Fax** (813) 254-7239

**E-mail** colette@aerialinnovations.com

**Federal Number** 59-2802602

**Minority** Small Business

**Contact** Colette Eddy

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#### Kerrick Williams Photography, LLC

811 Hickory Glen Drive  
Seffner, FL 33584

**Phone** (813) 571-3768

**Fax** (866) 571-7149

**E-mail** kerrick@kerrickwilliams.com

**Federal Number** 59-3225186

**Minority** Small Business

**Contact** Kerrick Williams

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#### DeHa Multimedia, LLC

P.O. Box 23532  
Tampa, FL 33623

**Phone** (813) 340-3017

**Fax** (813) 891-0332

**E-mail** hakeem@dehamagazine.com

**Federal Number** 26-0527750

**Minority** Small Business

**Contact** Hakeem Ali

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#### Mercury Productions, Inc.

12463 92nd Terrace  
Seminole, FL 33772

**Phone** (813) 287-8044

**Fax** (813) 287-8613

**E-mail** bill@mercurytampabay.com

**Federal Number** 59-3491905

**Minority** Small Business

**Contact** William McQueen

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*City of Tampa MBD Office*



**SLBE Goal Setting Firms Report**

*as of 11/13/2014*

**VIDEO SERVICES, PHOTOGRAPHY**

**Scott Henderson Productions, Inc.**

20208 Ravens End Dr.  
Tampa, FL 33647

**Phone** (585) 820-5683

**Fax**

**E-mail** shenderson62@tampabay.rr.com

**Federal Number** 16-1416204

**Minority** Small Business

**Contact** Scott Henderson

**Uppercase, Inc.**

905 North Tampa Street  
Tampa, FL 33602

**Phone** (813) 226-3096

**Fax**

**E-mail** matt@uppercaseincorporated.com

**Federal Number** 26-2817255

**Minority** Small Business

**Contact** Matthew Morgan

**The Webb Works**

3421 South Gardenia Drive  
Tampa, FL 33629

**Phone** (813) 817-9840

**Fax**

**E-mail** jim@thewebbworks.com

**Federal Number** 55-0870869

**Minority** Small Business

**Contact** James Webb

**SLBE Contract Goal**

Goal  
2.2%

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/](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-00056; Harbour Island Roadway Surface Replacement

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	Total Computed Price
1.1	Project Mobilcaiton	L.S.	1		\$	\$
1.3	Elevation Survey	L.S.	1		\$	\$
2.0	Remove Existing Concrete Topping Slab, Expansion Joints and Waterproofing Membrane (See Spec. 01 10 00)	L.S.	1		\$	\$
2.3	Allowance for Partial Depth Concrete Floor Slab Repair (Structual Slab)	S.F.	200		\$	\$
3.0	Install New Two-Coat Epoxy Polymer Coating (See Spec. 07 00 00)	L.S.	1		\$	\$
4.0	Install New Expansin Joints	L.S.	1		\$	\$
5.0	Install New Concrete Topping Slab (See Spec. 01 10 00)	L.S.	1		\$	\$
5.1	Install New Colored Concrete Topping Slab (See Spec. 01 10 00)	L.S.	1		\$	\$
6.0	Concrete Penetrating Sealer	L.S.	1		\$	\$
7.0	Re-Striping	L.S.	1		\$	\$
7.1	Allowance for Crack Repair (Structural Slab)	L.F.	500		\$	\$
						BASE TOTAL \$
Alternate No. 1						
3.0A	Install New Waterproofing Membrane	L.S.	1		\$	\$
Alternate No. 2						
3.0B	Install New Three-Coat Multi-Polymer Coating	L.S.	1		\$	\$
						GRAND TOTAL \$

Contract 14-C-00056; Harbour Island Roadway Surface Replacement

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.

Contract 14-C-00056; Harbour Island Roadway Surface Replacement

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:  
\_\_\_\_\_  
\_\_\_\_\_

SECTION 00 11 53

RESTORATION CONTRACTOR'S MINIMUM QUALIFICATIONS

- A. Contractor shall have successfully completed a minimum 3 similar restoration/waterproofing/topping slab projects in the last 5 years that had a construction value of at least 1 million dollars per project, and provide client references and contact information for each project. List 3 similar projects in **Table I**.
- B. Contractor's superintendent shall have a minimum of 10 years' experience in similar restoration/waterproofing/topping slab work and have been in charge of at least 3 similar projects. Describe experience of superintendent in **Table II**.
- C. Hot Fluid-Applied Waterproofing Installer Qualifications: A qualified installer who is authorized, approved, or licensed to install waterproofing manufacturer's products; and who is eligible to receive waterproofing warranty specified. List installer on **Bid Form** if work is to be sub-contracted.
- D. Contractor shall meet all installer/applicator qualifications given in technical specifications.

<b>TABLE I - LAST THREE SIMILAR RESTORATION/WATERPROOFING/TOPPING SLAB PROJECTS COMPLETED</b>			
Name and Address of Contractor			Date:
Name (Direct Contact and Company), Address, Phone Number, and Email of Owner	Description of Project	Contract Amount	Date Completed
1.		Completed on budget: Yes / No	Completed on schedule: Yes / No
2.		Completed on budget: Yes / No	Completed on schedule: Yes / No
3.		Completed on budget: Yes / No	Completed on schedule: Yes / No

**TABLE II - CONSTRUCTION EXPERIENCE OF SUPERINTENDENT**

Name and address of Contractor:					Date:
Name	Position	Years Experience		Type of Work	Contract Amount
		Construction	Restoration		

END OF SECTION 00 11 53

**Good Faith Effort Compliance Plan** for Small Local Business Subcontracting  
City of Tampa - Equal Business Opportunity Program

Contract \_\_\_\_\_ Bid Date \_\_\_\_\_

Bidder \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

The following Compliance Plan is a true report of Good Faith Efforts made to accomplish subcontracting goals for Small Local Business Enterprises, SLBEs, on the referenced contract:

The goal for SLBE participation has been met or exceeded. See the DMI form reporting subcontractors to be utilized.  
(Check Box, if appropriate; the remainder of the Compliance Plan need not be reported.)

The goal for SLBE participation has not been met. The following is a recap of Good Faith Efforts made:  
(Check applicable boxes below. Enclose additional documents, and/or add remarks below as needed.)

- (1) Soliciting through reasonable and available means the interest of SLBEs that have the capability to perform the work of the contract. The Bidder or Contractor must solicit this interest within sufficient time to allow the SLBEs to respond. The Bidder or Contractor must take appropriate steps to follow up initial solicitations with interested SLBEs.  See DMI report forms for subcontractors solicited.  See enclosed supplemental data on solicitation efforts.  Remarks:
- (2) Providing interested SLBEs with adequate information about the plans, specifications, and requirements of the contract, including addenda, in a timely manner to assist them in responding to the solicitation.  See enclosed sample solicitation.  Remarks:
- (3) Negotiating in good faith with interested SLBEs that have submitted bids. Documentation of negotiation must include the names, addresses, and telephone numbers of SLBEs that were solicited; the date of each such solicitation; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why agreements could not be reached with SLBEs to perform the work. That there may be some additional costs involved in soliciting and using SLBEs is not a sufficient reason for a contractor's failure to meet the goals, as long as such costs are reasonable. Bidders are not required to accept higher quotes in order to meet the goal.  DMI subcontractor-utilized forms reflect successful negotiations  This project is of a low-bid nature and negotiations are limited to clarifications of scope and specifications.  See enclosed document.  Remarks:
- (4) Not rejecting SLBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The SLBEs standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations are not legitimate causes for rejecting or not soliciting bids to meet the goals.  Not applicable.  See attached explanation for rejection of a low-bidding subcontractor's bid.  Remarks:
- (5) Making a portion of the work available to SLBE subcontractors and suppliers and to select those portions of the work or material consistent with the available SLBE subcontractors and suppliers, so as to facilitate meeting the goal.  Sub-Contractors were allowed to bid on their own choice of work or trade without restriction to a pre-determined portion.  See enclosed comments.  Remarks:
- (6) Making good faith efforts, despite the ability or desire of a Bidder or Contractor to perform the work of a contract with its own organization. A Bidder or Contractor who desires to self-perform the work of a contract must demonstrate good faith efforts unless the goal has been met.  Sub-Contractors were not prohibited from submitting bids on work not usually sub-contracted.  Remarks:
- (7) Selecting portions of the work to be performed by SLBEs in order to increase the likelihood that the goals will be met. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate SLBE participation, even when the Bidder or Contractor might otherwise prefer to perform these work items with its own forces.  Sub-Contractors were allowed to bid on their own choice of work or trade without restriction to a pre-determined portion.  Sub-Contractors were not prohibited from submitting bids on work not usually sub-contracted.  See enclosed comments.  Remarks:
- (8) Making efforts to assist interested SLBEs in obtaining bonding, lines of credit, or insurance as required by the city or contractor.  See enclosed sample solicitation  see enclosed document.  Remarks:
- (9) Making efforts to assist interested SLBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, including participation in a City-sponsored mentor-protégé program.  See enclosed sample solicitation.  See enclosed document.  Remarks:
- (10) Effectively using the services of the City and other organizations that provide assistance in the recruitment and placement of SLBEs.  See enclosed document.  The following services were used:

Other Supporting Good Faith Efforts:  See enclosed document.  Remarks:

## **Compliance Plan: Guidance For Meeting Good Faith Efforts**

1. All firms on the SLBE Goal Setting List must be solicited and documentation provided for email, fax, letters, phone calls, and other communication with the listed firms. The DMI Solicited and DMI-Utilized forms must be completed for all firms solicited or utilized. Other opportunities for subcontracting may be explored by consulting the City of Tampa and/or Hillsborough County certification listings of SLBE's.
2. Solicitation of SLBEs, via written or electronic notification, should provide specific information on the services needed, where plans can be reviewed and assistance offered in obtaining these, if required. Solicitations should be typically be sent a week or more before the bid date. Sample copies of the bidder's solicitations should be provided.
3. With any quotes received, a follow-up should be made whenever needed to confirm scope of work. For any SLBE low quotes rejected, an explanation should be provided detailing negotiation efforts.
4. If a low bid SLBE is rejected or deemed unqualified the contractor must provide an explanation and supporting documentation for this decision.
5. Prime should break down portions of work into economical feasible opportunities for subcontracting. The SLBE directory can be useful in identifying additional subcontracting opportunities and firms not listed in the "SLBE Goal Setting Firms List."
6. Contractor should not preclude SLBEs from bidding on any part of work, even if the Contractor can self-perform the work.
7. Contractor should avoid relying solely on subcontracting out work where availability is not sufficient to attain pre-determined goal.
8. In its solicitations, the Bidder should offer assistance to SLBEs in obtaining bonding, insurance, etc, if required of subcontractors by the City or Prime Contractor.
9. In its solicitation, the Bidder should offer assistance in obtaining equipment for a specific job to SLBEs, if needed.
10. Contractor should use the services offered by such agencies as the Minority Business Development Office of the City of Tampa, Hillsborough County and the NAACP Empowerment Center for the recruitment and placement of SLBEs.





## 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 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-00056; Harbour Island Roadway Surface Replacement

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 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-00056, Harbour Island Roadway Surface Replacement.

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-00056 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-00056; Harbour Island Roadway Surface Replacement, shall include, but not be limited to, furnishing all labor, materials and equipment for the removal of the existing concrete topping slab, expansion joint seals and waterproofing membrane, installing new waterproofing membrane including drainage board, protection board and slip sheet to surface of structural concrete slab located below topping slab, installing new three-coat multi-polymer coating to surface of structural concrete slab located below topping slab, installing new concrete topping slab on roadway 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 conditions(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 interms 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.

\* \* \* \* \*

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.

## TEMPORARY STRUCTURES

### 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.

## SECTION 6

### 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

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 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

Corps of Engineers.

## **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.

**SECTION 13  
CLEANING**

**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.

**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.

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SUPPLEMENTARY GENERAL PROVISIONS

1.0 GENERAL:

- 1.1 This Section sets forth modifications to the "General Provisions" of the Contract Documents which are referred to as Specifications, General Provisions.
- 1.2 Paragraph numbers and titles used herein refer to similarly numbered and titled articles in the General Provisions.
- 1.3 Only those paragraphs contained herein shall be assumed to be modified. Paragraphs not appearing herein shall apply as written in the General Provisions.
- 1.4 Any portion of the General Provisions, whether or not modified herein, may be further modified in Special Conditions and in the Instructions to Bidders of these Specifications.
- 1.5 Where the Supplementary General Provisions, Special Conditions and Instructions to Bidders conflict with the General Provisions, the Supplementary General Provisions, Special Conditions and the Instructions to Bidders shall take precedence.

2.0 MODIFICATIONS TO THE GENERAL PROVISIONS AS FOLLOWS:

2.1 SECTION 1 SCOPE AND INTENT

G-1.02 WORK INCLUDED

The first paragraph shall be deleted in its entirety and replaced by the following paragraph:

"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 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 incidental thereto. He shall repair or restore all during performance of the work."

2.2 SECTION 3 WORKING DRAWINGS

- a. Change to read as follows:

SECTION 3 SHOP DRAWINGS

- b. Replace the existing paragraphs in their entirety with the following paragraphs:

G-3.01 SCOPE

Shop drawings, schedules, etc., shall be submitted to the Engineer and/or Architect in quadruplet, accompanied by a letter of transmittal. Subcontractors and suppliers shall submit shop drawings and make requests for approvals through their respective prime Contractors.

The drawings shall be numbered consecutively and shall accurately and distinctly present the following:

- (1) Names of equipment or materials, and the locations at which the equipment or materials are to be installed in the work.

- (2) All working and erection dimensions.
- (3) Arrangement and sectional views.
- (4) Necessary details, including complete information for making connections between work under this contract and work under other contracts.
- (5) Kinds of materials and finishes.
- (6) Parts list and description thereof.

The Engineer and/or Architect may decline to consider any shop drawing that does not contain complete data on the work and full information of related matters.

Fax submittals will not be reviewed.

G-3.02 APPROVAL:

Shop drawings shall be examined by the Contractor prior to his transmitting them to the Engineer and/or Architect. Shop drawings submitted to the Engineer and/or Architect shall bear the Contractor's stamp of approval evidencing that he has examined and checked each drawing and that he has found said drawings to be in accordance with the Contract requirements. Any drawings submitted without this stamp will not be considered by the Engineer and/or Architect and will be returned to the Contractor for re- submission.

If the shop drawings show departures from the Contract requirements, the Contractor shall make specific mention thereof in his letter of submittal and the following shall be submitted:

- (1) Each request shall include a complete description of the proposed substitute and the name of the material or equipment for which it is to be substituted.
- (2) Furnish drawings, cut, manufacturer's printed specifications, performance and test data and any other data or information necessary for a complete evaluation of both the item specified and the proposed substitute item.

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.

Approval of the drawings shall be general and shall not relieve the Contractor of responsibility for the accuracy of such drawings, nor for the quantities of materials and equipment, nor for the proper fitting and construction of the work, nor for the furnishing of materials, tools, equipment, etc., required by this contract and not indicated on the drawings.

No work called for by Shop Drawings shall be done until the said drawings have been approved by the Engineer and/or Architect.

The Contractor shall revise and resubmit the shop drawings as required by the Engineer and/or Architect until approval thereof is obtained.

The City shall retain four (4) copies of all submittals unless the Engineers and/or Architect makes a specific request for additional copies.

<u>Items</u>	<u>Submittals</u>	<u>*Approval</u>
All trade	Fourteen (14) Days	Fourteen (14) Days

\*From date of receipt of submittal.

Delays on account of tardy or untimely submittals will not be considered as causes of extension of time of the Contract or increases to the Contract Sum.

G-3.03 JOB SITE:

One (1) copy of all approved submittals SHALL BE available at the Contractor's Office at the job site.

2.3 SECTION 4 MATERIALS AND EQUIPMENT

G-4.01 GENERAL REQUIREMENTS

In the first paragraph, second line, delete the word "specifications" and substitute the words "Contract Documents".

G4.03 REFERENCE TO STANDARDS

The following paragraph shall be added in its entirety:

"Compliance with the Standard Building Code, latest edition, and all local electrical and plumbing codes shall be required. In the event of a conflict in code requirements, the most stringent code or standard shall apply."

G-4.05 EQUIVALENT QUALITY

Add the following sentence to paragraph two: "Any professional fees associated with shop drawing review of materials or equipment submitted for approval as equivalent to that specified shall be borne by the Contractor.

2.4 SECTION 5 INSPECTION AND TESTING

G-5.06 PRELIMINARY FIELD TESTS

G-5.07 FINAL FIELD TEST

A. Add the following sentence to BOTH of the above paragraphs:

The Contractor shall provide, at NO EXTRA COST to the City, ALL labor, tools, equipment, materials, etc., for the Engineer and/or Architect to make any field test that may be required in the judgment of the Engineer and/or Architect.

2.5 SECTION 6 TEMPORARY STRUCTURES

G-6.03 CONTRACTOR'S FIELD OFFICE

A. Delete this paragraph G-6.03 in its entirety.

2.6 SECTION 7 TEMPORARY SERVICES

G-7.07 TELEPHONE

The Contractor shall furnish the Engineer with a telephone number(s) by which the Engineer may contact the site.

## 2.7 SECTION 14 MISCELLANEOUS

### G-14.04 USE OF EXPLOSIVES:

Explosives will not be used on the work except when authorized by the Engineer and/or Architect. 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.

### G-14.05 OWNERSHIP OF MATERIALS:

The removal of any underground and surface structures as required shall be performed in a careful manner to permit salvaging of as much material, such as pipe and brick, also broken section of sidewalk, as practical for use in repair and maintenance of City-owned facilities.

Such acceptable salvaged material remains the property of the City and shall be placed in stock piles so as not to interfere with new construction work but accessible for loading and hauling by the City or by the Contractor within the free haul limit of six (6) miles. The Engineer and/or Architect shall direct the Contractor as to the location of stockpile.

The paving material, such as vitrified brick, asphalt block and other paving materials removed from the excavated areas and suitable for reuse but not reused in the work, shall also be considered the property of the City. The handling of such materials shall be as set forth elsewhere in the Specifications or Special Provisions.

### G-14.06 NOTICE OR SERVICE THEREOF:

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

Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office 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 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 Contract Administration Department – Construction Management Division, 3808 East 26<sup>th</sup> Avenue, Tampa, Florida 33605, and any notice to or demand upon the City shall be sufficiently given if delivered to the office of the said Engineer and/or Architect, 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 said Engineer and/or Architect 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.

### G-14.07 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 and/or Architect 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 by him,

which will be used as the basis for the development of an overall operational schedule and a list of subcontractors to be used on this work.

All items of work on 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 and/or Architect 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 and/or Architect.

The Contractor shall conduct his operations in such a manner as will result in a 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.

G-14.08 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 for completion. "Without invalidating the Agreement, 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."

G-14.09 RESERVED PARKING SIGNS IN PARKING METER AREAS

The Contractor shall reimburse the Department of Public Works, 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, or because of, construction activity by the Contractor. Private automobiles may not be parked in any reserved space, unless clearly marked as associated with the project.

In order to receive temporary or permanent reserved signs in parking areas which are required 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. Meter Removal: The charge for removing a meter is ten (10) times the hourly meter fee, with a minimum charge of \$12.50. Such charge will be assessed for each day a meter is removed, excluding Saturdays, Sundays, and City holidays.
2. Reservation of Parking Metered Spaces During Hours of City Parking Division Operation: The charge for reservation of a metered space is ten (10) times the hourly meter fee. Such charge will be assessed for each day a meter is reserved. The minimum total charge per rental agreement is \$12.50.
3. Reservation of Parking Metered Spaces During Hours of City Parking Division Non- Operation: The charge for reservation of a metered space during hours of non-operation shall be \$2.00. Such charge will be assessed for each day a meter is reserved. The minimum charge per rental agreement is \$12.50.
4. Reservation of Parking Metered Spaces During Hours of City of Tampa Parking Division Operation and Non-Operation: Meter reservation periods, which include both operation and non-operational hours, shall be charged the operational rate.

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 Department of Public Works, 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. The meter removal/installation charge is \$7.50 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 Department of Public Works, Parking Division for meter(s) repaired or replaced.

G-14.10 EROSION AND SEDIMENT CONTROL:

During construction, the Contractor shall provide adequate erosion and sediment controls to prevent adverse effects to the environment and public and private property. He shall construct and maintain control structures necessary to prevent erosion and sediment. He shall conduct and schedule construction operations to avoid, prevent, and minimize erosion and sediment. He shall comply with City, County, State, and Federal codes, laws, and regulations and the plans and specifications for this project pertaining to erosion and sediment prevention and control.

At the Preconstruction Conference, the Contractor shall present a plan for erosion and sediment prevention and control. This plan shall include the operations methods, also temporary and permanent control measures and structures to be used on this project.

G-14.11 ENGINEER'S FIELD OFFICE:

Not Applicable.

G-14.12 PROJECT SIGNS:

The Contractor shall furnish and install, as directed by the Engineer and/or Architect, a project sign of design, size, color, etc., as per drawing page SIGN-1.

G-15.0 NOTIFICATION TO CONTRACTORS:

All Contractors working in City of Tampa buildings and facilities that contain ACM will be provided with a written notice, including contract custodial firms. The notice when applicable will advise Contractors about the possibility of encountering ACM while working for the City and will require Contractors to become familiar with locations of ACM within their work areas. The Contractor Notice shall include the name and phone number of the designated Building Asbestos Contact Person assigned to that building/facility. This notice is provided in Appendix C.

## Appendix C

### Contractor Notification Requirements

Asbestos-Containing Material (ACM) may be present in the facility. The presence of ACM does not necessarily mean that a hazard exists; however, a hazard may be created when ACM is disturbed and asbestos fibers become airborne. The best way to maintain a safe environment is to avoid the disturbance of ACM.

It is possible that you may encounter ACM while working in the facility. On the bulletin board, there is a summary of known locations of ACM in that building. The summary may or may not be all inclusive. Therefore, workers must exercise caution and be watchful for materials that might contain asbestos. Avoid disturbing ACM or suspected ACM as you carry out your work.

If your work necessitates the disturbance of ACM you shall take whatever precautions that are necessary to protect human health and the environment from asbestos fibers. At minimum, you will comply with all Federal, State, and Local responsible for assuring that you are medically certified, trained, and equipped with the proper personal protective devices for safe handling of ACM. You must notify the designated Building Asbestos Contact Person before disturbing any asbestos-containing materials in City-Owned buildings. The designated Building Asbestos Contact Person is listed on the bulletin board with the asbestos location summary.

If you need additional information regarding ACM in a particular building or would like to see a copy of the Operations and Maintenance Plan, contact the Building Asbestos Contact Person responsible for the building for which you will be working.

Comply with all regulatory requirements for removal and disposal.



**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 my 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.

# Building a Better Tampa

## Downtown Riverwalk

Creates a waterfront pedestrian walkway connecting the south edge of the CapTrust building with MacDill Park.

\$1.5 Million investment  
Scheduled for completion in October, 2012

Orion Marine  
Construction, Inc.

# Improvement Project



Mayor Bob Buckhorn

Project Contact:  
Jim Hudock, P.E.  
Contract Administration  
City of Tampa  
jim.hudock@tampagov.net

For information call:  
(813) 635-3400



### Sign Information

## Building a Better Tampa

## Downtown Riverwalk

*Creates a waterfront pedestrian walkway connecting the south edge of the CapTrust building with MacDill Park.*

*\$1.5 Million investment  
Scheduled for completion in October 2012*

*Orion Marine  
Construction, Inc.*

### Colors

Blue: Sherwin Williams Naval SW6244

Green: Sherwin Williams Center Stage SW6920

White: Sherwin Williams Pure White SW7005

### Font

Franklin Gothic

**SIGN EXAMPLE ONLY GRAPHIC TO BE DEVELOPED BY CONTRACTOR**

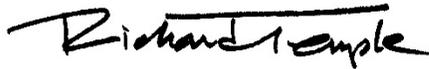
scale: 3"



SECTION 00 01 07

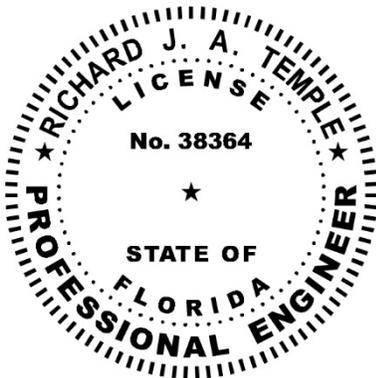
SEALS PAGE

I HEREBY CERTIFY THAT THESE PLANS AND TECHNICAL SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.



---

Richard J.A. Temple, P.E. FL PE No. 38364  
Firm Certificate of Authorization No. 3818



END OF SECTION 000107

SECTION 01 10 00

TASK ITEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division-1 Specification sections, apply to work of this section.

1.2 TASK ITEM (T.I.) DESCRIPTION

T.I. 1.1 PROJECT MOBILIZATION

A. Scope of Work

- 1. Work consists of coordinating, scheduling, obtaining and assembling at construction site all equipment, materials, permits, supplies, manpower and other essentials and incidentals necessary to perform Work defined in this Contract.

T.I. 1.2 CONCRETE FORMWORK

A. Scope of Work

- 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to install shoring and formwork as required for cast-in-place concrete.

T.I. 1.3 ELEVATION SURVEY

A. Scope of Work

- 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to conduct elevation surveys of existing roadway surface in area of work denoted on Drawings in order to establish reference elevations to all pertinent working points before and after topping removal.

B. Materials/Equipment

- 1. Licensed professional surveyor and equipment.

C. Execution

- 1. Prior to start of work, Contractor and Surveyor to meet with Engineer to identify minimum required elevation reference points and benchmark. Benchmark shall be clearly marked and protected throughout the construction to prevent damage.
- 2. Contractor/Surveyor will be provided with background drawings. Surveyor shall submit copies of survey results to Owner, Engineer and Contractor within one week of completing each survey.

3. Conduct an initial survey before topping slab demolition. Additional surveys shall be performed after installation of new topping as necessary to verify final elevations and slopes.

T.I. 2.0 REMOVE EXISTING CONCRETE TOPPING SLAB, EXPANSION JOINTS AND WATERPROOFING MEMBRANE

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary for the removal of the existing concrete topping slab, expansion joint seals and waterproofing membrane. Special care should be taken to ensure that the structural concrete floor slab is not damaged during the removal of the topping slab. Refer to Plan Sheets for location of work.

B. Materials/Equipment

1. Demolition equipment shall be sized to prevent damage to beams, slabs or other structural/architectural items to remain.
2. Materials for concrete repairs shall be specified in Section "Concrete Repair Materials."

C. Execution

1. Prior to beginning demolition, field measure and document all existing traffic line stripping and other traffic markings. Contractor shall submit the existing line stripping and traffic markings with typical dimensions noted on plan sheets to the Engineer and Owner. Refer also to Task Item No. 7.0.
2. Remove concrete topping with equipment and methods appropriate to prevent damage to structural slab, beams and columns.
3. Remove existing expansion joint seals, joint armoring, etc.
4. Remove waterproofing membrane by abrasive blast cleaning concrete surfaces uniformly to expose top surface of fine aggregate according to ASTM D 4259 with a self-contained, recirculating, blast-cleaning apparatus. Remove material to provide a sound surface free of laitance, glaze, efflorescence, curing compounds, concrete hardeners, or form release agents. Remove remaining loose material and clean surfaces according to ASTM D 4258.
5. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids. Concrete repairs to unsound concrete in the structural slab are incidental to this task item.
6. Contractor shall locate and mark all work areas as specified in Section "Surface Preparation for Patching." Marking will be done with methods approved by Engineer and Owner. Contractor shall identify all critical work areas before starting the work.

7. Procedure for repair of delaminated, spalled and unsound concrete in existing structural concrete slab shall be as specified in Section "Surface Preparation for Patching."

T.I. 2.3 PARTIAL DEPTH CONCRETE FLOOR REPAIR

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, staging, formwork, supervision, and incidentals necessary to locate existing spalls, locate and remove full delaminated and unsound concrete from conventionally cast-in-place structural slab below topping, prepare cavities, and install repair materials to restore concrete floor slab to original condition and appearance. Refer to Detail 5/S2.2 for specific requirements. Refer to Plan sheets for location of work. Contractor shall locate and mark all delaminated, spalled and unsound concrete requiring repair for verification by Engineer before proceeding with the work.

B. Materials

1. Material for repair areas shall be as specified in Section "Concrete Repair Materials."

C. Execution

1. Contractor shall locate and mark all work areas as specified in Section "Surface Preparation for Patching." Marking will be done with methods approved by Engineer and Owner. Contractor shall identify all critical repair work areas before starting the work.
2. Procedure for delaminated, spalled, and unsound concrete removal shall be as specified in Section "Surface Preparation for Patching."
3. All steel exposed within cavities shall be cleaned to bare metal by abrasive methods or other approved methods as specified in Section "Surface Preparation for Patching."
4. Exposed steel shall be epoxy coated with an approved epoxy product as specified in Section "Surface Preparation for Patching."
5. Contractor shall prepare cavities for repair placement as specified in Section "Surface Preparation for Patching."
6. Patch installation procedures shall be in accordance with referenced specifications for selected material.

T.I. 3.0 INSTALL NEW TWO-COAT EPOXY POLYMER COATING

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals including necessary to install new epoxy polymer coating to surface of structural concrete slab located below topping slab. This task item includes all work necessary to prepare existing concrete surface for installation of membrane in

accordance with manufacturer's recommendations. Such incidental work may include detail coat over cracks, etc. Refer to Plan sheets for location of work.

B. Materials

1. Approved materials for use in this Task Item are as specified in Section "Deck Waterproofing."

C. Execution

1. Per Section "Epoxy Polymer Coating" and manufacturer's recommendations.
2. Contractor shall coordinate periodic monitoring of installation by representative of epoxy polymer coating manufacturer.
3. For bidding purposes bidder shall develop quantities for demolition of existing concrete topping slab and installation of new concrete topping slab based on existing roadway topping slab elevations and structural slab elevations provided in drawings. Actual elevations could vary from those provided on drawings. For bidding purposes bidder should include an additional 25 percent for the bid pricing for item 2.0 and 5.0.

T.I. 3.0A INSTALL NEW WATERPROOFING MEMBRANE

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals including necessary to install new waterproofing membrane including drainage board, protection board and slip sheet to surface of structural concrete slab located below topping slab. This task item includes all work necessary to prepare existing concrete surface for installation of membrane in accordance with manufacturer's recommendations. Such incidental work may include detail coat over cracks, etc. Refer to Plan sheets for location of work.

B. Materials

1. Approved materials for use in this Task Item are as specified in Section "Hot Fluid Applied Waterproofing."

C. Execution

1. Floor surface preparation shall be performed by waterproofing system applicator or under its direct supervision.
2. Waterproofing membrane shall be installed by licensed applicators in strict accordance with manufacturer's recommendations.
3. Installation of joint and cove sealants were required, is incidental to waterproofing membrane work.

4. Work shall be done in strict conformance with manufacturer's specifications.
5. Contractor shall coordinate periodic monitoring of installation by representative of waterproofing manufacturer.

T.I. 3.0B INSTALL NEW THREE-COAT MULTI-POLYMER COATING

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals including necessary to install new three-coat multi-polymer coating to surface of structural concrete slab located below topping slab. This task item includes all work necessary to prepare existing concrete surface for installation of membrane in accordance with manufacturer's recommendations. Such incidental work may include detail coat over cracks, etc. Refer to Plan sheets for location of work.

B. Materials

1. Approved materials for use in this Task Item are as specified in Section "Deck Waterproofing."

C. Execution

1. Per Section "Deck Waterproofing" and manufacturer's recommendations.
2. Contractor shall coordinate periodic monitoring of installation by representative of coating manufacturer.

T.I. 4.0 INSTALL NEW EXPANSION JOINTS

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, formwork, supervision, and incidentals necessary to locate work areas, repair existing concrete blockout to conform to requirements of expansion joint manufacturer and install new expansion joint systems. Refer to Plan Sheets for location of work. Refer to Details 3/S2.1, 4/S2.1, 5/S2.1 and 6/S2.1 for specific requirements.

B. Materials

1. Materials for concrete repairs shall be as specified in Section "Concrete Repair Materials."
2. Expansion joint systems shall be as specified in Section "Expansion Joints" and in referenced Details.

C. Execution

1. Contractor shall remove existing expansion joint system materials in manner that minimizes damage to adjacent concrete. Alterations, repairs and modifications to existing expansion joint blockout required for installation of new expansion joint systems shall be incidental in this task item.
2. Coordinate this task item with owner representative in order to produce minimum disruptions to the patrons.
3. All sound and unsound concrete shall be removed by sawcutting and chipping to sufficient width and depth. Caution shall be exercised near surface of concrete.
4. Procedure for delaminated, spalled, and unsound concrete removal shall be specified in Section "Surface Preparation for Patching."
5. All steel exposed within cavities shall be cleaned to bare metal by abrasive methods or other approved methods as specified in Section "Surface Preparation for Patching."
6. Exposed steel shall be epoxy coated with an approved epoxy product as specified in Section "Surface Preparation for Patching."
7. Contractor shall prepare cavities for repair placement as specified in Section "Surface Preparation for Patching."
8. Patch installation procedures shall be in accordance with referenced specifications for selected material.
9. Install new expansion joint system in strict accordance by manufacturer's instructions.
10. In-place testing: Test primary and secondary joint seals separately for leaks with 2 in. water depth maintained continuously for 12 hours. Repair leaks revealed by examination of seals underside. Repeat test and repairs until all leaks stopped for full 12 hours. Primary seal refers to upper silicone seal and secondary seal refers to the lower pre-manufactured expansion joint seal (see Details).

T.I. 5.0 INSTALL NEW CONCRETE TOPPING SLAB

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, shoring, formwork, supervision, and incidentals necessary to install new concrete topping slab on roadway. Refer to Plan Sheets for location of work.

B. Materials

1. Material for topping slab shall be as specified in Section "Concrete Reinforcing" and Section "Cast-in-Place Concrete."

- C. Execution
  - 1. Contractor shall install new concrete topping slab including reinforcing steel, construction and control joints, joint sealants, dowels, etc. as specified in the project drawings and specifications.
  - 2. Final topping slab surface elevations and slopes shall match existing roadway elevations and slopes. Refer to Task Item No. 1.3.
  - 3. Curing of new concrete topping slab shall be in strict accordance with project specifications.
  
- T.I. 5.1 INSTALL NEW CONCRETE TOPPING SLAB
  - A. Scope of Work
    - 1. Work consists of furnishing all labor, materials, equipment, formwork, supervision, and incidentals necessary to install new colored and/or stamped concrete topping slab on roadway. Refer to Plan Sheets for location of work.
  - B. Materials
    - 1. Material for topping slab shall be as specified in Section "Concrete Reinforcing" and Section "Cast-in-Place Concrete."
  - C. Execution
    - 1. Contractor shall prepare 2 ft. by 2 ft. mockup sample for each type of stamped and/or colored concrete for City, HISCA and Engineer approval prior to commencing with placement of new topping slab.
    - 2. Contractor shall install new concrete topping slab including reinforcing steel, construction and control joints, joint sealants, dowels, etc. as specified in the project drawings and specifications.
    - 3. Final topping slab surface elevations and slopes shall match existing roadway elevations and slopes. Refer to Task Item No. 1.3.
    - 4. Curing of new concrete topping slab shall be in strict accordance with project specifications.
  
- T.I. 6.0 CONCRETE PENETRATING SEALER
  - A. Scope of Work
    - 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to removing any traffic floor markings, clean the existing concrete floor surface, and installing penetrating sealer, and replacing traffic floor marking to match original.

- B. Materials
    - 1. Refer to Section "Concrete Penetrating Sealers."
  - C. Execution
    - 1. Contractor shall identify and mark all locations of work.
    - 2. Clean concrete surface to remove dirt and debris, leaving the concrete surface porous.
    - 3. Install sealer in strict accordance to manufacturer's recommendations.
- T.I. 7.0 RE-STRIPING
- A. Scope of Work
    - 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to locate existing traffic striping and other traffic markings and re-striping.
    - 2. Record existing traffic striping and traffic markings and submit plan to Engineer and Owner prior to starting work.
  - B. Materials
    - 1. Traffic striping and traffic markings shall be high performance preformed contrast tape (FDOT Specification Section 713).
  - C. Execution
    - 1. Field measure and document existing line striping and traffic markings. Contractor shall submit the existing line striping and traffic markings with typical dimensions noted on plan sheets to the Engineer and Owner before proceeding with work.
    - 2. Locate, layout and paint traffic stripes and traffic markings matching existing pattern.
- T.I. 7.1 CRACK REPAIR
- A. Scope of Work
    - 1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to locate, prepare, rout and seal random cracks in cast-in-place concrete floor slab. Refer to Detail 6/S2.2 for specific requirements. Refer to Plan Sheets for location of work.
  - B. Materials
    - 1. Approved materials to be used in this Work are specified in Section "Joint Sealants."

2. Joint sealant material shall be compatible with waterproofing materials specified in Section "Joint Sealants."

C. Execution

1. Contractor shall thoroughly inspect concrete slabs for cracks in the areas shown in the drawings. Those identified as either greater than 1/32 in. wide or showing evidence of water and/or salt staining on ceiling below shall be sealed.
2. All cracks identified for repair shall be marked to aid in precision routing. Obtain depths to top reinforcing bars in area of repair by use of non-destructive methods.
3. Determine depth of electrical conduit (if applicable). Do not exceed ½ of this depth of routing where the crack to be repaired crosses the embedded items. Damage to embedded items will require repair or replacement at no cost to the Owner.
4. Cracks shall be ground or saw-cut to an adequate width and depth as required by Detail. Routing shall be performed by mechanized device that has positive mechanical control over depth and alignment of cut.
5. Cavities shall be thoroughly cleaned by either abrasive methods or grinding to remove all laitance, unsound concrete and curing compounds which may interfere with adhesion. Groove shall be air blasted to remove remaining debris.
6. Sealant materials and associated reference specifications are listed in Section "Joint Sealants." Sealant installation procedures shall be in accordance with referenced specifications for selected material.

T.I. 8.0 INSTALL NEW DECK DRAINS

A. Scope of Work

1. Work consists of furnishing all labor, materials, equipment, supervision, and incidentals necessary to install new deck drains in structural slab and connect drains to existing stormwater drainage system. Refer to Plan Sheets for location of work.

B. Drawings

1. Refer to Plan Sheets.

END OF SECTION 01 10 00

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including conditions included by Owner.

1.2 GENERAL DESCRIPTION OF WORK:

- A. The Work of this Contract will be performed on the roadway as shown on Drawings.
- B. Contractor shall furnish all material, labor, tools, supplies, permits, equipment, transportation, superintendence, barricades, temporary construction of every nature, insurance, taxes, contributions and all services and facilities, unless specifically excepted, and install all materials, items, and equipment required to complete the construction of the Project, as set forth in the Contract Documents.
- C. Refer to Section "Task Items" for a description of work. Task Item specifications, details, and drawings shall govern all repair operations. Locations where Task Items apply are shown on Drawings as symbols.
- D. Final Payment shall be made on basis of actual approved Work performed as measured in place.

1.3 MEASUREMENTS:

- A. Before ordering any material or doing any Work, Contractor shall verify all measurements at Project Site and shall be responsible for correctness of same.
- B. Cost of Work included in each Task Item for quantities as indicated in Contract Documents shall be included in Base Bid.

1.4 WORK SEQUENCE:

- A. Prior to commencement of Work, meet with Engineer and Owner representatives to establish sequence and schedule of Work. Contractor shall give Owner notice of areas to be cleared at least 7 working days in advance of actual Work.
- B. Contractor shall notify Owner's representative at least 24 hrs. prior to commencing any abrasive blasting such as sandblasting, etc. operations.
- C. Work will be conducted in phases to provide least possible interference to activities of Owner's personnel and facility users.
  - 1. Contractor's work hours shall be limited to comply with noise ordinances. Contractor is allowed to work as necessary to complete work within Owner's time schedule and conditions conducive to temperature sensitive materials.
- D. Contractor shall remove debris from Work area on daily basis and dispose of same at authorized sites.

- E. Contractor shall remove dust and air transported material from remainder of property/facility at conclusion of operations in Work area.

1.5 CONTRACTOR'S USE OF PREMISES:

- A. Contractor shall limit his use of adjacent premises for Work, construction operations and for storage to allow for:
  - 1. Public use, including parking.
  - 2. Owner Occupancy:
    - a. Where it is necessary for the Contractor to use portions of existing buildings and/or grounds for operations, such use shall be strictly in accordance with requirements and approval of the Owner.
    - b. Contractor shall organize his work in order that inconvenience to the people in the facility is minimized.
    - c. Keep driveways and entrances serving the premises clear and available to the Owner and Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
    - d. Unless otherwise indicated or specified, or unless otherwise directed by Owner; water, gas, lighting, power and telephone conduits and wires, sewer lines, and other surface and subsurface structures and lines, shall be maintained by Contractor and shall not be disturbed, disconnected or damaged by him during progress of Work; provided that should Contractor in performance of Work disturb, disconnect or damage any of above, expenses arising from disturbance or in replacing or repair shall be borne by Contractor.
  - 3. Contractor shall:
    - a. Not unreasonably encumber Site with materials and equipment.
    - b. Not load structure with weight that will endanger structure.
    - c. Assume full responsibility for protection and safekeeping of stored products.
    - d. Move stored products which interfere with operations of Owner.
    - e. Obtain and pay for use of additional storage and work areas needed for operations.
  - 4. Contractor Parking:
    - a. Contractor's personal vehicles shall park outside of construction area. Only vehicles equipment or delivering materials should be in zone. Coordinate with owner's representative.

1.6 OWNER OCCUPANCY:

- A. Cooperate with the Owner's Representative in all construction operations to minimize conflict and to facilitate Owner usage.
- B. Contractor shall at all times conduct his operations as to ensure the least inconvenience to the general public.

1.7 SURVEY OF EXISTING CONDITIONS:

- A. Contractor acknowledges by submitting a Bid, that he has visited and inspected the Project Site in which the Work is to be performed, that he has satisfied himself as to the nature and location of the Work, including any obstructions, amount of work, actual levels, the equipment and facilities needed preliminary to and during the prosecution of the Work, and all other matters which can in any way affect the Work or the cost thereof under this Contract.
- B. Failure by Contractor to have acquainted himself with available information concerning Site conditions, including factors affecting costs and liabilities, shall not relieve Contractor of responsibility for performance of Work in accordance with requirements of Contract Documents, and for amount of consideration named or otherwise determined.

1.8 INFORMATION OR CLARIFICATION OF CONDITIONS

- A. When Contractor encounters a condition requiring further information or a clarification, Contractor shall submit to Walter P. Moore and Associates a written Request For Information (R.F.I.) numbered sequentially. Walter P. Moore and Associates will respond in writing to all R.F.I.'s.

END OF SECTION 01 11 00

SECTION 01 45 29

STRUCTURAL TESTING AND INSPECTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for quality assurance and quality control to be completed by the Testing Laboratory and Contractor for the following structural items:
  - 1. Concrete Reinforcing.
  - 2. Cast-in-Place Concrete.
  - 3. Earthwork.

1.3 PRICE AND PAYMENT PROCEDURES

- A. Unit Prices:
  - 1. Cost Proposal: The Testing Laboratory's proposal shall contain unit price stipulations for specified tests and inspections and on an hourly basis for personnel. A total estimated price shall also be submitted.
- B. Measurement and Payment
  - 1. Payment of the Testing Laboratory: The Contractor will pay for the initial Laboratory services for inspection and testing of materials for compliance with the requirements of the Contract Documents.
  - 2. Payment for Substitution Testing: The Contractor shall arrange for and pay for any additional samples and tests above those required by the Contract Documents as requested by the Contractor for his convenience in performing the work.
  - 3. Payment for Retesting: When initial tests indicate work does not comply with the requirements of the Contract Documents, the Contractor shall be liable for the cost for any additional inspections, sampling, testing, and retesting done by the Testing Laboratory.
  - 4. Payment by Contractor: The Contractor shall furnish and pay for the following items if required:
    - a. Concrete mix designs as prepared by his concrete supplier.
    - b. Site-situated storage boxes for concrete cylinders
    - c. Concrete coring, tests of below strength concrete, and load tests, if ordered by the Owner or Engineer.
    - d. Certification of reinforcing steel mill order.
    - e. Certification of portland cement, lime, fly ash.

- f. Tests, samples, and mock-ups of substitute material where the substitution is requested by the Contractor and the tests are necessary in the opinion of the Engineer to establish equality with specified items.
  - g. The making and testing of concrete cylinders for the purpose of evaluating strength at time of re-opening roadway to traffic or the time spent evaluating the in situ strength of concrete using the Maturity Method.
  - h. Any other tests when such costs are required by the Contract Documents to be paid by the Contractor.
5. Payment for Tests of Suspected Deficient Work: If, in the opinion of the Building Official, Owner, or Engineer, any of the work of the Contractor is not satisfactory, the Contractor shall furnish and pay for all tests that the Owner or Engineer deem advisable to determine its proper construction.

1.4 OWNER RESPONSIBILITIES

- A. The Owner shall provide a copy of the project plans and specifications to the Testing Laboratory prior to the start of construction and prior to any preinstallation meetings.

1.5 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall engage a Testing Laboratory for construction services on behalf of the Owner as agreed to by the Owner.
- B. Furnishing Samples and Certificates: The Contractor shall provide to the laboratory certificates and representative samples of materials proposed for use in the work in quantities sufficient for accurate testing as specified.
- C. Furnishing Casual Labor, Equipment and Facilities: The Contractor shall furnish casual labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate the required inspections and tests.

1.6 TESTING LABORATORY RESPONSIBILITIES

- A. The Testing Laboratory shall sample and test materials as they are being installed for compliance with specified acceptance criteria. The Testing Laboratory will report and interpret the test results. The Laboratory shall monitor and report on the installation of construction work and shall perform tests on the completed construction as required to indicate Contractor's compliance with the various material specifications governing this work.
- B. The Testing Laboratory shall provide inspections on the following items:
  - 1. Verification of use of required design mixture.
  - 2. Concrete placement, including conveying and depositing.
  - 3. Curing procedures and maintenance of curing temperatures.
  - 4. Verification of concrete strength before re-opening roadway to traffic.
- C. Inspections Required by Government Agencies: The Testing Laboratory shall perform inspections and submit reports and certifications as required by government agencies having jurisdiction over the aspects of the project covered by this specification.

- D. Notification of Deficiencies in the Work: The Testing Laboratory shall notify the Engineer and Contractor within 24 hours of discovery of observed irregularities and deficiencies of the Work and other conditions not in compliance with the requirements of the Contract Documents. Notification shall be by telephone or e-mail and then in writing.
- E. Monitoring Product and Material Certifications: The Testing Laboratory shall be responsible for monitoring the submittals of product and material certifications from manufacturers and suppliers as specified in the Specifications and shall report to the Owner and Engineer when those submittals are not made in a timely manner.
- F. Limitations of Authority: The Testing Laboratory is not authorized to revoke, alter, relax, enlarge upon, or release any requirements of the Specifications or to approve or accept any portion of the work or to perform any duties of the General Contractor and his Subcontractors.

## 1.7 ADMINISTRATIVE REQUIREMENTS

### A. Coordination:

- 1. The Testing Laboratory shall cooperate with the Engineer and Contractor and provide qualified personnel promptly on notice.
- 2. The Contractor shall cooperate with Testing Laboratory personnel and provide access to the work and to manufacturers' operations.
- 3. Notification of Source Change: The Contractor shall be responsible for notifying the Owner, Engineer, and Testing Laboratory when the source of any material is changed after the original tests or inspections have been made.

### B. Preinstallation Meetings: The Testing Laboratory shall attend preinstallation meetings with the Engineer, Contractor, and material suppliers as required to coordinate materials inspection and testing requirements with the planned construction schedule and shall participate in such meetings throughout the course of the project.

### C. Scheduling:

- 1. Advance Notice: The Contractor shall be responsible for notifying the Testing Laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests. Failure to sufficiently notify may result in additional costs incurred by the Testing Laboratory that will be the Contractor's responsibility.

## 1.8 SUBMITTALS

### A. Quality Control Reports:

- 1. Information on Reports: The Testing Laboratory shall submit copies of reports of inspections and tests promptly. The reports shall contain at least the following information:
  - a. Project name.
  - b. Date report issued.
  - c. Testing Laboratory name and address.
  - d. Name and signature of inspector/technician.
  - e. Date of inspection and/or sampling.
  - f. Date of test.
  - g. Identification of product and Specification section.

- h. Location in the project.
    - i. Identification of inspection or test.
    - j. Record of weather conditions and temperature.
    - k. Results of test regarding compliance with Contract Documents.
  - 2. Copies: The Laboratory shall send signed copies of test and inspection reports to the following parties:
    - a. Electronic copies to the Owner or his/her representative, General Contractor and Engineer of Record.
- B. Discrepancy Log: The Testing Laboratory shall create and maintain a log of all discrepancies throughout the duration of the project.
  - 1. Information on Log: This log shall include, but is not limited to:
    - a. Discrepancy date.
    - b. Description of discrepancy.
    - c. Drawing and/or detail reference.
    - d. Description of as-built condition.
    - e. Description of any remedial work performed.
    - f. Status of discrepancy.
  - 2. Submission Schedule: This log shall be submitted to the Engineer on a periodic basis for review and comment. Upon completion of the Project, this log shall be submitted in its entirety as an attachment to the final signed report described below under Certifications.
- C. Certification: Upon completion of the job, the Laboratory shall furnish to the Owner and Engineer of Record, a statement signed by a licensed professional engineer that, to the best of their knowledge, required tests and inspections were made in accordance with the requirements of the Contract Documents.

## 1.9 QUALITY ASSURANCE

- A. Qualifications of Testing Laboratory:
  - 1. The Testing Laboratory shall meet the basic requirements of ASTM E 329 and shall submit to the Owner and Engineer evidence of current accreditation from the American Association for Laboratory Accreditation, the AASHTO Accreditation Program or the "NIST" National Voluntary Laboratory Accreditation Program.
  - 2. The Testing Laboratory shall be an Approved Agency by the Building Official to perform Special Inspections and other tests and inspections as outlined in the applicable building code.
  - 3. Tests and inspections shall be conducted in accordance with specified requirements, and if not specified, in accordance with the applicable standards of the American Society for Testing and Materials or other recognized and accepted authorities in the field.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCOPE OF WORK

- A. The work to be performed by the Testing Laboratory shall be as specified in this Section of the Specification and as determined in meetings with the Owner and Engineer.

3.2 CAST-IN-PLACE CONCRETE

A. Quality Assurance:

- 1. Concrete Mix Designs: The Testing Laboratory shall review the submitted mix designs for conformance to the specifications and for suitability for use in the project.
- 2. Preinstallation Meetings: The Testing Laboratory shall attend the preinstallation meetings as noted in Specification 033000 "Cast-in-Place Concrete."

B. Field Testing: The following tests shall be completed by the Testing Laboratory:

1. Prior to Concrete Placement:

- a. Verify formwork at turndowns and slab edges is plumb and straight, braced against movement and lubricated for removal.
- b. Inspect reinforcement per REINFORCING STEEL section.
- c. Verify that the slab thickness and top-of-slab elevation is correct.
- d. Verify there is no standing water or debris in pour area.

2. During Concrete Placement:

- a. Record the amount of water added and note if it exceeds the amount allowed to be added shown in the approved mix design.
- b. Mold concrete test cylinders as specified below in Paragraph 4.a.
- c. Perform tests to determine slump, concrete temperature, unit weight, and air entrainment as specified below.
- d. Record information for concrete test reports as specified below.
- e. Pick up and transport to Laboratory cylinders cast the previous day.
- f. Verify that the concrete is not over 90 minutes old at the time of placement.
- g. Verify that Hot-Weather or Cold-Weather techniques are being applied as required.
- h. Verify that concrete deposited is uniform and that vertical drop does not exceed six feet and is not permitted to drop freely over reinforcement causing segregation.
- i. Verify that there are no cold joints.
- j. Verify that the concrete is properly vibrated.
- k. Verify that the finishing of the concrete surface is done according to specifications.
- l. Verify that sawcut control joints on roadway slab are cut within 12 hours of placement.

3. After Concrete Placement:
  - a. Verify that the curing process is according to specifications.
  - b. In-situ Concrete Strength Verification for Re-opening Roadway to Traffic: The Testing Laboratory shall perform the tests necessary to determine the concrete strength prior to re-opening roadway to traffic:
    - 1) If concrete strength for re-opening roadway to traffic is to be determined using field-cured cylinders, the cylinder shall be broken at the time of form removal as directed by the Contractor.
    - 2) If concrete strength for re-opening roadway to traffic is to be determined using the Maturity Method, the Testing Laboratory shall verify that the requirements of ASTM C 1074 are being followed and that the proper criteria for determining concrete strength by this method has been established and is being followed.
  - c. Investigation of Low Strength Concrete Test Results:
    - 1) Cost of Investigations for Low Strength Concrete: The Contractor is responsible for the costs of investigations of low strength concrete, as defined in Part I above.
    - 2) Scope of Investigations: See Specification Section 033000 "Cast-In-Place Concrete" for the investigations that may be required by the Engineer. The Testing Laboratory will conduct these investigations if required.
4. Standards for Concrete Tests:
  - a. Concrete Test Cylinders: Mold and test concrete cylinders as described below:
    - 1) Cylinder Molding and Testing: Cylinders for strength tests shall be molded and Laboratory cured in accordance with ASTM C 31 and tested in accordance with ASTM C 39. Cylinders may be either 6" in diameter by 12" or 4" in diameter by 8", however, the diameter of the cylinder shall be at least three times the nominal maximum size of the coarse aggregate in the mix tested. All of the cylinders for each class of concrete shall be of the same dimension for all sets of that class.
    - 2) Field Samples: Field samples for strength tests shall be taken in accordance with ASTM C 172 **at the point of placement**.
    - 3) Quantity of Cylinders: Each set of test cylinders shall consist of a minimum of four standard test cylinders. If concrete strength for re-opening roadway to traffic is to be determined using field-cured cylinders, one additional cylinder per set will be required for the purpose of evaluating the concrete strength at the time of opening roadway to traffic. This cylinder shall be stored by the roadway section being opened to traffic under the same exposure conditions as the roadway concrete. The cylinder shall be cured under field conditions in accordance with ASTM C 31. Field-cured test cylinders shall be molded at the same time and from the same samples as laboratory-cured test specimens. The Contractor is responsible for the cost of making and testing these cylinders.
    - 4) Frequency of Testing: A set of test cylinders shall be made according to the following minimum frequency guidelines:
      - a) One set for each class of concrete taken not less than once a day.

- b) Roadway Slab: One set for each 150 cubic yards or fraction thereof but not less than one set for each 5,000 square foot of roadway area.
  - c) No more than one set of cylinders at a time shall be made from any single truck.
  - d) If the total volume of concrete is such that the frequency of testing as specified above would provide less than five strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.
  - e) The above frequencies assume that one batch plant will be used for each pour. If more than one batch plant is used, the frequencies cited above shall apply for each plant used.
- 5) The cylinders shall be numbered, dated, and the point of concrete placement in the roadway recorded.
  - 6) For concrete specified on the drawings to reach the required strength at 28 days, break one cylinder of the set at seven days, two 6" by 12" cylinders or three 4" by 8" cylinders at 28 days, and keep one in reserve for testing at the Engineer's direction.
  - 7) Cylinder Storage Box: The Contractor shall be responsible for providing a protected concrete cylinder wooden storage box at a point on the job site mutually agreeable with the Testing Laboratory for the purpose of storing concrete cylinders until they are transported to the Laboratory. The box shall be constructed and equipped to maintain the environment specified for initial curing in ASTM C 31.
  - 8) Transporting Cylinders: The Testing Laboratory shall be responsible for transporting the cylinders to the Laboratory in a protected environment such that no damage or ill effect will occur to the concrete cylinders including loss of moisture, freezing temperatures or jarring.
  - 9) Information on Concrete Test Reports: The Testing Laboratory shall make and distribute concrete test reports after each job cylinder is broken. Such reports shall contain the following information:
    - a) Truck number and ticket number.
    - b) Concrete Batch Plant.
    - c) Mix design number.
    - d) Accurate location of pour in the structure.
    - e) Strength requirement.
    - f) Date cylinders made and broken.
    - g) Technician making cylinders.
    - h) Concrete temperature at placing.
    - i) Air temperature at point of placement in the structure.
    - j) Amount of water added to the truck at the batch plant and at the site and whether or not it exceeds the amount allowed by the mix design.
    - k) Slump.
    - l) Unit weight.
    - m) Air content.
    - n) Cylinder compressive strengths with type of failure if concrete does not meet Specification requirements. Seven day breaks are to be flagged if they are less than 60% of the required 28 day strength. 28 day breaks are to be brought to the attention of the Architect and Engineer in writing if either cylinder fails to meet specification requirements.
- b. Slump Tests: Slump Tests (ASTM C 143) shall be completed at the beginning of concrete placement for each batch plant and for each set of test cylinders made.

The slump test shall be made from concrete taken from the end of the concrete truck chute. The concrete shall be considered acceptable if the slump is within the slump tolerance noted on the mix design submittal form for that class of concrete.

- c. Concrete Temperature: Concrete temperature at placement shall be measured (ASTM C 1064) at the same time slump tests are made as cited above.
- d. Roadway Surface Finish: The surface finish shall not exceed  $\frac{1}{4}$ " within a 10'-0" straightedge.

5. Evaluation and Acceptance of Concrete:

- a. Strength Test: A strength test shall be defined as the average strength of two six inch cylinder breaks or three four inch cylinder breaks from each set of cylinders tested at the time indicated above.
- b. Acceptance Criteria: The strength level of an individual class of concrete shall be considered satisfactory if both of the following requirements are met:
  - 1) The average of all sets of three consecutive strength tests equal or exceed the required f'c.
  - 2) No individual strength test falls below the required f'c by more than the greater of 10% of f'c or 500 PSI.
- c. If either of the above Acceptance Criteria requirements is not met, the Testing Laboratory shall immediately notify the Engineer by telephone. Steps shall immediately be taken to increase the average of subsequent strength tests.

C. Causes for Rejection of Concrete: The Contractor shall reject concrete delivered to the site for any of the following reasons:

- 1. Wrong class of concrete (incorrect mix design number).
- 2. Environmental Conditions: Environmental condition limits shall be as follows unless appropriate provisions in concreting practices have been made for cold or hot weather:
  - a. Cold Weather: Air temperature must be 40°F and rising or the average daily temperature cannot have been lower than 40°F for 3 consecutive days unless the temperature rose above 50°F for at least one-half of any of those 24 hour periods.
  - b. Hot Weather: Environmental conditions must be such that cause an evaporation rate from the concrete surface of 0.2 lb./sq. ft./hr. or less as determined by Figure 2.1.5 in ACI 305R-91.

Concrete may be placed at other environmental condition ranges only with approval of the job inspector for the Testing Laboratory or other duly appointed representative.

- 3. Concrete with temperatures exceeding 95°F shall not be placed in the structure.
- 4. Air contents outside the limits specified in the mix designs.
- 5. Slumps outside the limits specified.
- 6. Excessive Age: Concrete shall be discharged within 90 minutes of plant departure or before it begins to set if sooner than 90 minutes unless approved by the Laboratory job inspector or other duly appointed representative.

D. Concrete Batch Trip Tickets: Concrete batch trip tickets shall be collected and retained by the Contractor. Compressive strength, slump, air, and temperature tests shall be identified by reference to a particular trip ticket. Tickets shall contain the information specified in ASTM C 94. Each ticket shall also show the amount of water that may be added in the field for the entire batch that will not exceed the specified water cement ratio for the design mix. The Contractor

and Testing Laboratory shall immediately notify the Engineer and each other of tickets not meeting the criteria specified.

### 3.3 EARTHWORK – SOUTHERN END OF ROAD SURFACE REPLACEMENT

#### A. Field Testing:

##### 1. Compacted Fill:

- a. Verification of Fill Material: Perform classification and testing to verify that the fill material to be used complies with the project specifications.
- b. Field Density Testing: Perform field density testing as described below:
  - 1) Field density tests shall be run according to ASTM D 2937 or ASTM D 6938 as applicable.
  - 2) Acceptance Criteria: The results of field density tests by the Laboratory will be considered satisfactory if the average of any three consecutive tests has a value not less than the required density with no single test falling more than 2 percent below the required density and the moisture content conforms to the requirements of the specification.
  - 3) Test Frequency for Roadway Slab Subgrade:
    - a) Make at least four field density tests of the natural subgrade for every 1500 square feet of roadway slab-on-grade.
    - b) In each compacted fill layer or lift, make one field density test for every 500 square feet of roadway slab-on-grade but in no case less than three tests.
- c. Report Copies: Moisture-density curves and results of field density tests shall be submitted to the parties specified earlier in this section.
- d. Additional Testing: If reports by the Laboratory indicate field densities lower than specified, additional tests will be run by the Laboratory with at least the frequencies scheduled above on recompacted fill and/or natural subgrade. The Testing Laboratory shall notify the Contractor on a timely basis for any required retesting so as not to delay the work. The costs of such tests shall be the Contractor's responsibility.

#### B. Field Inspection by the Testing Laboratory:

1. The Testing Laboratory shall provide inspection of materials used in foundation elements as described below.
2. Compacted Fill:
  - a. Subgrade below Compacted Fill: Observe and verify that the subgrade below compacted fill has been properly prepared before compact fill construction begins.
  - b. During placement and compaction of fill, determine that the material being used and the maximum lift thickness comply with the specifications.

END OF SECTION 01 45 29

SECTION 03 01 01

SURFACE PREPARATION FOR PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the provisions of all labor, materials, supervision and incidentals required to locate and remove all delaminated and unsound concrete, including preparation of cavities created by removal to receive patching material and preparation of existing surface spalls to receive patching material.
- B. This Section applies to the repair of existing spalls in the structural concrete sub-slab below the existing concrete topping slab.
- C. Related Sections include the following:
  - 1. Division 03 Section "Concrete Repair Materials."
- D. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.
- E. Provide barricades around the work area with appropriate signage to keep non-construction people from entering work area.
- F. Contractor shall provide all traffic cones or barriers to direct traffic during the repair of the facility. This work shall be done in consultation with the Owner.

1.2 REFERENCES

- A. Applicable Standards:
  - 1. American Concrete Institute (ACI), latest version:

ACI 301	Specifications for Structural Concrete
ACI 546.1R	Guide for Repair of Concrete Bridge Structures
ACI 546R	Concrete Repair Guide

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

- A. Epoxy Coating for existing exposed non-prestressed steel reinforcement:
  - 1. BASF: Emaco P24
  - 2. Sika Chemical Corporation: Armatec 110
  - 3. Euclid Chemical: Duralprep A.C.

Substitutions may be considered provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.

Changes in products required to suit temperature and environmental conditions at the time of material application shall be specified as separate line items by the Contractor showing credit or additions to the price for the various tasks.

In using the above products, follow strictly the manufacturer's specifications and directions for mixing and application. Also heed all label warnings by manufacturer. Make application in accordance with applicable safety laws.

### PART 3 - EXECUTION

#### 3.1 INSPECTION

- A. Horizontal Surfaces
  - 1. Contractor shall sound all designated floor areas for delaminations.
- B. Delaminated areas: Once located by Contractor, Contractor shall further sound and mark them to define limits.
- C. Spalls: Contractor shall locate spalls by visual inspection, and mark boundaries.
- D. Engineer may mark additional unsound concrete for removal.
- E. Areas to be removed shall be rectangular to provide adequate appearance.
- F. Contractor shall locate and determine the depth of all embedded reinforcement, electrical conduit, post-tensioned tendons, in repair area and mark these locations for reference during concrete removal. Do not cut any embeds unless approved by Engineer.

#### 3.2 REPAIR PREPARATION

- A. Contractor shall review all marked removal and preparation areas and request clarification by Engineer of shoring requirements in questionable areas. Shores shall be in place prior to concrete removal and cavity preparation in any area requiring shores.
- B. All delaminated, spalled and unsound concrete shall be removed from within marked boundary to minimum depth of  $\frac{3}{4}$ " using 15 to 30 lb air hammers equipped with chisel point bits. When directed by Engineer, chipping hammers less than 15 lb shall be used to minimize damage to sound concrete. If delaminations exist beyond minimum removal depth, chipping shall continue until all unsound and delaminated concrete has been removed from cavity.
- C. Where embedded reinforcement, anchorages, or electrical conduit is exposed by concrete removal, proceed with caution to avoid damaging it during removal of unsound concrete. If bond between exposed embedded reinforcement/anchorages and adjacent concrete is impaired by Contractor's removal operation, Contractor shall perform additional removal around and beyond perimeter of reinforcement for minimum of  $\frac{3}{4}$ " along entire length affected at no cost to owner.
- D. Necessary approvals shall be obtained by the Contractor from authorizing governmental or other agencies prior to abrasive-blasting. Abrasive-blasting operations shall comply with the requirements of OSHA and NIOSH (National Institute for Occupational Safety and Health) Standard PB-246-697.

- E. If rust is present on embedded reinforcement where it enters sound concrete, additional removal of concrete along and beneath reinforcement will be required. Additional removal shall continue until non-rusted reinforcement is exposed, or may be terminated per Engineer's instructions.
- F. Removal of concrete for repair requires saw cutting  $\frac{3}{4}$ " into floor slab of the perimeter of the removal, unless a more stringent criteria applies. For vertical and overhead surfaces marked areas shall be saw-cut, ground, or chipped to depth of  $\frac{1}{2}$ " to existing concrete, measured from original surface.
- G. Edges of patch areas shall be dressed perpendicular to member face to eliminate feather edges. All edges shall be straight and patch areas square or rectangular-shaped.
- H. Contractor shall exercise extra caution during saw cutting to avoid damaging existing reinforcement particularly post-tensioned tendons, sheathing, electrical conduit and any other embedded items near surface of concrete. Any damage to existing embedded items shall be repaired by Contractor with Engineer's approved methods at no additional cost to Owner.

### 3.3 INSPECTION OF REPAIR PREPARATION

- A. After removals are complete, but prior to final cleaning, cavity and exposed reinforcement shall be inspected by Contractor and subject to verification by Engineer for compliance with requirements of this Section.
- B. Contractor shall inspect embedded reinforcement and conduits exposed within cavity for defects due to corrosion or damage resulting from removal operations. Contractor shall notify Engineer of all defective and damaged reinforcement or conduits. Replacement of damaged or defective reinforcement/conduits shall be performed in accordance to the requirements of this Section.

### 3.4 CLEANING OF REINFORCEMENT

- A. All exposed reinforcing steel shall be cleaned and free of rust and other contaminants. Cleaning shall be accomplished by abrasive methods. Cleaning shall be completed immediately before patch placement to insure that base metal is not exposed to elements and further rusting for extended periods of time. Use powered wire brushes in locations where reinforcing steel cannot be cleaned by abrasive-blasting or water-blasting.
- B. All exposed reinforcing steel shall be coated with a corrosion inhibiting product specified in the Section "Products" in this specification prior to mortar application. Protect prepared surfaces from damage prior to and during patch placement.

### 3.5 REINFORCEMENT IN REPAIR AREAS

- A. All embedded reinforcement exposed during surface preparation that has lost more than 10% of original cross-sectional area due to corrosion shall be considered defective. Defective reinforcement shall be supplemented in accordance to Engineer's instructions and shall be paid for by Owner.
- B. Damaged reinforcement caused during removals made by Contractor shall be supplemented in accordance to Engineer's instructions and shall be paid for by Contractor.

- C. Supplement defective or damaged embedded reinforcement of equal diameter with a Class B splice in accordance to ACI-318 beyond damaged portion of reinforcement. Secure new reinforcement to existing reinforcement with approved anchors. Supplemental steel shall be A615 Grade 60 steel except where more stringent requirements apply in drawings and/or details.
- D. Loose reinforcement exposed during surface preparation shall be securely anchored prior to patch placement. Loose reinforcement shall be adequately secured with wire ties to bonded reinforcement or with drilled-in anchors. Drilled-in anchors shall be TW-1400 anchors by ITW Ramset/Red Head, Tie-Wire Wedge-All anchors by Simpson Strong-Tie, or approved equal. Engineer will determine adequacy of wire ties and anchors. Securing loose reinforcement is incidental to surface preparation.
- E. Minimum of 1 ½" concrete cover shall be provided over all new/existing reinforcement except where more stringent requirements apply in drawings and/or details.

3.6 PREPARATION OF CAVITY FOR PATCH PLACEMENT

- A. Cavities will be examined prior to commencement of patching operations. Sounding surface shall be part of examination. Delaminations noted during sounding shall be removed as specified in this Section.
- B. All debris shall be removed from site prior to commencement of patching.

END OF SECTION 03 01 01

SECTION 03 01 05  
CONCRETE REPAIR MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the provisions of all labor, materials, supervision and incidentals required to prepare deteriorated or damaged concrete surfaces and install patching materials to restore original surface condition and integrity.
- B. This Section applies to the repair of existing spalls in the structural concrete sub-slab below the existing concrete topping slab.
- C. Related Sections include the following:
  - 1. Division 03 Section "Surface Preparation for Patching."
  - 2. Division 03 Section "Cast-in-Place Concrete."
- D. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.
- E. Contractor shall provide barricades around the work area with appropriate signage to keep non-construction people from entering work area.
- F. Contractor shall provide all traffic cones or barriers to direct traffic during the repair of the facility. This work shall be done in consultation with the Owner.

1.3 SUBMITTALS

- A. Make submittals in accordance with requirements of Division 01 and as specified in this Section.
- B. At the preconstruction meeting, contractor shall submit procedures to protect fresh patches from weather and traffic (if applicable).

1.4 QUALITY ASSURANCE

- A. Work shall conform to requirements of the American Concrete Institute (ACI) as applicable except where more stringent requirements are shown on Drawings or specified in this Section.
- B. Manufacturer's Qualifications: Companies furnishing the repair materials shall have a proven track record of at least five years. Furthermore, they shall have in existence a program of training, certifying, and supporting a nationally organized program of approved contractors. Evidence of this shall be made available to the Engineer/Owner upon request.
- C. Contractor's Qualifications: Contractor performing the work shall be an approved contractor by the manufacturer furnishing the repair materials, and shall have no less

than five years' experience in the various types of polymer related work required in this project. Upon request by the Engineer, a notarized certification from the manufacturer attesting to the training shall be submitted to the Engineer/Owner.

## 1.5 REFERENCES

### A. Applicable Standards:

#### 1. American Concrete Institute (ACI), latest version:

ACI 301R	Specifications for Structural Concrete
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to Curing Concrete
ACI 318R	Building Code Requirements for Structural Concrete
ACI 548.1R	Guide for Use of Polymers in Concrete

#### 2. American Society for Testing and Materials (ASTM):

ASTM C109	Test Method for Compressive Strength of Hydraulic Cement Mortars
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## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS FOR POLYMER MODIFIED CEMENTITIOUS MORTARS

#### A. Mortar used for bonding, patching, and resurfacing in exposed or exterior environmental conditions with large cyclic temperature changes shall have the following properties:

1. Mortar shall be non-sagging.
2. Acceptable materials shall have minimum 3-day compressive strength of 3,000 psi, and 5,000 psi at 28 days as certified by manufacturer.
3. Coefficient of thermal expansion shall be comparable with that of concrete ( $5.5 \times 10^{-6}$  in/in/°F).
4. Sand used in preparing mortar shall be graded oven dry quartzite furnished in bags.
5. The mortar patch material shall match the existing texture and color of existing exposed/cured concrete without giving a blotchy appearance. A test patch shall be applied for approval prior to final acceptance of the mortar. Size of test patch shall be approximately equal to the size of the average mortar patch to be used on the project.

### 2.2 PRODUCTS AND MANUFACTURERS

#### A. Acceptable materials for this Work are

#### B. HORIZONTAL REPAIRS (POLYMER MODIFIED):

1. EMACO R310 CI by BASF
2. SikaTop 122 Plus by Sika

3. Sika 222 with Latex R by Sika
4. Eucocrete Supreme by Euclid Chemical Company

Substitutions may be considered provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.

Changes in products required to suit temperature and environmental conditions at the time of material application shall be specified as separate line items by the Contractor showing credit or additions to the price for the various tasks.

In using the above products, follow strictly the manufacturer's specifications and directions for mixing and application. Also read all label warnings by manufacturer. Make application in accordance with applicable safety laws.

### PART 3 - EXECUTION

#### 3.1 POLYMER MODIFIED AND NON-POLYMER MODIFIED CEMENTITIOUS MORTAR PATCH

##### A. Applicator's Qualifications

1. Mortar repair work shall only be performed by contractors who have successfully used this process on at least three similar structural repairs of equal scope which have performed successfully for a minimum period of five years.
2. Only adequately trained and experienced personnel shall be used on the job.

##### B. Surface Preparation

1. Concrete surface to which the mortar is to be applied shall be exposed parent concrete free of loose and unsound materials. Preparation of cavity to receive new mortar shall be in accordance to Section "Surface Preparation for Patching" and manufacturer's instructions.

##### C. Concrete Surface Inspection: Ensure that the surface and ambient temperature is at least 45°F and rising at the time of application.

##### D. Bonding Grout

1. Apply bonding grout in strict accordance with manufacturer's recommendations.
2. If bonding grout dries, cavity shall not be patched until it has been re-cleaned and prepared as indicated in Section "Surface Preparation for Patching." Grout shall not be applied to more cavities than can be patched within 15 min. by available manpower.
3. Patching materials shall be placed immediately following grout application in strict accordance with manufacturer's instructions.

##### E. Mortar Application

1. Condition polymer mortar material to 65°F-80°F unless otherwise recommended by the manufacturer. Materials beyond this range of temperature shall not be used.

2. Mix the two components in a clean container free of contaminants as recommended by the manufacturer.
3. Thoroughly blend components and aggregates with portable mixers to a uniform and homogenous mixture. Small batches of one quart or less may be mixed by spatulas, palette knives or similar devices.
4. Mixing should be accomplished within three minutes when using Jiffy mixer or five minutes when mixed by hand.
5. Apply mortar by means suitable for the consistency of the mortar mix.
6. Use appropriate forms as required for retaining mortar if mixed to a flowable consistency.
7. Consolidate the mortar thoroughly to remove entrapped air.
8. Supplemental wire mesh shall be required for delamination and spall repairs greater than 2" in depth. Fresh bonding grout is required between successive lifts of patching material.
9. Finish surface of mortar to match the texture and contours of existing concrete.

F. Curing

1. Immediately after finishing, keep patch material continually moist for at least 24 hrs. Continue curing for first 7 days after patch placement. During initial and final curing periods maintain patch material above 50 °F.
2. Prevent rapid drying at end of curing period.
3. Provide additional curing as required by manufacturer's recommendations.

G. Cleanup

1. Protect surfaces surrounding the work areas against spillage.
2. Material spillage shall be cleaned before they set and become difficult to remove.
3. Cleanup all portions of the existing structure that are soiled or stained in the process of mortar repair work.

3.2 ACCEPTANCE OF REPAIRS

- A. Acceptance of completed concrete repair will be in accordance to ACI 301.
- B. Patched areas shall be sounded by Engineer and Contractor after curing for 72 hours. Contractor shall repair all hollowness detected by removing and replacing patch or affected area at no cost to Owner.
- C. If shrinkage cracks appear in patch area after the initial curing period is concluded, the patch in question shall be considered unacceptable, and it shall be removed and replaced by Contractor at no cost to Owner.

PART 4 - END OF SECTION 03 01 05

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SUMMARY

- A. Section includes labor, materials, hardware, equipment, transportation and services required to fabricate and place all reinforcement for cast-in-place concrete including bars, ties and supports shown on the drawings and as specified.
- B. Related Requirements:
  - 1. Specification 014529 "Structural Testing and Inspections" for testing and inspection requirements associated with concrete reinforcing.
  - 2. Specification 033000 "Cast-in-Place Concrete" for cast-in-place concrete and related products.

1.3 PRICE AND PAYMENT PROCEDURES

- A. Alternates:
  - 1. Products Requiring International Code Council (ICC) Evaluation Service Reports:
    - a. For those products listed in Part 2 as requiring Evaluation Service Reports (ESRs), alternate products that do not have ESRs will be considered by the Engineer only if valid research reports or test data from an independent and approved agency is provided and use of the product receives prior approval from the Building Official.

1.4 REFERENCES

- A. Reference Standards:
  - 1. Comply with all provisions of the following codes, specifications, and standards except where more stringent requirements are shown or specified:
    - a. ACI 301, "Specifications for Structural Concrete for Buildings."
    - b. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
    - c. CRSI, "Manual of Standard Practice."

## 1.5 ADMINISTRATIVE REQUIREMENTS

### A. Coordination:

1. Quality Control: The Contractor is responsible for quality control, including workmanship and materials furnished by subcontractors and suppliers.
2. Document Conflict and Precedence: In case of conflict among documents, including structural drawings and specifications, notify the Engineer prior to submitting proposal. In case of conflict between and/or among the structural drawings and specifications, the strictest interpretation shall govern, unless specified otherwise in writing by the Engineer.

### B. Preinstallation Meetings: The Reinforcing-Placing subcontractor **and Fiber Reinforcement Representative** shall attend the Pre-Concrete Conference conducted by the Concrete Contractor as described in Specification 033000 "Cast-in-Place Concrete."

## 1.6 SUBMITTALS

### A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items including hooked anchorage systems, dowel bar replacement systems, and dowel bar sleeves. For fiber reinforcement, submit manufacturer's product data, including application rate and mixing instructions.

### B. Shop Drawings:

1. Submit shop drawings for all reinforcing steel and related accessories for the Engineer's approval. Shop drawings shall show arrangement and layout, bending and assembly diagrams, bar schedules, splicing and laps of bars and shall be prepared in accordance with CRSI Standards.

### C. Certificates:

1. Submit, for record, mill certificates and/or test results signed by Producer, for all reinforcement.
2. Provide certification from fiber reinforcement manufacturer that fiber reinforcement complies with specified requirements.

### D. Test and Evaluation Reports:

1. Submit International Code Council (ICC) Evaluation Service Reports indicating approval from ICC Evaluation Service, Inc. for dowel bar replacement systems.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Steel Reinforcement:

1. Reinforcing materials shall be delivered from the mill in bundles that are identified as to heat number and manufacturer and accompanied with mill and analysis test reports and an affidavit from the supplier stating that the material conforms to the requirements of the governing ASTM specification listed herein.

2. Reinforcing Bars: Reinforcing bars shall conform to ASTM A 615, Grade 60 as noted on the drawings.

B. Fiber Reinforcement:

1. Synthetic Micro Fiber Reinforcement: Collated, fibrillated, or monofilament polypropylene, cellulose, or multi-filament nylon fibers conforming to ASTM C 1116, Type III or Type IV. The following are acceptable products:
  - a. The Euclid Chemical Company; Fiberstrand Series.
  - b. Forta Corporation; Econo-Mono or Econo-Net (ESR-2720).
  - c. Propex Concrete Systems Corp.; Fibermesh 300 (ESR-1165).
  - d. W.R. Grace & Company; Grace Microfibers (ESR-1506).
  - e. Nycon, Inc.; Nycon RC.
  - f. Buckeye Technologies; UltraFiber 500 (ESR-1032).
  - g. BASF Construction Chemicals; MasterFiber M or F series.
  - h. Maccaferri; Fibromac.
2. Synthetic Macro Fiber Reinforcement: Monofilament polypropylene/polyethylene fibers conforming to ASTM C 1116, Type III having an aspect ratio between 50 and 90 and a minimum tensile strength of 90 KSI. The fiber lengths shall be between 1.5 and 2 inches long. The following are acceptable products:
  - a. The Euclid Chemical Company; Tuf-Strand SF.
  - b. Forta Corp.; Forta-Ferro.
  - c. W.R. Grace; Strux 90/40.
  - d. Propex Concrete Systems, Corp.; Fibermesh 650.
  - e. Bekaert Corp.; Synmix.
  - f. BASF Construction Chemicals; MasterFiber MAC.

## 2.2 REINFORCEMENT ACCESSORIES

- A. Dowel Bar Sleeves: Plastic or gage metal (26 gauge minimum) sleeves with an inside diameter of 1/16 inch greater than the dowel bar that it encases, that have the strength, durability, and design to provide free movement of the dowel relative to the concrete slab and that are specifically manufactured for this purpose.
- B. Tie Wire: Tie wire shall be annealed steel tie wire, minimum 16 gauge.
- C. Holding Wire: Holding wire shall conform to ASTM A 82 or ASTM A 496.
- D. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire reinforcement in place. Use wire bar type supports complying with CRSI recommendations.

## PART 3 - EXECUTION

### 3.1 FABRICATION AND DELIVERY

- A. Bending and Forming: Fabricate bars of indicated sizes and accurately form to shapes and lengths indicated and required, by methods not injurious to materials. Do not heat

reinforcement for bending. Bars shall be free from injurious defects, have a workman-like finish with no excessive rust and/or pitting and have no unusual kinks or bends.

- B. Marking and Shipping: Bundle reinforcement and tag in accordance with Section 7.4.5 of the CRSI "Manual of Standard Practice." Transport and store at site so as not to damage material. Keep sufficient supply of tested, approved, and proper reinforcement at the site to avoid delays. Maintain reinforcing bars free of mud, dirt, grease, or other coating.

### 3.2 PLACING REINFORCEMENT

- A. Comply with CRSI recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports and as herein specified.
- B. Before placing reinforcement and again before concrete is placed, clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by chairs, runners, bolsters, spacers and hangers, as required. Exercise particular care to maintain proper distance and clearance between parallel bars and between bars and forms. Provide spreaders and spacers to hold steel in position. Support steel at proper height upon approved chairs.
- D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set tie wires so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Coordinate with other trades and expedite materials and labor to avoid omissions and delay.
- F. Roadway Slab Joint Dowel Bars: Support roadway slab joint dowel bars independently of support for slab reinforcement on slab bolsters or specially manufactured cradles such that dowel bar remains parallel to slab surface and at right angles to joint during concreting operations. Lightly coat the exposed end of the dowel with a paraffin-base lubricant, asphalt emulsion, form oil, or grease or use a dowel bar sleeve.
- G. Alternate Roadway Slab Joint Load Transfer Systems: Install the alternate load transfer system in accordance with the manufacturer's instructions such that the largest plane of the flat plate is parallel to the plane of the subgrade on which the slab is bearing.
- H. Do not bend reinforcement that is embedded partially in concrete except in locations noted on the drawings or approved by the Engineer.

### 3.3 SPLICING REINFORCING STEEL

- A. Provide splices as indicated on the drawings. Splice reinforcing bars only at locations shown on the structural drawings and approved shop drawings. Unauthorized or unscheduled splices not approved by the Engineer in writing will not be accepted.
- B. All lap splices in reinforcing steel shall be contact lap splices unless detailed otherwise on the drawings.
- C. Maintain proper cover and spacing between reinforcing bars at splices.

- D. Lap unscheduled reinforcing bars not otherwise specified with a Class B lap splice.

3.4 FIELD QUALITY CONTROL

- A. Field Testing and Inspection: Refer to Specification 014529 "Structural Testing and Inspections" for testing and inspection requirements associated with concrete reinforcing.

END OF SECTION 03 20 00

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.
- B. Site Grading is specified in Division 31.
- C. Concrete Reinforcement is specified in other Division 03 sections.

1.2 DESCRIPTION OF WORK

- A. Extent of concrete work is shown on drawings, including schedules, notes and details which show size and location of members and type of concrete to be poured. Furnish all labor, materials, services, equipment and hardware required in conjunction with or related to the forming, delivery and pouring of all poured-in-place concrete work.

1.3 QUALIFICATIONS

- A. The concrete supplier shall have a minimum of five years of experience in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment. The supplier must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
- B. The concrete contractor shall have a minimum of five years of experience with installation of concrete similar in material, design and extent to that indicated for this Project and whose work has resulted in construction with a record of successful service performance.
- C. Any testing laboratory retained to run tests required by this specification shall meet the basic requirements of ASTM E 329.

1.4 QUALITY CONTROL

- A. The Contractor is responsible for quality control, including workmanship and materials furnished by his subcontractors and suppliers.
- B. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
  - 1. ACI 301, "Specifications for Structural Concrete for Buildings."
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
  - 3. ACI 318, "Building Code Requirements for Structural Concrete."
  - 4. CRSI, "Manual of Standard Practice."

- C. Document Conflict and Precedence: In case of conflict among documents, including structural drawings and specifications, notify the Engineer prior to submitting proposal. In case of conflict between and/or among the structural drawings and specifications, the strictest interpretation shall govern, unless specified otherwise in writing by the Engineer.
- D. Inspection and Testing of the Work: Materials and installed work may require testing and retesting, as directed by the governing building code or the Engineer, at any time during progress of work.
1. The Contractor shall provide adequate notification to the Owner's Testing Agency of construction operations including the project schedule to allow the Testing Agency to schedule inspections. Failure to sufficiently notify may result in additional costs incurred by the Testing Laboratory that may be back-charged to the Contractor by the Owner.
  2. The Contractor shall cooperate with laboratory personnel, provide access to the work, and to manufacturer's operations.
  3. The Contractor shall make adequate arrangement with the Owner's Testing Agency for inspection of material stockpiles and facilities.
  4. The Contractor shall provide to the laboratory certificates and representative samples of materials proposed for use in the work in quantities sufficient for accurate testing as specified.
  5. The Contractor shall furnish casual labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate the required inspections and tests.
  6. Inspection or testing by the Owner does not relieve the Contractor of his responsibility to perform the Work in accordance with the Contract Documents. Tests not specifically indicated to be done at the Owner's expense, including retesting of rejected materials and installed work, shall be done at the Contractor's expense.
- E. Acceptance Criteria for Concrete Strength: The strength level of an individual class of concrete shall be considered satisfactory if both the following requirements are met:
1. The average of all sets of three consecutive strength tests equal or exceed the required  $f'c$ .
  2. No individual strength test falls below the required  $f'c$  by more than 0.1  $f'c$  or 500 psi, whichever is greater.
  3. A strength test is defined as the average strength of two 6" x 12" cylinder breaks or three 4" x 8" cylinder breaks tested at the strength age indicated on the drawings for that class of concrete.
- F. Responsibility for Selection and Use of Concrete Admixtures and Chemical Treatments: The Contractor shall be responsible for selecting admixtures and surface treatments that are compatible with the intended use of the concrete including all final surface treatments called for within this or other specifications or on the structural drawings. The Contractor is responsible for following the manufacturer's instructions for the use of their product including abiding by any limitations placed by the manufacturer on the use of any of its products.
- G. Manufacturer Representative Presence:
1. Fiber-reinforced concrete: The manufacturer's representative for each fiber type shall be present during the first pour in which the fiber is used to observe whether the dosage rate and placing and finishing method is in accordance with the specifications and the manufacturer's instruction.

## 1.5 PREINSTALLATION CONFERENCES

- A. Mix Design Conference: At least 30 days prior to submittal of concrete design mixes, the Contractor shall hold a meeting or telephone conference to review the detailed requirements for preparing the concrete mix designs. Participants shall include representatives from the Contractor, Owner's Testing Laboratory, Concrete Supplier, Owner, and Engineer.
  
- B. Pre-Concrete Conference:
  - 1. At least 7 days prior to beginning concrete work, the Contractor shall conduct a meeting to review the proposed mix designs and to discuss required methods and procedures to produce concrete construction of the required quality. Also review requirements for submittals, status of coordinating work and availability of materials. Establish work progress schedule and procedures for materials inspection, testing and certifications. The contractor shall send a pre-concrete conference agenda to all attendees 7 days prior to the scheduled date of the conference.
  - 2. The Contractor shall require responsible representatives of every party who is concerned with the concrete work to attend the conference, including but not limited to the following:
    - a. Contractor's Superintendent
    - b. Laboratory responsible for the concrete design mix
    - c. Laboratory responsible for field quality control
    - d. Concrete Subcontractor
    - e. Ready-Mix Concrete Producer
    - f. Admixture Supplier
    - g. Concrete Pumping Contractor
    - h. Fiber Reinforcement Representative
    - i. Owner's and Engineer's Representative
  - 3. Minutes of the meeting shall be recorded, typed and printed by the Contractor and distributed by him to all parties concerned within 5 days of the meeting. One copy of the minutes shall be transmitted to the following for information purposes:
    - a. Owner's Representative
    - b. Engineer-of-Record
  - 4. The Engineer shall be present at the conference. The Contractor shall notify the Engineer at least 10 days prior to the scheduled date of the conference.

## 1.6 SUBMITTALS

- A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including admixtures, joint systems, fiber reinforcement, curing compounds, dry-shake finish materials, hardeners, sealers, joint fillers, and others as requested by Engineer.
  
- B. Samples: Submit samples of materials specified if requested by Engineer, including names, sources and descriptions.
  
- C. Mix Designs: Submit mix designs as specified herein.
  
- D. Material and Mill Certificates: Provide material and mill certificates as specified herein. The Manufacturer and Contractor shall sign the material and mill certificates certifying that each

material item complies with specified requirements. Provide certification from admixture manufacturers that chloride ion content complies with specified requirements.

- E. Construction Joints: Submit drawing of proposed layout of contraction (control), expansion, and construction joint locations in concrete for slab on grade and roadway topping slab. Submit any additional or changed reinforcing that is required at construction joints that differs from that shown on the drawings.
- F. Roadway Slabs: Submit proposed pour sequence and procedure for protecting concrete during placement, finishing, and curing.
- G. Minutes of preconstruction conference.

#### 1.7 PROVISION FOR OTHER WORK

- A. Provide for installation of inserts, metal ties, dowels, nailing strips, blocking, grounds and other fastening devices required for attachment of work. Properly locate in cooperation with other trades and secure in position before concrete is poured. Do not install sleeves in concrete slab except where shown on the drawings or upon written approval of the Engineer.
- B. Protect adjacent finish materials against damage and spatter during concrete placement.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE MATERIALS

- A. Refer to the drawings for classes and strengths of concrete required.
- B. Hydraulic Cement:
  - 1. Use ASTM C 150, Type I or Type III, or ASTM C 1157, Type GU or HE unless otherwise specified. Do not use Type III cement in slabs on grade unless approved in advance by the Engineer.
  - 2. Use one brand of cement, for each class of concrete, throughout the project, unless approved otherwise by the Engineer and the Owner's Testing Laboratory. Submit mill certificates certifying conformance to this specification for each brand and type of cement.
  - 3. Testing of cement in lieu of mill certificate submittal will be required if:
    - a. The cement has been in storage at the mixing site for over 30 days
    - b. It is suspected by the Owner, Engineer or Owner's Testing Laboratory that the cement has been damaged in storage or in transit or is in any way defective.
- C. Low-alkali cement: Cement that has the additional requirement that equivalent alkalis ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) do not exceed 0.60% according to ASTM C 150-00, Table 2.
- D. Expansive Cement: ASTM C 845, Type K.
- E. Fly Ash: Fly ash shall not be used in the roadway slab.
- F. Silica Fume: ASTM C 1240, Amorphous Silica.

G. Normal-weight Aggregates: ASTM C 33, and as herein specified. Submit material certificates from aggregate supplier or test results from an independent testing agency certifying conformance to this specification for each source of aggregate.

1. For concrete identified on the drawings as exposed to exposure classes C1 and C2, submit certification that aggregate does not contain any deleterious materials that react with alkalis in the concrete mix to cause excessive expansion of the concrete for concrete that is exposed to wetting, has extended exposure to humid atmosphere, or is in contact with moist ground unless low-alkali cement is used.

H. Water: Comply with the requirements of ASTM C 1602.

I. Air-Entraining Admixture: ASTM C 260.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. W.R. Grace & Co.; Darex or Daravair series.
  - b. BASF Admixtures, Inc.; MB-VR, MB-AE90, or Micro-Air.
  - c. Sika Corporation; Sika AER.
  - d. The Euclid Chemical Company; Air Mix or AEA-92.
  - e. The Euclid Chemical Company; Eucon Air 30 or Eucon Air 40.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

J. Water-Reducing Admixture: ASTM C 494, Type A. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. BASF Construction Chemicals; Pozzolith series.
  - b. Sika Chemical Corp.; Plastocrete 161.
  - c. The Euclid Chemical Company; Eucon WR-75 or WR-91.
  - d. W.R. Grade & Co.; WRDA series.
  - e. The Euclid Chemical Company; Eucon NW or Eucon LW.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

K. Mid-Range Water-Reducing Admixture: ASTM C 494, Type A and Type F. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. BASF Construction Chemicals; Polyheed series.
  - b. The Euclid Chemical Company; Eucon MR.
  - c. Sika Chemical Corp.; Sikament HP.
  - d. W.R. Grade & Co.; Daracem or Mira series.
  - e. The Euclid Chemical Company; Eucon X-15 or Eucon X-20.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

L. High-Range Water-Reducing Admixture (Superplasticizer): ASTM C 494, Type F or Type G. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. W.R. Grace & Co.; ADVA or Daracem Series.
  - b. BASF Construction Chemicals; Rheobuild 1000 or Glenium series.
  - c. Sika Chemical Corp.; Sikament.
  - d. The Euclid Chemical Company; Eucon 37/1037 or Plastol series.
  - e. The Euclid Chemical Company; Eucon SP or Eucon RD2.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

M. Water-Reducing, Accelerator Admixture (Non-Corrosive, Non-Chloride): ASTM C 494, Type C or E. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. W.R. Grace & Co.; Polaset, Gilco, Lubricon NCA, Daraset 400, or DCI.
  - b. BASF Admixtures, Inc.; Pozzutec 20+.
  - c. The Euclid Chemical Company; Accelguard 80/90, NCA, or AcN.
  - d. Sika Chemical Co.; Plastocrete 161FL.
  - e. The Euclid Chemical Company; Eucon AcN.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

N. Shrinkage Reducing Admixture: An admixture that reduces drying shrinkage by reducing the capillary tension of pore water.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:
  - a. For Air-Entrained Concrete:
    - 1) Grace Construction Products; Eclipse 4500.
    - 2) The Euclid Chemical Company; Eucon SRA.
  - b. For Non Air-Entrained Concrete
    - 1) Grace Construction Products; Eclipse Floor 200.
    - 2) BASF Construction Chemicals; Tetraguard AS20.

O. Corrosion Inhibitor: 30% calcium nitrite

1. Products: Subject to compliance with requirements, provide the following at dosage rates per Engineer of Record from manufacturer's recommendation based on design life, application, clear cover and other products in concrete mix:
  - a. The Euclid Chemical Company; Eucon CIA or Eucon BCN.
  - b. W.R. Grace & Co.; DCI or DCI-S.

- c. BASF Construction Chemicals; Rheocrete CNI.
- d. Sika Chemical Co.; Sika CNI.

- P. Calcium Chloride and Chloride Ion Content: Calcium chloride or admixtures containing more than 0.5% chloride ions by weight of the admixture are not permitted. For concrete exposed to sulfate exposure class S2 or S3 as noted on the drawings, admixtures must be completely free of chloride ions.
- 1. Certification: Written conformance to all the above mentioned requirements and the chloride ion content of the admixture as tested by an accredited laboratory will be required from the admixture manufacturer at the time of mix design review by the Engineer.

## 2.2 RELATED MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following, complying with ANSI/ASTM C 171:
- 1. Cover for Roadway Slab: Provide a low permeance moisture-retaining cover that allows a moisture loss of no more than 1 lb/sq. yd. in 72 h when tested in accordance with ATSM C 156 for roadway slab. The material shall be non-staining with a tensile strength meeting ASTM D 882 and a minimum retention capacity of 6.5 g.
- C. Evaporation Control: Monomolecular film forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss in hot weather conditions.
- 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. The Euclid Chemical Company; Eucobar.
    - b. L&M Construction Chemicals; E-Con.
    - c. BASF Building Systems; Confilm.
    - d. Dayton-Superior; Sure Film (J-74).
    - e. Sika Chemical Co.; SikaFilm.
    - f. Unitex; Pro-Film.
    - g. W.R. Meadows; Sealtight Evapre.
    - h. US Mix Co.; US Spec Monofilm ER.
    - i. SpecChem; SpecFilm RTU.

Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all coverings and surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments.

- D. Synthetic Micro Fiber Reinforcement: Collated, fibrillated, or monofilament polypropylene, cellulose, or multi-filament nylon fibers conforming to ASTM C 1116, Type III or Type IV.
- 1. Products:
    - a. The Euclid Chemical Company; Fiberstrand.
    - b. Forta Corp.; Econo-Mono or Econo-Net.
    - c. Propex Concrete Systems, Corp.; Fibermesh 300.
    - d. W.R. Grace & Co.; Grace Microfibers or Grace Fibers.
    - e. Honeywell Nylon, Inc.; Caprolan-RC.

- f. Nycon, Inc.; Nycon RC.
  - g. Buckeye Technologies, Inc.; UltraFiber 500.
  - h. BASF Construction Chemicals; MasterFiber M or F series.
  - i. Maccaferri; Fibromac.
- E. Synthetic Macro Fiber Reinforcement: Monofilament polypropylene/polyethylene fibers conforming to ASTM C 1116, Type III having an aspect ratio between 50 and 90 and a minimum tensile strength of 90 ksi. The fiber lengths shall be between 1.5 and 2 inches long.
- 1. Products:
    - a. The Euclid Chemical Company; Tuf-Strand S.F.
    - b. Forta Corp.; Forta-Ferro
    - c. W.R. Grace; Strux 90/40.
    - d. Propex Concrete Systems, Corp.; Fibermesh 650.
    - e. Bekaert Corp.; Synmix.
    - f. BASF Construction Chemicals; MasterFiber MAC.
- F. Contraction (Control) and Construction Joint Sealant Material for Roadway Slab: Silicone sealant for contraction (control) and construction joints shall be as follows:
- 1. Dow Corning 888 Silicone Joint Sealant or Engineer approved equal.
- G. Bondbreaker for Construction Joints in Roadway Slab: A dissipating bondbreaking compound containing no silicones, resins, or waxes, and that conforms to ASTM C 309. Subject to compliance with requirements, acceptable manufacturers include the following:
- 1. Dayton-Superior Corporation, Inc.; Sure-Lift.
  - 2. Conspec Marketing and Manufacturing Co.; Tilt-Eez.
  - 3. SpecChem; SpecTilt 100.
- H. Joint-Filler Strips for Isolation Joints in Roadway Slab: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork. In shrinkage-compensated slabs, use compressible isolation-joint filler material that does not develop a stress greater than 25 psi at 50% strain when tested in accordance with ASTM D 1621 or D 3575.

## 2.3 PROPORTIONING AND DESIGN OF CONCRETE MIXES

- A. The Contractor shall submit concrete mix designs and the Concrete Mix Design Submittal Form located at the end of this specification section for each class of concrete indicated on the structural drawings and in the Specifications for approval by the Engineer and Owner's Testing Laboratory at least 15 working days prior to the start of construction,. If required, the Contractor shall engage the services of an independent Testing Laboratory to assist in preparing the mix design. The Contractor shall not begin work with a particular mix until that mix design has been approved.
- B. Mix Design Conference: See the PREINSTALLATION CONFERENCES section of this specification.
- C. The Contractor, acting in conjunction with his Concrete Supplier and his Testing Laboratory, shall submit in writing, with his mix designs, the method used to select mix proportions. Either of the following methods, as outlined in ACI 301, may be used.
- 1. Field Experience Method

2. Laboratory Trial Mixture Method
- D. Required types of concrete and compressive strengths shall be as indicated on the Structural Drawings.
- E. All mix designs shall state the following information:
1. Mix design number or code designation by which the Contractor shall order the concrete from the Supplier.
  2. Structural slab or member for which the concrete is designed (i.e., roadway topping slab, approach slab).
  3. Wet and dry unit weight.
  4. 28 day compressive strength.
  5. Aggregate type, source, size, gradation, fineness modulus.
  6. Cement type and brand.
  7. Admixtures including air entrainment, water reducers, accelerators, and retarders.
  8. Design Slump or Slump/Flow.
  9. Proportions of each material used.
  10. Water/cementitious ratio and maximum allowable water content.
  11. Method by which the concrete is intended to be placed (bucket, chute, or pump).
  12. Required average strength qualification calculations per ACI 301 4.2.3.3a and 4.2.3.3b. Submit separate qualification calculations for each production facility that will supply concrete to the project.
  13. Documentation of Average strength (trial mix data or field test data) per ACI 301: When field test data is used to qualify average strength, submit separate documentation for each production facility that will supply concrete to the project.
  14. Field test data submitted for qualification of average strength under ACI 301 shall include copies of the Concrete Testing Agency's reports from which the data was compiled.
  15. All other information requested in the Concrete Mix Design Submittal Form located at the end of this specification section.
- F. Low Alkali Concrete: For concrete identified on the drawings as exposed to exposure classes C1 and C2, the total alkali contribution from cementitious materials in the concrete mix shall not exceed 4.0 pounds per cubic yd of concrete unless the aggregate used is certified to contain no deleterious materials that react with alkalis in the concrete mix as defined in ASTM C 33. This requirement may be met by the use of low-alkali cement.
- G. Aggregate: Comply with the following special requirements:
1. For exposed concrete, provide aggregates from a single source.
  2. For exposed surfaces subject to Exposure Class C1 or C2, do not use aggregates containing spalling-causing deleterious substances.
  3. For slabs and other designated concrete, combined aggregate gradation shall be 8% - 18% for large top size aggregates (1 1/2 in.) or 8% - 22% for smaller top size aggregates (1 in. or 3/4 in.) retained on each sieve below the top size and above the No. 100. Deviations from this gradation may be allowed upon the approval of the Engineer subject to the following limitations:
    - a. The percent retained on two adjacent sieves shall be not less than 5%.
    - b. The percent retained on three adjacent sieves shall be not less than 8%
    - c. If the percent retained on two adjacent sieves is less than 8%, the total percent retained on either of those sieves and the adjacent outside sieve shall be not less than 13 %
- H. Admixtures:

1. Admixtures to be used in concrete shall be subject to the approval of the Engineer and Owner's Testing Laboratory and shall be used for the purpose intended by the manufacturer to produce concrete to meet the specified requirements.
  2. Quantities of admixtures to be used shall be in strict accordance with the manufacturer's instructions.
- I. Adjustments of Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant. Such mix design adjustments shall be provided at no additional cost to the Owner. Any adjustments in approved mix designs including changes in admixtures shall be submitted in writing with the specified Concrete Mix Design Submittal Form to the Engineer and Owner's Testing Laboratory for approval prior to field use.
- J. Shrinkage: Concrete so identified on the drawings shall be proportioned for a maximum allowable unit shrinkage as noted on the drawings, measured at 28 days after curing in lime water as determined by ASTM C 157 (using air storage). **Concrete mix designs not meeting this requirement will not be approved by the Engineer.** Submit results of test as part of the mix design submittal and after every 500 cy. placed.
- K. Chloride Ion Content:
1. Unless noted otherwise, The maximum water soluble chloride ion concentration in hardened concrete measured at ages from 28 to 42 days contributed from all ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed the limits specified in ACI 318-08 Table 4.3.1 depending on to which Corrosion Exposure Class (CO, C1 or C2) the concrete is subject as noted on the drawings. Water-soluble chloride ion tests shall conform to ASTM C 1218. One test shall be run for each class of concrete before the mix design submittal and each time a change is made to the mix design (such as change in aggregate type or source).
  2. The Concrete Supplier shall certify on the Mix Design Submittal Form that the chloride ion content in all concrete mix designs used on the project does not exceed the limits stated above.

## 2.4 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ANSI/ASTM C 94, "Ready Mixed Concrete."

## PART 3 - EXECUTION

### 3.1 ELEVATION SURVEYS

- A. Work consists of furnishing all labor, materials, equipment, staging, supervision, and incidentals necessary to conduct elevation surveys at the existing roadway topping slab in order to establish reference elevations to all pertinent working points before and after installation of new roadway topping slab.
- B. Surveys shall be performed by professional surveyor licensed in the State of Florida.
- C. Prior to start of work, Contractor and Surveyor shall meet with Engineer to identify minimum required elevation reference points and benchmark. Provide elevations at 7-foot intervals in

each orthogonal direction. Benchmark shall be clearly marked and protected throughout the construction to prevent damage.

- D. Contractor/Surveyor will be provided with background drawings. Surveyor shall submit copies of survey results to Owner, Engineer and Contractor within one week of completing each survey.
- E. Conduct the following surveys:
  - 1. Initial survey of floor elevations of existing roadway slab.
  - 2. A survey of floor elevations after removal of existing roadway slab being replaced.
  - 3. Additional surveys shall be performed after installation of new roadway slab as necessary to verify final elevations and slopes.

### 3.2 SLUMP LIMIT

- A. The slump, as measured in the field where concrete cylinders are taken, shall be within plus or minus 1 inch of the design slump noted on the Mix Design Submittal Form. Water may be added to the concrete in the field only to the extent that the prescribed water/cementitious ratio noted in the Mix Design Submittal Form is not exceeded.

### 3.3 JOINTS IN CONCRETE

- A. Construction Joints: Locate and install construction joints as indicated on the drawings or if not shown on drawings, located so as not to impair strength and appearance of the structure, as acceptable to Engineer. Contractor shall submit a layout of contraction (control), expansion, and construction joints in roadway slab for Engineer's review and approval.
  - 1. Keyways: Provide keyways with a depth of one tenth of the member thickness (1 1/2" minimum or as shown on the drawings) in construction joints only where shown on the drawings.
  - 2. Joint Construction: Place joints perpendicular to main reinforcement. Dowels that cross construction joints shall be supported during concreting operations so as to remain parallel with the slab and at right angles to the joint. Submit all construction joint locations as a shop drawing submittal.
  - 3. Isolation Joints in Roadway Slab: Construct isolation joints (without dowels) in roadway slab at points of contact between roadway slab and vertical surfaces only where specifically detailed on the drawings. Install joint-filler strips at joints where indicated. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated on the drawings. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together. Provide construction joints with dowels at all locations unless isolation joints are detailed.
  - 4. Contraction (Control) Joints in Slabs-on-Ground and Unbonded Topping Slabs: Maximum joint spacing shall be 15 feet, unless otherwise noted on the drawings.
    - a. Formed Joints
      - 1) Form contraction (control) joints by inserting premolded plastic hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. The depth is to be one quarter of the slab thickness, but not less than one inch. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.

- b. Joint Sealant: Provide in both contraction (control) and formed construction joints.
  - 1) Remove dirt and debris from the joint by vacuuming immediately prior to filling joint. Clean the joint of curing compounds and sealers.
  - 2) Sealant material shall be applied to the joints 24 hours prior to opening the roadway slab to traffic.
  - 3) Follow the manufacturer's recommended procedure for installing sealant. Tool sealant with a concave profile. Recess sealant according to manufacturer's recommendations.
- c. The Contractor shall protect the joints from damage caused by wheeled traffic or other sources during construction.

### 3.4 INSTALLATION OF EMBEDDED ITEMS

- A. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

### 3.5 CONCRETE PLACEMENT

- A. Pre-placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- B. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.
- C. Comply with ACI 301 and as herein specified.
  - 1. Concrete Temperature: The maximum acceptable concrete temperature at the truck discharge point shall be 95 °F.
  - 2. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation. Spread concrete using short-handled, square-ended shovels, or come-alongs.
  - 3. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
  - 4. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use internal vibrators of the largest size and power that can properly be used in the work as described in the table entitled "Range of characteristics, performance, and applications of internal vibrators" found in ACI 301.
  - 5. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete

embedment of reinforcement and other embedded items without causing segregation of mix.

6. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
7. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners of forms, eliminating air and stone pockets that may cause honeycombing, pitting, or planes of weakness.
8. Bring slab surfaces to correct level with straightedge and strikeoff. Use highway straightedges, bull floats or darbies to smooth surface free of humps or hollows before excess moisture or bleedwater appears on the surface. Do not disturb slab surfaces prior to beginning finishing operations.
9. Maintain reinforcing in proper position during concrete placement operations.
10. Placing Concrete by Pump: If concrete is placed by using a pump, the grout used for pump priming must not become a part of the completed structure unless an engineered grout design mix and grout location are approved in advance by the Engineer.

### 3.6 MONOLITHIC SLAB FINISHES

- A. Place, consolidate, strike off, and level concrete, eliminating high spots and low spots, before proceeding with any other finish operation. Do not add water to the surface of the concrete during finishing operation.
- B. Slip-Resistive Heavy Broom Finish: Apply slip-resistive heavy broom finish to roadway slab surfaces. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Owner before application. Provide a mockup of the planned broom finish for Owner's review and approval prior to applying the finish on the roadway slab. Size of mockup to be determined by the Owner.

### 3.7 CONCRETE FINISH MEASUREMENT AND TOLERANCES

- A. Testing Procedure: ASTM E 1155
- B. Tolerance on Floor Elevations: Construction tolerance on absolute floor elevation from the specified elevation as shown on the drawings shall be as specified below, taken from ACI 117:
  1. Roadway Slab:  $\pm 1/2"$ .
- C. Random Traffic Floor Finish Tolerances:
  1. Specified overall values for flatness ( $SOF_F$ ) and levelness ( $SOF_L$ ) shall conform to the values listed below for the floor surface classification noted for each slab category noted.
    - a. Conventional:
      - 1)  $SOF_F$ : 20.
      - 2)  $SOF_L$ : 15.
  2. Minimum local values for flatness ( $MLF_F$ ) and levelness ( $MLF_L$ ) shall equal 3/5 of the  $SOF_F$  and  $SOF_L$  values, respectively, unless noted otherwise. The  $MLF_F$  and  $MLF_L$  values shall apply to the minimum areas bounded by the column lines and half-column

lines, or the minimum areas bounded by the construction and contraction (control) joints, whichever are the smaller areas.

3. The  $SOF_L$  and  $MFL_L$  tolerance values shall apply only to level slabs-on-ground or to level, uncambered suspended slabs that are shored such that it cannot deflect from the time the floor is placed to the time it is measured.
4. Slabs specified to slope shall have a tolerance from the specified slope of 3/8" in 10 feet at any point.

D. Construction Requirements to Achieve Specified Floor Finish Tolerances:

1. Forms shall be properly leveled, in good condition and securely anchored including special attention to ends and transitions.
2. Bearing surfaces for straightedges such as form edges or previously poured slabs shall be kept clean of laitance, sand, gravel, or other foreign elements.
3. Screeds shall be maintained in good condition with true round rolling wheels and level cutting edges. The use of optical sighting equipment such as lasers is recommended for checking levelness and straightness. The Contractor shall promptly adjust or replace equipment when test results indicate substandard work.
4. Highway straightedges are recommended for use in lieu of bullfloats for all slab placement and finishing operations.

E. Contractor Responsibility for Concrete Floor Finish Requirements: Floor finish requirements shown below (flatness and levelness tolerances) are minimum requirements that apply unless stricter requirements are contained in instructions for installation of applied floor products in which case the Contractor is responsible for attaining the values prescribed by the manufacturer of such products.

F. Concrete Floor Finish Tolerance for Roadway Slab Construction:

1. Concrete Placement: Concrete shall be placed and screeded to predetermined marks set to elevations prescribed on the drawings.
2. Finish Tolerances of Random Traffic Floor Surfaces:
  - a. Roadway Slabs: Conventional.
3. Extra Concrete: The contractor shall include in his bid any additional concrete required to achieve the specified slab surface finish tolerance.

G. Remedial Measures for Slab Finish Construction Not Meeting Specified Tolerances:

1. Application of Remedial Measures. Remedial measures specified herein are required whenever either or both of the following occur:
  - a. The composite overall values of  $F$  or  $F_L$  of the entire floor installation measure less than specified values.
  - b. Any individual test section measures less than the specified absolute minimum  $F$  or  $F_L$  value.
2. Removal and Replacement:
  - a. If, in the opinion of the Engineer or Owner's Representative, all or any portion of the substandard work cannot be satisfactorily repaired without sacrifice to the appearance or serviceability of the area, then the Contractor shall immediately commence to remove and replace the defective work.

- b. Replacement section boundaries shall be made to coincide with the test section boundaries as previously defined.
- c. Sections requiring replacement shall be removed by sawcutting along the section boundary lines to provide a neat clean joint between new replacement floor and existing floor.
- d. The new section shall be reinforced the same as the removed section and doweled into the existing floor as required by the Engineer. No existing removed reinforcing steel may be used. All reinforcing steel shall be new steel.
- e. Replacement sections may be retested for compliance at the discretion of the Engineer or Owner's Representative.
- f. The judgment of the Engineer or Owner's Representative on the need for replacement shall be final.
- g. All replacement work shall be performed at no additional cost to the Owner and with no extension to the construction schedule.

### 3.8 CONCRETE CURING AND PROTECTION

#### A. General:

- 1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete with minimal moisture loss at a relatively constant temperature for the period necessary for hydration of the cement and hardening of concrete. Limit moisture loss to a maximum of 0.05 lb./sq. ft – hr for concrete containing silica fume and 0.2 lb./sq. ft. - hr for all other concrete before and during finishing operations. If using an evaporation retarder, apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- 2. Curing shall commence as soon as free water has disappeared from the concrete surface after placing and finishing. The curing period shall be 7 days for all concrete except high early strength concrete which shall be cured for 3 days minimum. Roadway slab shall not be opened to traffic until the slab has been cured for a minimum of 3 days.
- 3. Curing shall be in accordance with ACI 301 procedures. Avoid rapid drying at the end of the curing period.

#### B. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping and other flat surfaces by one or a combination of the methods specified below, as applicable. The Contractor shall choose a curing method that is compatible with the requirements for subsequent material usage on the concrete surface.

- 1. Roadway Slab: Cure using method 1 as specified below for 7 days. The temperature of applied water shall be with 10° F of concrete surface temperature.

#### C. Curing Methods:

- 1. Method 1 - Moisture Curing: Provide moisture curing by one of the following methods:
  - a. Keep concrete surface continuously wet by covering with water.
  - b. Continuous water-fog spray.
  - c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.

### 3.9 HOT WEATHER CONCRETING

#### A. Definition:

1. Conditions warranting hot weather concreting practices are defined as any combination of high air temperature, low relative humidity and wind velocity tending to impair the quality of fresh or hardened concrete or otherwise result in abnormal properties. If conditions cause an evaporation rate of 0.2 lb./sq. ft./hr. as calculated by Figure 2.1.5 in ACI 305R-99, then precautions shall be taken to prevent plastic shrinkage cracks from occurring.

#### B. Specification: Follow hot weather concreting practices specified below when required to limit the concrete temperature at the truck discharge point to the stated maximum acceptable temperature.

#### C. Records: Under hot weather conditions, the Contractor shall keep records of outside air temperature, concrete temperature at truck discharge and general weather conditions.

#### D. Hot Weather Concreting Requirements: The following items, all or in part as required, shall be followed to limit the concrete temperature to the stated maximum acceptable temperature and to minimize the possibility of plastic shrinkage cracks from developing.

1. Design the concrete mixes specifically for hot weather conditions using a water reducing retarding admixture (ASTM C 494 Type D).
2. Use the largest size and amount of coarse aggregate compatible with the job.
3. Use sunshades and/or windbreaks.
4. Cool and shade aggregate stockpiles.
5. Use ice as part of the mixing water or cool the water with liquid nitrogen.
6. Limit the number of revolutions at mixing speed to 125 maximum.
7. Reduce time between mixing and placing as much as possible.
8. Do not add water to ready-mixed concrete at the job site unless it is part of the amount required initially for the specified water-cement ratio and the specified slump.
9. Schedule concrete placement for early morning, late afternoon, or night.
10. Have all forms, equipment and workers ready to receive and handle concrete.
11. Maintain one standby vibrator for every three vibrators used.
12. Keep all equipment and material cool by spraying with water including exteriors of forms, reinforcing steel, subgrade, chutes, conveyors, pump lines, tremies, and buggies.
13. Protect slab concrete at all stages against undue evaporation by applying a fog spray or mist above the surface or applying a monomolecular film. Where high temperatures and/or placing conditions dictate, use water-reducing retarding admixture (Type D) in lieu of the water-reducing admixture (Type A) as directed by the Owner's Testing Laboratory.
14. Provide continuous curing, preferably with water, during the first 24 hours using wet burlap, cotton mats, continuous spray mist, or by applying a curing compound meeting ASTM C 1315. Continue curing for 3 days minimum.
15. Cover reinforcing steel with water soaked burlap so that steel temperature will not exceed ambient air temperature immediately before placement of concrete.
16. As soon as possible, loosen forms and run water down the inside. When forms are removed, provide a wet cover to newly exposed surfaces.

### 3.10 COLD WEATHER CONCRETING

#### A. Definition:

1. Concrete shall not be placed when the outside air temperature is 40°F or less unless cold weather concreting practices are followed as specified below.
  2. Cold weather concreting practices should also be followed whenever the average daily air temperature is expected to be less than 40°F for more than three successive days. The average daily air temperature is the average of the highest and lowest temperature occurring during the period from midnight to midnight. The requirement for adhering to these cold-weather concreting practices may be terminated when the air temperature is above 50° F for more than half of any 24 hour duration.
  3. Cold-weather concreting practices invoked shall keep the temperature of the concrete immediately after placing within the following temperature ranges:
    - a. 55° to 75° F for sections less than 12 in. in the least dimension.
  4. Concrete Protection: Protect the concrete immediately after placing and during the defined protection period such that the concrete does not freeze nor fall below the temperature levels stated in the above paragraph. For concrete not loaded during construction the protection period shall be for a minimum of three days if cold-weather conditions persist. The time period may be reduced to a minimum of two days if Type III cement or an accelerating admixture is used or if an additional 100 pounds of cement per cubic yard is added to the concrete mix. Concrete fully loaded during construction shall be protected during cold weather conditions for whatever time period is required to obtain the required strength as determined by nondestructive strength tests (Windsor probe, Swiss Hammer Test) on the in-place concrete. Protect concrete surfaces from freezing for the first 24 hours even if cold-weather conditions do not officially exist due to high volatility in ambient temperatures.
  5. Protection Deficiency: If the temperature requirements during any portion of the protection period are not met but the concrete surface did not freeze, the protection period shall be extended until twice the deficiency expressed in degree-hours is made up. Deficiency degree-hours are defined as the average deficiency in temperature below the required value times the number of hours the deficiency persisted. Make-up degree hours are the average increase in temperature above the minimum value times the hours required to make up twice the deficiency degree-hours. Contact the Engineer if the concrete surface was allowed to freeze during the protection period.
  6. Protection Removal: As the protection is being removed the decrease in temperature measured at the surface of the concrete in a 24 hour period shall not exceed the following:
    - a. 50° F for sections less than 12 in. in the least dimension.
  7. The maximum concrete temperature heated by artificial means at point of placement shall not exceed 90°F.
- B. Records: Under cold weather conditions, the Contractor shall keep records of outside air temperature, concrete temperature as placed and general weather conditions. The temperature record shall be taken no less than 2 times per 24 hour duration.
- C. Cold Weather Concreting Requirements: The following items, all or in part as required, should be followed to assure acceptable concrete in cold weather conditions:
1. Design the concrete mix to obtain high early strength by using higher cement content, a high early strength cement (Type III), or a specified non-chloride accelerator (ASTM C 494 Type C or E).
  2. Protect the concrete during curing period using insulating blankets, insulated forms, enclosures and/or heaters.
  3. Concrete cured in heated enclosures shall have heaters vented to prevent exposure of concrete and workmen to noxious gases.

4. Frozen subgrade shall be thawed prior to concrete placement and snow and ice shall be removed from forms.
5. Heat the mixing water and then blend hot and cold water to obtain concrete no more than 10°F above the required temperature.
6. Heat the aggregates by circulating steam in pipes placed in the storage bins for air temperatures consistently below 32°F. When either water or aggregate is heated to over 140°F combine them in the mixer first to obtain a maximum temperature of the mixture not to exceed 140°F in order to prevent flash set of the concrete.
7. Uniformly thaw aggregates far in advance of batching to prevent moisture variations in the stockpile.
8. Cover warmed stockpiles with tarps to retain heat.
9. Place air entraining admixture in the batch after the water temperature has been reduced by mixing with cooler solid materials.
10. Use wind screens to protect concrete from rapid cooling.
11. Place vertical pump lines inside the building, if possible, for concrete being pumped.
12. Maintain artificial heat as low as possible to reduce temperature stresses during cooling.
13. Provide water curing of concrete along with water heaters to keep water from freezing.
14. Delay form stripping as long as possible to help prevent drying from heated enclosures and to reduce damage to formed surfaces caused by premature stripping.
15. Provide triple thickness of insulating materials at corners and edges vulnerable to freezing.
16. Wrap protruding reinforcing bars with insulation to avoid heat drain from the warm concrete.
17. Gradually reduce the heat at the end of the heating period to reduce likelihood of thermal shock.

### 3.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Installation of Adhesive Anchors Using Injectable Epoxy or Adhesive: A representative of the adhesive manufacturer shall be present for the first day that adhesive anchors are installed. After drilling the hole to the diameter and depth recommended by the manufacturer, clean the hole with a wire or nylon brush. Blow the dust out of the hole using compressed air with a nozzle that reaches to the bottom of the hole. When using adhesive from a new pack, the adhesive that is discharged from the mixing nozzle should be a uniform gray color before any adhesive is installed in the hole. Fill the hole with adhesive starting from the very bottom of the hole until the hole is about 2/3 full. Do not leave an air pocket at the bottom of the hole. Insert the anchor rod or dowel by slowly twisting it into the hole.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Definition - Defective Areas:
  1. Unformed Surfaces: Concrete surfaces requiring repair shall include all surface defects such as crazing, cracks in excess of 0.01" wide or cracks which penetrate to reinforcement or through the member, popouts, spalling and honeycombs.
- B. Classification:
  1. Slab Repairs: High and low areas in concrete slabs shall be repaired by removing and replacing defective slab areas unless an alternate method, such as grinding and/or filling with self-leveling underlayment compound or repair mortar is approved by the Engineer.

Repair of slab spalls and other surface defects shall be made as determined by the Engineer.

3.13 QUALITY ASSURANCE TESTING AND INSPECTION DURING CONSTRUCTION

- A. See Testing Laboratory Services section of these Specifications for concrete materials and cast-in-place concrete inspection and test requirements.

END OF SECTION 03 30 00

Date: \_\_\_\_\_

Concrete Mix Design  
Submittal Form (Note 1)

I. Project Information

- A. Name of Project: \_\_\_\_\_ B. City, State: \_\_\_\_\_
- C. General Contractor: \_\_\_\_\_
- D. Concrete Supplier: \_\_\_\_\_
  - 1. Address: \_\_\_\_\_
  - 2. Name to Contact: \_\_\_\_\_ 3. Phone No.: \_\_\_\_\_ 4. Fax No.: \_\_\_\_\_

II. Concrete Mix Information

- A. Concrete Mix Design Designation (Note 2): \_\_\_\_\_
- B. Minimum Concrete Strength f'c: \_\_\_\_\_ psi at \_\_\_\_\_ days
- C. Maximum w/c Ratio: \_\_\_\_\_
- D. Concrete Type (check one) \_\_\_\_\_ NW \_\_\_\_\_ LW
- E. Required Wet Weight: \_\_\_\_\_ pcf
- F. Concrete Use (member type as specified in General Notes): \_\_\_\_\_
- G. Required Air Content: \_\_\_\_\_ %
- H. Method of Concrete Placement for this Mix:  
(check one) \_\_\_\_\_ Bucket \_\_\_\_\_ Pump \_\_\_\_\_ Chute \_\_\_\_\_ Tremie \_\_\_\_\_ Other (Specify) \_\_\_\_\_

III. Method of Concrete Mix Design Preparation: (Check One Method Below) (Note 3)

- A. \_\_\_\_\_ Field Experience Method
- B. \_\_\_\_\_ Trial Mixture Method

IV. Concrete Production Facility Information

- A. Production facility has field strength test records of specified class or within 1 ksi of class: \_\_\_\_\_ Yes \_\_\_\_\_ No  
Answer B thru C only if answer to IV.A. is "yes". If answer to IV.A. is "no", go to V.B.:
- B. Test Record Information: (Check either 1, 2, or 3 below)
  - 1. \_\_\_\_\_  $\geq$  30 consecutive tests
  - 2. \_\_\_\_\_ Two groups of  $\geq$  30 tests
  - 3. \_\_\_\_\_ 15 to 29 tests
- C. Standard Deviation S (PSI):
  - 1. Modification Factor (if B.3. checked only. Ref. Table 5.3.1.2 of ACI 318-02.) MF = \_\_\_\_\_
  - 2. Standard Deviation S = \_\_\_\_\_ psi
  - 3. MF x S (if B.3. checked only) = \_\_\_\_\_ psi

Note: Combined aggregate gradation for slabs and other designated concrete shall be 8% -18% for large top size aggregates (1 1/2 in.) or 8%-22% for smaller top size aggregates (1 in. of 3/4 in.) retained on each sieve below the top size and above the No. 100 sieve.

V. Required Average Compressive Strength f'cr (psi)

- A. Calculation of f'cr from S (fill out only if IV.A. is "yes") (larger of 1 or 2 below controls)
  - 1.  $f'cr = f'c + 1.34 \times S =$  \_\_\_\_\_ psi
  - 2.  $f'cr = f'c + 2.33 \times S - 500 =$  \_\_\_\_\_ psi
- B. Calculation of f'cr from ACI 318-02 Table 5.3.2.2: (fill out if IV.A. is "No")
  - 1.  $f'cr = f'c +$  \_\_\_\_\_ psi = \_\_\_\_\_ psi

VI. Concrete Mix Design by Field Experience Method: (fill out below only if III.A. is checked)

Note: This method requires one or more mix designs with a 45 day minimum field record of at least ten consecutive test results using similar materials and conditions as the proposed mix design.

- A. Available field record is based on how many mix designs? \_\_\_\_\_ (specify number)
- B. Average strength of field record is \_\_\_\_\_ psi (must be  $\geq$  f'cr in V.)

VII. Concrete Mix Design by Trial Mixture Method: (fill out below only if III.B. is checked)

Note: This method requires using at least three different trial mixes with varying W/C ratios or cement contents with a plot of average strength vs. W/C ratio or cement content. Submit scale graph of results.

- A. Trial Mixes: (Note: All other ingredients as specified in VIII. below)

	Mix 1	Mix 2	Mix 3	Selected (interpolated) values
Cements (lbs.)	_____	_____	_____	_____
W/C Ratio	_____	_____	_____	_____
Compressive Strength (psi) at Specified Days	_____	_____	_____	_____

VIII. Proposed Mix Design

A. Sources of Materials:

- 1. Cement: Type: \_\_\_\_\_ Manufacturer \_\_\_\_\_ Lo-Alkali? Y N Sp. Gr. \_\_\_\_\_
- 2. Fly Ash: Type: \_\_\_\_\_ Manufacturer \_\_\_\_\_ Sp. Gr. \_\_\_\_\_
- 3. Silica Fume: Manufacturer: \_\_\_\_\_ Type (check one): \_\_\_\_\_ Slurry \_\_\_\_\_ Powder  
 Slurry: Specific Gravity \_\_\_\_\_ Water Content by Wt. \_\_\_\_\_ % Silica by Wt. \_\_\_\_\_ %  
 Powder: Specific Gravity \_\_\_\_\_ Silica by Wt. \_\_\_\_\_ %
- 4. Coarse Aggregate: Size: \_\_\_\_\_ Type: \_\_\_\_\_ Source: \_\_\_\_\_ Oven Dry Sp. Gr. \_\_\_\_\_

- (Note 4) Ovendry Rodded Density: \_\_\_\_\_ PCF Absorption: \_\_\_\_\_% (moist. content at SSD cond.)
5. Lightweight Agg.: \_\_\_\_\_ Size: \_\_\_\_\_ Type: \_\_\_\_\_ Source: \_\_\_\_\_ Ovendry Sp. Gr. \_\_\_\_\_  
(Note 4) Ovendry Rodded Density: \_\_\_\_\_ PCF Absorption: \_\_\_\_\_% (moist. content at SSD cond.)
6. Fine Aggregate: Type: \_\_\_\_\_ Source: \_\_\_\_\_ Fineness Modulus: \_\_\_\_\_  
(Note 4) Ovendry Sp. Gr. \_\_\_\_\_ Absorption (moisture content at SSD condition): \_\_\_\_\_%
7. Air Entraining Agent (AEA): Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_
- Note: Specify below all types and combinations of admixtures anticipated to be used for all anticipated weather conditions
8. Water Reducers (WR):  
 a. (Plain) Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_  
 b. (w/Accelerator) Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_  
 c. (w/Retarder) Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_
9. Accelerators: Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_
10. Retarders: Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_
11. High Range Water Reducer (HRWR) (Superplasticizers):  
 a. (Plain) Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_  
 b. (w/Retarder) Manufacturer and Name: \_\_\_\_\_ ASTM No. \_\_\_\_\_
12. Comments: \_\_\_\_\_
- B. Mix Proportions: (Per Cubic Yard)
- | Item   | Wt. (lbs.)                                | Absolute Vol. (Cu. Ft.)                |
|--|---|--|
| 1. Cement                                      | _____                                     | _____                                  |
| 2. Fly Ash                                     | _____                                     | _____                                  |
| 3. Silica Fume                                 | _____                                     | _____                                  |
| 4. Coarse Agg. (SSD Wt.)                       | _____                                     | _____                                  |
| 5. Lightweight Agg. (SSD Wt.)                  | _____                                     | _____                                  |
| 6. Fine Agg. (SSD Wt.)                         | _____                                     | _____                                  |
| 7. AEA   | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| 8. a. WR (Plain)                               | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| b. WR (W/Acc.)                                 | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| c. WR (W/Ret.)                                 | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| 9. Accelerator:                                | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| 10. Retarder:                                  | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| 11. a. HRWR (Plain)                            | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| b. HRWR (w/Ret.)                               | _____ oz/100# cement                      | Added at: _____ Batch Plant _____ Site |
| 12. Other:                                     | _____                                     | (Specify Units)                        |
| 13. Water (including free water on aggregates) | _____ (lbs.) _____ (cu. ft.) _____ (gal.) |  |
- C. Mix Design Characteristics: (Pozzolan = flyash and/or silica fume)
1. Water (including free water on aggregates)/(Cement + pozzolan):  $W/C = \frac{\text{_____ (lbs.)}}{\text{_____ (lbs.)}} = \text{_____}$   
(Not applicable for LW concrete)
2. Fine Aggregate/Total Aggregate =  $\frac{\text{_____ (lbs.)}}{\text{_____ (lbs.)}} = \text{_____}$  3. Pozzolan/Pozzolan+Cement) =  $\frac{\text{_____ (lbs.)}}{\text{_____ (lbs.)}} = \text{_____}$
4. Concrete Density: a. Unit Wet Weight: \_\_\_\_\_ pcf b. Unit Dry Weight: \_\_\_\_\_ pcf
5. Air Content: \_\_\_\_\_%
6. Slump or Slump Flow a. Initial Slump (before adding WR or HRWR) \_\_\_\_\_ in.  
 b. Final Slump or Flow (after adding WR or HRWR or SCC) \_\_\_\_\_ in.
- D. Chloride Ion Content: The Concrete Supplier certifies that total chloride ion content of the concrete mix, as tested by ASTM C 1218 does not exceed the amounts specified in Table 4.4.1 of ACI 318.
- E. Alkali Content: The Concrete Supplier certifies, if required by specification section 3300, that the total alkali content contributed from cementitious materials does not exceed 4.0 lbs./cu. yd. of concrete or certifies that the aggregate contains no deleterious material that react with alkalis in the concrete mix.
- F. Mix Water Purity: The Concrete Supplier certifies that the appropriate specified chemical concentration limits are not exceeded in the total volume of mix water.

**Notes:**

- This form is required to be submitted to Engineer and Owner's Testing Laboratory for all concrete mixes on the job. When any mix ingredient changes during the course of the job, this submittal form shall be resubmitted for approval. All information must be filled in for approval of mix design. Submit all backup data for calculations.
- The mix designation should be that used by the Contractor to order the concrete from the Supplier and as noted on the batch ticket.
- Refer to ACI 318 for requirements of each concrete mix design preparation method.
- Submit sieve analysis of fine and course aggregates. Include chart indicating combined aggregate retained on each sieve size.

X. Certification by Concrete Supplier

Signature: \_\_\_\_\_ Representing: \_\_\_\_\_ Date: \_\_\_\_\_

**SECTION 07 00 00**

**DECK WATERPROOFING**

**Installation Guidelines  
Parking Garage Overlay for Waterproofing**

This specification describes the application of an epoxy or urethane/polymer overlay on parking garage decks for the purpose of waterproofing the decks. This work shall consist of furnishing and placing on an existing concrete parking deck an overlay system comprised of either a two-component epoxy resin system with broadcast aggregate, or a three layer two-component coating system consisting of a urethane primer layer, a polyuria base coat and a multi-polymer top coat with broadcast aggregate, for the purpose of improving bond of subsequent concrete placement and sealing the concrete surface. The surface of the concrete shall be prepared and either the two applications of the epoxy-aggregate system or the three layer system described above, shall be made in accordance with these specifications.

**1.0 GENERAL**

**1.01 Work Included**

- A. Furnish all materials, labor, tools, and equipment to apply a waterproof, traffic resistant overlay to deck surfaces as designated by the owner.

**1.02 Related Work**

- A. Joint Fillers
- B. Crack Repairs
- C. Patching
- D. Expansion Joint Repairs

**1.03 Reference Documents**

- A. Refer to applicable Material Safety Data Sheets
- B. Refer to specific Tammstech Data Sheets
- C. ASTM D 4263-88, "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method"
- D. ASTM D 4541-93, "Pull-Off Strength of Coatings Using Portable Adhesion Testers"
- E. ASTM D 4259-88, "Standard Practice for Abrading Concrete"
- F. Daily Job Site Log

**1.04 Submittals**

Prior to the start of any application of the epoxy resin or three coat overlay system, the following submittals shall be made for review and approval:

- A. Submit literature and manufacturer's installation instructions.
- B. If a substitute product is being submitted to the engineer then submit independent test data substantiating that the product meets or exceeds these specifications.
- C. The manufacturer of the epoxy or three coat overlay system shall certify that the products delivered to the site comply with the specifications.

**1.05 Quality Assurance**

- A. **Manufacturer qualifications:** The manufacturer of the specified products shall have experience in the production and use of the products specified. The manufacturer shall supply a list of projects where their products have been used on similar projects with similar jobsite and exposure conditions.

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- B. Contractor qualifications:** Applicator shall have at least five years of prior experience in the installation of similar products in similar sized projects. The engineer/owner shall be provided with a list of projects dating back five years which can be reviewed so as to be satisfied with the qualifications of the applicator.

### 1.06 Delivery, Storage, and Handling

- A. Deliver the specified product in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers.
- B. Store and condition the specified product as recommended by the manufacturer.

### 1.07 Job Conditions

- A. Refer to the applicable Technical Data Sheets for the recommended temperature of surfaces to be patched and overlaid, and ambient conditions during application and cure times.
- B. Use a surface thermometer and monitor, as necessary, the temperature of substrates to be patched and overlaid.
- C. Do not apply material if the substrate is frozen or if freezing conditions are imminent.
- D. Mask off adjoining surfaces prevent damage to any surfaces outside work area.
- E. Protect newly overlaid surfaces during cure from traffic, damage and contamination.

### 1.08 Warranty

Upon completion, on a single document, provide a copy of written joint and several guarantees, from manufacturer and licensed applicator against defects of material and workmanship, for a period of up to five years, beginning with the date of substantial completion of system.

## 2.0 PRODUCTS

**2.01 Acceptable Manufacturers:** All materials shall be sampled and tested for conformance to specifications prior to their incorporation into the finished work.

- A. Epoxy Resin System:** The epoxy resin system shall be a two-component, 100% solids, low-modulus, flexible, high-elongation, moisture-insensitive system, applied in two layers each with broadcast aggregate to full saturation sanded to rejection.
- a) First coat (40 mil)
  - b) Second coat (30 mil)

Acceptable products shall include:

- a) Flexolith, manufactured by The Euclid Chemical Company
- b) Sikadur 22 Lo-Mod, manufactured by Sika Corporation
- c) Dow Polycarb Mark 171, manufactured by Dow Chemical Company

Material and Execution shall follow Section 3A.

- B. Three coat overlay system:** The multi-polymer system shall be a two-component
- a) 100% solids urethane primer (5 mil)
  - b) 100% solids solvent free polyurea base coat (30 mil)
  - c) 100% solids multipolymer thermosetting resin top coat (30 mil), with broadcast aggregate to full saturation and sanded to rejection

Acceptable products shall include Dow Flexodeck System, manufactured by Dow Chemical Company.

Material and Execution shall follow Section 3B

**3A.0 MATERIAL AND EXECUTION FOR EPOXY RESIN SYSTEM**

**3A.01 Performance Criteria:**

The system shall be in strict accordance with the following requirements:

<b>PROPERTIES</b>	
<b>A. Properties of the mixed system:</b>	
1. Pot Life (AASHTO T-237)	15-30 mins.
2. Traffic Time	3-8 hours
3. Mixed Viscosity, Poises, Spindle 2, Speed 10	10-20
<b>B. Properties of the cured system</b>	
1. Compressive Properties (ASTM D-695)	
a. Compressive Strength at 7 days	6,000 psi
b. Compressive Modulus at 7 days	130,000 psi max
2. Compressive Properties (ASTM C-109)	
a. Compressive Strength at 4 hours	1,400 psi
b. Compressive Strength at 7 days	7,000 psi
3. Tensile Properties (ASTM D-638) at 7 days	
a. Tensile Strength	2,200 psi
b. Elongation at Break	45%
4. Tensile Properties (ASTM C-307) at 7 days	
a. Tensile Strength	1,250 psi
5. Flexural Properties (ASTM C-580) at 7 days	
a. Flexural Strength (Modulus of Rupture)	3,600 psi
6. Hardness, Shore D, (ASTM D-2240)	65 min.
7. Water Absorption, 24 hr. %, (ASTM D570)	<0.5
8. Thermal Compatibility, (ASTM C-884)	Passes
9. Effective Shrinkage, (ASTM C-883)	Passes
10. Adhesion to Concrete, (ACI Method 503R-30)	Concrete Failure

Note: Tests above were performed with material and curing conditions at 75+-2F and 45-55% relative humidity, unless otherwise stated.

**3A.02 Patching and Crack Repairs**

1. Prior to the application of the epoxy resin overlay system to the parking garage deck, repairs, if any, are to be made to the deck. These repairs may be in the form of patching of spalled and deteriorated concrete and the sealing of cracks. If this related work is so designated, see the appropriate sections of the specifications for the proper treatment of these repairs.
2. Crack Repair: All existing cracks shall be gravity fed with a two component, 100% solids, ultra-low viscosity low modulus epoxy resin 80 to 100 cps. Follow application techniques off of Technical Data Sheet.

**3A.03 Surface Preparation**

1. All concrete surfaces to receive the epoxy resin system shall be thoroughly clean and free of all dirt, dust grease, oil, tar, rust stains, and other contaminants which might interfere with the proper adhesion of the system.
2. All deteriorated concrete shall be patched as specified in other sections and allowed to cure for the specified time period.
3. All cracks in the substrate are to be repaired as specified in other sections and allowed to cure for the specified time period.
4. All concrete surfaces that are to receive the overlay system are to be water blast or steel shot-blasted using equipment capable of providing a clean surface with adequate profile.
5. Abrasive blasting or scarifiers may be utilized in order to remove the top surface of the concrete and attain a clean concrete condition in areas where the steel shotblasting equipment cannot reach, such as the deck edges adjacent the perimeter walls, curbs, etc. Use abrasive/water

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blasting to remove any fractured concrete in areas where scarifiers or impact hammers were used.

6. Acceptable alternate methods for the surface preparation of the concrete parking garage decks are acid etch with 15% hydrochloric acid solution. Follow by pressure washing.
7. All dust and debris shall be thoroughly removed from all surfaces by use of clean, dry (trapped), air.
8. Once an area has been properly prepared, the contractor shall take all precautions necessary in order to prevent traffic exposure, or any contamination of the surfaces. Should the surfaces be opened to traffic and contaminated in any way, additional cleaning will be required.
9. Joint /overlap membrane: These areas shall be abraded or lightly sanded in order to remove gloss and create a surface profile. Once membrane is properly prepared solvent wipe with high flash solvent before application of the overlay.

### 3A.04 Acceptability of Surface Preparation

Acceptability of the surface preparation will be determined by the Engineer, and should include the use of a vertical axis pull bond test. Test to be performed in accordance to ACI 503R-30.

1. This test consists of bonding a 2-inch diameter sandblasted steel disk to the prepared substrate by using a fast setting epoxy, and pulling it from the substrate by applying a vertical force.
2. The number of tests needed will be determined by the Engineer.
3. Substrate preparation shall not be approved unless at least 90% of the bonded steel disk surface has retained substrate concrete exceeding 1/4 inches in depth, and the pull out strength value is at least 250 psi.
  - a) At the discretion of the engineer the pull-out test may be carried out on the first polymer layer.
  - b) The minimum acceptable bond strength on normal weight concrete shall be 250 psi.
  - c) The Contractor shall repair all bond test locations with polymer overlay in accordance with this specification.

### 3A.05 Application

Application of the overlay shall not be allowed unless the ambient temperature is a minimum of 40 degrees F and rising, and the concrete deck temperature is at least 40 degrees F. Condition the epoxy resin at 75 degrees F for least 24 hours prior to use. Additionally, application shall not begin until the concrete deck is completely surface dry.

1. **Mixing of Epoxy Components:** Components A and B shall each be thoroughly stirred in its own container prior to mixing in order to disperse any settlement which may have occurred. Components A and B shall be proportioned in strict accordance with the instructions of the manufacturer and then thoroughly blended together. Mix thoroughly for 3 minutes min. with a jiffy paddle on a low-speed (400-600 rpm) drill. Make sure to scrape the sides and bottom of the mixing bucket while mixing. Do not whip or aerate while mixing. No diluent, thinner, or other foreign material shall be added to either the individual components or the mixed epoxy.
2. **Applying the Overlay:** Application of the mixed epoxy to the concrete surface shall be squeegee, roller, or spray, or combinations thereof as approved by the Engineer following the trial application. The application method used shall apply the material smoothly, uniformly, and continuously. The epoxy shall not be allowed to puddle or accumulate in holes or depressions in the deck. The contractor shall provide suitable coverings, such as heavy-duty drop cloths and the like, to protect all exposed areas not to be overlaid with epoxy, such as curbs, sidewalks, railings, parapets, joints, etc. Any damage or defacement resulting from this application shall be clean or repaired at the contractor's expense, to the satisfaction of the Engineer.
  - a) **First Coat:** The epoxy shall be applied to the concrete deck at the rate of 40 sq. ft. per gallon. While the epoxy is wet, the aggregate shall be broadcast at the rate of 7-9 pounds per sq. yd. or until no wet spots are visible. In broadcasting, the aggregate shall be sprinkled or dropped vertically in such a manner so as not to violently disrupt the resin film. When this first coat has cured sufficiently to sustain working traffic, any excess aggregate remaining shall be removed by sweeping.

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- b) **Second Coat:** The second coat shall be applied in a manner identical to the application of the first coat, except that the coverage of the epoxy shall be 25 sq. ft. per gallon and the aggregate shall be broadcast at the rate of rejection until no wet spots are visible. When the second coat has cured sufficiently to sustain working traffic, all excess aggregate remaining shall be removed by sweeping.
  - c) **Construction Details:** To ensure the monolithic nature of the overlay, attention to curb/floor junctions, drains, expansion joints, etc. is of critical importance. See appropriate details for handling these critical areas.
3. **Aggregate:** The aggregate shall be Flint Rock#9 and conforming to the following nominal gradation:

Sieve Size	Percent Retained
#12	4-12
#16	30-40
#20	25-37
#30	14-24
#40	2-9

The aggregates shall be packaged such that they arrive at the job-site and are maintained in a moisture-free condition for application in the overlay system.

4. **Minimum Coverage**

	SF/gal	Dry mils
First Coat	40-50	30-40
Second Coat	30-40	40-54
Aggregate lb/SF	1.2-1.5	
Total Polymer Build		70-94

**Table 1 Recommended Coverages**

1 Coverage may vary based on many field variables including condition of surface, aggregate size, and method of application. For best coverage results, use spray equipment. Contact manufacturer for information regarding approved spray equipment.

2 To obtain the high coverage, spray equipment must be used.

**3A.06 Curing**

Allow the epoxy overlay to cure sufficiently before subjecting it to loads or traffic of any nature that may damage the overlay. Cure time depends upon the ambient and deck temperatures. The field cure, if approved by the Engineer, can be determined as follows: The overlay shall be considered cured to a firm, hard state when no movement of the overlay can be detected when pressure is applied with the ball of the foot to the overlay. The following cure schedule is provided as a guide; however, actual degree of cure and suitability for traffic shall be determined by the manufacturer, acceptable to the Engineer, on the actual epoxy concrete overlay:

Degrees F	Hours
55	10
60	8
75	5
85	4

**3A.07 Cleaning**

- A. The uncured epoxy resin can be cleaned from tools with MEK or Xylene. Cured epoxy resin can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spill-overs onto adjacent areas.

**3B.0 MATERIAL AND EXECUTION FOR THREE COAT OVERLAY SYSTEM**

**3B.01 Performance Criteria:**

DECK WATERPROOFING

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The system shall be in strict accordance with the following requirements.

PROPERTIES	Primer	Base Coat	Top Coat
<b>A. Properties of the mixed system:</b>			
1. Pot Life (AASHTO T-237)	20-30 mins.	15-20 mins.	25-30 mins
<b>B. Properties of the cured system</b>			
a. Compressive Strength at 7 days			7000 psi
2. Tensile Properties (ASTM D-638) at 7 days			
a. Tensile Strength	N/A	2150 psi	2500 psi
b. Elongation at Break	N/A	650%	30%
3. Flexural Properties (ASTM C-580) at 7 days			
4. Hardness, Shore D, (ASTM D-2240)	N/A	N/A	60-70
5. Water Absorption, 24 hr. %, (ASTM D570)	N/A	N/A	0.20%
10. Adhesion to Concrete, (ACI Method 503R-30)	435 psi	Conc. Failure>500 psi	>435 psi

Note: Tests above were performed with material and curing conditions at 75+-2F and 45-55% relative humidity, unless otherwise stated.

### 3B.02 Patching and Crack Repairs

1. All weak and spalled concrete areas shall be marked and a one to two inch saw cut shall be made prior to jack hammering the non-structural concrete. Care should be taken not to slice or cut the steel rebars while saw cutting the marked area. These areas shall be sandblasted followed by an air blast to remove any loose dust.
2. A mortar using a multi-polymer thermosetting resin and clean, dry, dust-free silica may be used for patching, and should not be placed at thickness of more than 1" per lift.
3. Cracks and construction joints > 60 mils: Sawcut a 2/5" wide slot over the crack ensuring that the crack is centered in the cut. Prime as required and fill with a high quality polyurethane elastomeric sealant. Upon proper curing of the sealant prime and apply a 6" wide band of elastomeric system compatible with the overlay system.
4. Cracks extending from one end of a slab to the other require a double coat of the membrane system. After shot blasting the entire deck, these cracks should be blast again, followed by a strong air blast to remove any loose dust or debris in the crack. Prior to beginning the application of the Primer on the entire deck, these long cracks should be coated with Primer 2" on either side of the crack, followed by a Base Coat application at 25 mils thickness. When coating the entire deck with the membrane, these areas will automatically get a second coat of the membrane during the application.
5. Any area of the deck which has excessive cracking, due to shrinkage or stress, may be treated with the solvent-less Surface Seal System

### 3B.03 Surface Preparation

1. Sound the entire deck surface to ensure no delaminations are present. Spalls, delaminations, potholes, pop outs, scaling, and other defects must be treated prior to installation of the membrane system. All weak and spalled concrete shall be marked, and a 1-2" (2.5-5.0 cm) saw cut made prior to jack hammering the non-structural concrete. Care should be taken not to slice or cut the steel rebar while saw cutting the marked areas. These areas shall be sandblasted followed by air blasting to remove any loose dust. For patching material recommendations, consult manufacturer's technical service representatives. Ensure the repaired concrete has adequately cured before applying waterproofing. Generally 28 days is sufficient if normal Portland cement concrete is used to make the repairs. Consult manufacturer technical services for specific recommendations. Do not use magnesium phosphate concretes.
2. Treat all oil and grease contamination with a high quality emulsifier and absorbent.
3. Remove raised edges with vertical amplitude in excess of 40 mils using an abrasive grinding disc, paying particular attention to the sharp edges commonly found where power trowel are used. Failure to do so may result in premature wear to the coating, especially in drive lanes and ramp areas.

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4. Shotblast to remove all laitance, dirt, and other contaminants. Finished profile should be + 8 mils. High pressure water-blasting must be approved on a project to project basis by the material manufacturer and the Engineer.
5. Sandblast perimeters, around columns, and 6" up all walls. Protect existing finish from damage.
6. Scaled areas should be repaired using a specially designed scaling repair polymer product
7. Patch any honeycombed or spalled areas at wall bases with a fast cure polymer concrete solvent-less epoxy gel and sand mortar Remove any loose material from overflow, etc.

### 3B.04 Acceptability of Surface Preparation

Acceptability of the surface preparation will be determined by the Engineer, and should include the use of a vertical axis pull bond test. Test to be performed in accordance to ACI 503R-30.

4. This test consists of bonding a 2 inch diameter sandblasted steel disk to the prepared substrate by using a fast setting epoxy, and pulling it from the substrate by applying a vertical force.
5. The number of tests needed will be determined by the Engineer.
6. Substrate preparation shall not be approved unless at least 90% of the bonded steel disk surface has retained substrate concrete exceeding 1/4 inches in depth, and the pull out strength value is at least 250 psi.
  - d) At the discretion of the engineer the pull-out test may be carried out on the first polymer layer.
  - e) The minimum acceptable bond strength on normal weight concrete shall be 250 psi.
  - f) The Contractor shall repair all bond test locations with polymer overlay in accordance with this specification.

### 3B.05 Application

Surface should be free of any moisture and contaminants that will impede the performance of this coating. Installation should not occur if moisture content of concrete is >4.5%. The formulation of this system does not allow modifications by diluting or any such action in the field. The system cannot be applied in temperatures below 50 degrees F. Installation should not occur if Ambient temperature and Dew Point are within 5 degrees F

5. **Mixing of Components:**
  - a. Manually mix the resin and hardener components together for approximately 4 minutes while making sure to scrape the sides, bottom, and corners of the mixing container.
  - b. For large applications, it is a good practice to mix and use several small batches rather than one large batch.
  - c. The resin and hardeners used in this system will readily react with each other at ambient temperatures. This reaction is exothermic and, depending on the mass, can result in a significant temperature rise or fire. The utmost care must be taken to avoid inadvertent mixing of the system components. Refer to the Safety and Handling section for additional information.
6. **Application of Primer**

Prior to application of the **Primer**, the surface shall be dry and free of any contamination. Perform moisture tests at random locations 12 hours before applying the First Layer of the **Primer**. Bond tests should be performed wherever oil contamination or a weak substrate is suspected. Mix the Liquid as per Installation Manual's instructions. Apply over the prepared deck using flat squeegees and rollers, paying close attention to any hairline cracks or porous areas. The recommended application rates are stated in table 1.
7. **Application of Base Coat**
  - a. For best results, application of the Base Coat should be made within one to three hours of the application of the Primer (Temperature and sun will impact the time window).
  - b. The thoroughly mixed material should be applied on the properly primed surface using a combination of squeegee and short nap roller to spread and evenly cover the entire surface. The recommended application rates are specified in Table 1. Approved spray equipment can also be used for the application of the Base Coat.

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- c. In cracked areas or joints where movement is expected, a Base Coat application should be made prior to the application over the entire surface so that these areas get a double coat of Base Coat.

**8. Application of Intermediate Coat**

The Intermediate Coat, must be applied on the Base Coat within the time frame listed in Table A, based upon temperature conditions during curing of the Base Coat.

<b>Cure Temp</b> (for Base Coat)	<b>Below 60°F</b> <b>Below 15°C</b>	<b>60-70°F</b> <b>15-21°C</b>	<b>70-80°F</b> <b>21-27°C</b>	<b>80-90°F</b> <b>27-32°C</b>	<b>Over 90°F</b> <b>Over 32°C</b>
<b>Open Time</b> (for Wear Course)	12 Hours	8 Hours	6 Hours	4 Hours	3 Hours

**Table A: Open Time for Wear Course as a Function of Cure Temperature of Base Coat**

Spread the mixed material with the help of a notched squeegee and a combination of short nap roller to evenly cover the surface that has been entirely covered with Base Coat. The recommended coverage for the Wear Course is stated in Table 1.

**9. Aggregate**

Approved aggregate (see Tables B&C) should be broadcast on freshly placed Top Coat at the rate Indicated in Table 1. The guideline for proper broadcasting is to completely saturate the wet area with aggregate, with additional aggregate broadcast on any wet spots that appear.

Grain shape	Sub angular
Hardness	7.0 Mohs
Moisture content	<0.1%
Specific gravity	2.55-2.70 g/cm3
Bulk density, aerated	92-95 lb/ft3
Bulk density, compacted	98-100 lb/ft3

<b>Sieve Size</b>	<b>Percent Retained</b>
#18	---
#20	0.1
#25	8.3
#30	37.9
#35	39.8
#40	9.7
#50	3.8
#70	0.2
#100	0.1
#140	---

**10. Minimum Coverage**

	<b>SF/gal</b>	<b>Dry mils</b>
Primer	150-200	6-11
Base Coat	60-80	20-27
Intermediate Coat	60-80	20-27
Aggregate lb/SF	0.5	
Total Polymer Build		52-77

**Table 1 Recommended Coverages**

1 Coverage may vary based on many field variables including condition of surface, aggregate size, and method of application. For best coverage results, use spray equipment. Contact manufacturer for information regarding approved spray equipment.

2 Total mils exclude primer. Total buildup will vary with size and shape of specified aggregate due to the millage contributed by the aggregate.

3 To obtain the high coverage, spray equipment must be used.

**Limitations**

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- 1 Do not apply when rain or other inclement weather is anticipated.
- 2 Minimum application temperature is 50° F. For lower temperature applications contact manufacturer and engineer.
- 3 Do not apply when deck is out-gassing.
- 4 Do not apply over wet or damp surfaces. Deck should be dry a minimum of 24 hours.
- 5 Do not expose this system to sustained "in service" temperatures greater than 150°F dry, 120°F wet.

### **3B.06 Curing**

See Table A.

SECTION 07 14 13

HOT FLUID-APPLIED WATERPROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
  - 1. Reinforced waterproofing membrane.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide waterproofing that prevents the passage of water and complies with physical requirements in CAN/CGSB-37.50, "Hot Applied, Rubberized Asphalt for Roofing and Waterproofing."

1.3 SUBMITTALS

- A. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties.
- B. Shop Drawings: Show locations and extent of waterproofing. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins to adjoining waterproofing, and other termination conditions.
- C. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.
- D. Product Test Reports: From a qualified independent testing agency indicating and interpreting test results of waterproofing for compliance with requirements, based on comprehensive testing of current waterproofing formulations.
- E. Sample Warranty: Copy of special waterproofing manufacturer's and installer's warranty stating obligations, remedies, limitations, and exclusions before starting waterproofing.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who is authorized, approved, or licensed to install waterproofing manufacturer's products; and who is eligible to receive waterproofing warranty specified.
  - 1. Experience shall include 5 years of verifiable experience with submitted system.
  - 2. Superintendent assigned to project shall have supervised at least 5 previous projects of similar magnitude and design, and shall be present during all operations.

- B. Source Limitations: Obtain waterproofing materials, reinforcing sheets, sheet flashings, and protection layers through one source from a single manufacturer.
- C. Mockups: Apply waterproofing to 100 sq. ft. of deck to demonstrate surface preparation, crack and joint treatment, corner treatment, thickness, texture, and execution quality.
  - 1. Manufacturer's representative or designated representative will review workmanship for compliance with manufacturer's system requirements.
  - 2. If Engineer determines mockups do not comply with requirements, reapply waterproofing until mockups are approved. Do not proceed with rest of Work until mockups are approved.
  - 3. Field sample will be standard for judging workmanship on remainder of Work.
  - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- D. Preinstallation Conference: Conduct conference at Project site with general contractor, waterproofing installer, related subcontractors, representative of membrane manufacturer and Engineer. Review requirements for waterproofing, including surface preparation specified under other Sections, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver liquid materials to Project site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by waterproofing manufacturer.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- D. Protect stored materials from direct sunlight.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.
  - 1. Do not apply waterproofing in rain, fog, or mist.
- B. Maintain adequate ventilation during application and curing of waterproofing materials.

#### 1.7 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

- B. Special Manufacturer's Warranty: Written warranty, signed by waterproofing manufacturer agreeing to repair or replace waterproofing system including all system components that do not comply with requirements or that do not remain watertight within specified warranty period.
  - 1. Warranty does not include failure of waterproofing due to failure of substrate that is prepared and treated in compliance with specifications or formation of new joints and cracks in substrate that exceed 1/8 inch in width.
  - 2. Warranty includes removing and reinstalling protection board, drainage panels, and all roadway surface burden including concrete slab with steel reinforcement to access and repair defective waterproofing system.
  - 3. Warranty Period: Twenty (20) years after date of Substantial Completion.
- C. If waterproofing system does not comply with requirements or does not remain watertight within specified warranty period, supply labor and material to repair or replace all defective areas as indicated in Item B.
- D. Perform any repair under this guarantee at no cost to Owner.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide the following product:
  - 1. American Hydrotech, Inc.; Monolithic Membrane 6125 215-mil Fabric Reinforced System.
  - 2. Carlisle Corporation, Carlisle Coatings & Waterproofing Div.; CCW-500R 215-mil Fabric Reinforced System.
  - 3. Tremco; Tremproof 6145 215-mil Fabric Reinforced System.

Substitutions may be considered provided complete technical information and job references are furnished to the Owner/Engineer and approved prior to commencement of work.

### 2.2 MEMBRANE

- A. General: Provide waterproofing materials recommended by manufacturer to be compatible with one another and able to develop bond to substrate under conditions of service and application, as demonstrated by waterproofing manufacturer based on testing and field experience.
  - 1. Produce waterproofing materials suitable for application to vertical, horizontal, and sloped substrates, as applicable.
  - 2. Provide waterproofing materials with not less than 100 percent solids.
- B. Hot Fluid-Applied Waterproofing: Single-component; 100 percent solids; hot fluid-applied, rubberized asphalt with the following properties measured per applicable test methods in CAN/CGSB-37.50:
- C. Performance Requirements: The following properties are based on an industry standard system.

1. Flash Point: Not less than 260 deg C or not less than 25 deg C above manufacturer's maximum recommended application temperature.
2. Cone Penetration: 110 maximum at 25 deg C, and 200 maximum at 50 deg C.
3. Flow: 3 mm maximum at 60 deg C.
4. Toughness: Not less than 5.5 J
5. Ratio of Toughness to Peak Load: Not less than 0.040.
6. Adhesion Rating: Pass.
7. Water-Vapor Permeance: 1.7 ng/Pa x s x sq. m.
8. Water Absorption: 0.35-g maximum mass gain, or 0.18-g maximum mass loss.
9. Pinholing: Not more than one pinhole.
10. Low-Temperature Flexibility: No cracking.
11. Crack Bridging Capability: No cracking, splitting, or loss of adhesion.
12. Heat Stability: Comply with requirements for penetration, flow, low-temperature flexibility, and viscosity when heated for five hours at manufacturer's recommended application temperature.
13. Viscosity Test: 2 to 15 seconds.

### 2.3 AUXILIARY MATERIALS

- A. Primer: ASTM D 41, asphaltic primer.
- B. Elastomeric Flashing Sheet: 60-mil minimum, nonstaining, uncured sheet neoprene with manufacturer's recommended contact adhesives and predrilled metal termination bars and anchors, with the following physical properties as measured per standard test methods referenced:
  1. Tensile Strength: 1400 psi minimum; ASTM D 412, Die C.
  2. Elongation: 300 percent minimum; ASTM D 412.
  3. Tear Resistance: 125 psi minimum; ASTM D 624, Die C.
  4. Brittleness: Does not break at minus 30 deg F; ASTM D 2137.
- C. Sealants and Accessories: Waterproofing manufacturer's recommended sealants and accessories.
- D. Reinforcing Fabric: Manufacturer's recommended spun-bonded polyester fabric.
- E. Separator Sheet: ASTM D 4397, polyethylene sheet, minimum 4 mils thick.
- F. Protection Course: Semirigid sheets of fiberglass or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners and as follows:
  1. Thickness: 85-mil minimum.
  2. Adhesive: Rubber-based solvent type recommended by waterproofing manufacturer for type of protection course.

### 2.4 MOLDED-SHEET DRAINAGE PANELS

- A. Nonwoven-Geotextile-Faced, Molded-Sheet Drainage Panel: Manufactured composite subsurface drainage panels consisting of a nonwoven, needle-punched geotextile facing with an apparent opening size not exceeding No. 70 sieve laminated to 1 side and a polymeric film bonded to the other side of a 3-dimensional, nonbiodegradable, molded-plastic-sheet drainage core, with a vertical flow rate of 9 to 15 gpm per ft.

- B. Woven-Geotextile-Faced, Molded-Sheet Drainage Panel: Manufactured composite subsurface drainage panels consisting of a woven-geotextile facing with an apparent opening size not exceeding No. 40 sieve laminated to 1 side of a 3-dimensional, nonbiodegradable, molded-plastic-sheet drainage core, with a horizontal flow rate not less than 2.8 gpm per ft.

## PART 2 - EXECUTION

### 2.5 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements and other conditions affecting performance.
  - 1. Verify that concrete has cured and aged for minimum time period recommended by waterproofing manufacturer.
  - 2. Verify that substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
  - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

### 2.6 PREPARATION

- A. Clean and prepare substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
  - 1. Abrasive blast clean concrete surfaces uniformly to expose top surface of fine aggregate according to ASTM D 4259 with a self-contained, recirculating, blast-cleaning apparatus. Remove material to provide a sound surface free of laitance, glaze, efflorescence, curing compounds, concrete hardeners, or form-release agents. Remove remaining loose material and clean surfaces according to ASTM D 4258.
- E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

### 2.7 JOINTS, CRACKS, AND TERMINATIONS

- A. Prepare and treat substrates to receive waterproofing membrane, including joints and cracks, deck drains, corners, and penetrations according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and waterproofing system manufacturer's written instructions.

1. Rout and fill joints and cracks in substrate. Before filling, remove dust and dirt according to ASTM D 4258.
  2. Embed reinforcing fabric into a layer of hot, rubberized asphalt. Extend reinforcing fabric a minimum of 6 inches on each side of joints and cracks and beyond deck drains, corners, and penetrations.
- B. At expansion joints and discontinuous deck-to-wall or deck-to-deck joints, bridge joints with elastomeric flashing sheet extended a minimum of 6 inches on each side of joints and adhere to substrates in a layer of hot, rubberized asphalt.

## 2.8 FLASHING INSTALLATION

- A. Install flashing sheets at terminations of waterproofing membrane according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and waterproofing system manufacturer's written instructions.
- B. Prime substrate with asphalt primer.
- C. Install elastomeric flashing sheet and adhere to deck and wall substrates in a layer of hot, rubberized asphalt.
- D. Extend flashing sheet up curbs a minimum of 4 inches above structural deck and onto deck to be waterproofed.

## 2.9 MEMBRANE APPLICATION

- A. Apply rubberized asphalt according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and manufacturer's written instructions.
- B. Heat rubberized asphalt in an oil- or air-jacketed melter with mechanical agitator specifically designed for heating rubberized-asphalt waterproofing.
- C. Start application with manufacturer's technical representative present.
- D. Apply primer, at manufacturer's recommended rate, over prepared substrate and allow to dry.
- E. Reinforced Membrane: Apply waterproofing to substrates and adjoining surfaces indicated. Spread hot fluid-applied, rubberized asphalt to a thickness of 90 mils; embed reinforcing fabric, overlapping sheets 2 inches; and spread another 125-mil-thick layer to provide a uniform, reinforced, seamless membrane 215 mils thick.
- F. Apply waterproofing over prepared joints and up wall terminations and vertical surfaces to heights indicated or required by manufacturer.
- G. Cover waterproofing with separator sheet with overlapped joints while rubberized asphalt is still hot and before membrane is subject to traffic.
1. Install protection course with overlapped joints over separator sheet.

2.10 MOLDED-SHEET DRAINAGE PANEL INSTALLATION

- A. Place and secure molded-sheet drainage panels to substrate according to manufacturer's written instructions. Use adhesives that do not penetrate waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed molded-sheet drainage panels during subsequent construction.
  - 1. For vertical applications, install board insulation used as a protection course before installing drainage panels.

2.11 FIELD QUALITY CONTROL

- A. Flood Testing: Flood test each deck area for leaks, according to recommendations in ASTM D 5957, after completing waterproofing but before overlying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.
  - 1. Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches. Maintain 2 inches of clearance from top of sheet flashings.
  - 2. Flood each area for **24** hours.
  - 3. After flood testing, repair leaks, repeat flood tests, and make further repairs until waterproofing installation is watertight.
- B. Contractor will engage an independent testing agency to observe flood testing and examine underside of decks and terminations for evidence of leaks during flood testing.

2.12 CURING, PROTECTING, AND CLEANING

- A. Cure waterproofing according to manufacturer's written recommendations, taking care to prevent contamination and damage during application stages and curing.
  - 1. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Protect installed drainage panels from damage due to ultraviolet light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.
- D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction

END OF SECTION 07142

SECTION 07 19 16

CONCRETE PENETRATING SEALERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes concrete penetrating sealers for the following surfaces :
  - 1. Roadway concrete topping slab.
- B. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.
- C. Materials shall be compatible with materials or related work with which they come into contact.
- D. Provide barricades around the work area with appropriate signage to keep non-construction people from entering work area.
- E. Contractor shall provide all traffic cones or barriers to direct traffic during the repair of the facility. This work shall be done in consultation with the Owner.
- F. Related Sections:
  - 1. Division 03 Section "Cast-in-Place Concrete."

1.3 SUBMITTALS

- A. Product Data: Include manufacturer's specifications, surface preparation and application instructions, recommendations for water repellents for each surface to be treated, and protection and cleaning instructions. Include data substantiating that materials are recommended by manufacturer for applications indicated and comply with requirements.
- B. Applicator Certificates: Signed by manufacturer certifying that the applicator complies with requirements. Evidence shall include complete copy of manufacturer's licensing/certification document, spelling out repair responsibility for warranty claims.
- C. Certification that products and installation comply with applicable EPA, OSHA, and VOC regarding health and safety hazards.
- D. Material Test Reports: Indicate and interpret test results for compliance of water repellents with requirements indicated.
- E. Supplier shall furnish application rate at which following tests were passed:
  - 1. NCHRP 244 tests:

- a. Four inch cube series II (incorporating 5 days of air drying prior to coating test cubes): Upper limits of average weight gain and net chloride content at completion of cube test series shall be limited to 16% of weight gain and 14% of net chloride gain of untreated control cubes.
  - b. Southern climate exposure (Series IV): Upper limits of average content at end of 24 weeks shall be limited to 4% of net chloride content of untreated control cubes.
2. ASTM C672 test (non-air entrained concrete): Acceptable scaling rating shall be "zero plus."

#### 1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who employs only persons trained and approved by sealer manufacturer for application of manufacturer's products.
1. Experience shall include 5 years of verifiable experience with submitted system.
  2. Superintendent assigned to project shall have supervised at least 5 previous projects of similar magnitude and design, and shall be present during all operations.
- B. Manufacturer: Sealer shall be compatible with all materials to which it would be applied including, but not limited to, curing compounds, sealants, expansion joint, threshold assemblies, caulking, and concrete.

#### 1.5 PROJECT CONDITIONS

- A. Weather and Substrate Conditions: Do not proceed with application of water repellent under any of the following conditions, except with written instruction of manufacturer:
1. Ambient temperature is less than 40 deg F.
  2. Concrete surfaces and mortar have cured for less than 28 days.
  3. Rain or temperatures below 40 deg F are predicted within 24 hours.
  4. Application is earlier than 24 hours after surfaces have been wet.
  5. Substrate is frozen or surface temperature is less than 40 deg F.
  6. Windy condition exists that may cause water repellent to be blown onto vegetation or surfaces not intended to be coated.

#### 1.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty, executed by the applicator and sealer manufacturer, covering materials and labor, agreeing to repair or replace materials that fail to provide water repellency within the specified warranty period. Warranty does not include deterioration or failure of coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new joints and cracks in excess of 1/16 inch wide, fire, vandalism, or abuse by maintenance equipment.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable concrete sealers are listed below:
  - 1. Silane 100% solids 200 SF/G:
    - a. Hydrozo 100 by BASF
    - b. Protectosil BH-N by Evonik Degussa
    - c. Sikagard 705L by Sika
  - 2. Proposed substitutions: None for this project. Contact Engineer for consideration for future projects.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean substrate of substances that might interfere with penetration or performance of sealers. Test for moisture content, according to sealers manufacturer's written instructions, to ensure surface is sufficiently dry.
- B. Test for pH level, according to sealer manufacturer's written instructions, to ensure chemical bond to silicate minerals.
- C. Repair or replace all sealant materials damaged by surface preparation operations.
- D. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces. Cover live plants and grass.
- E. Coordination with Sealants: Do not apply sealer until sealants for joints adjacent to surfaces receiving sealer treatment have been installed and cured.
- F. Shot blast clean all surfaces to be sealed as acceptable to sealer manufacturer before sealer application. Prepare by sandblasting all surfaces inaccessible to shotblast equipment.
- G. Equipment used during floor slab cleaning shall not exceed height limitation of facility and shall not exceed 3,000 lb axle load or vehicle weight (6000 lb.)

### 3.2 APPLICATION

- A. All concrete to be treated shall be cured above 50 deg F. for at least 14 days before applying sealer.
- B. All concrete to be treated shall be air dried for at least 72 hours following surface wetting at temperatures above 50 deg F.
- C. Ambient and concrete temperatures shall be 50 deg F. or higher during application of sealer.

- D. Sealer work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, sealer, and sealant materials identical to those used in the work.
- E. Test Application: Before performing sealer work, including bulk purchase and delivery of products, prepare 3 trial applications in an unobtrusive locations to demonstrate the final effect (visual, physical, and chemical) of planned application. If application of sealer causes problems (i.e. glazing), contractor shall contact sealer manufacturer to obtain written recommendations for solving the problem.
- F. Contractor shall not proceed with sealer application following trial section applications until directed to do so in writing by Engineer.

### 3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Provide services of a factory-authorized technical service representative to inspect and approve the substrate before application and to instruct the applicator on the product and application method to be used.

### 3.4 CLEANING

- A. Protective Coverings: Remove protective coverings from adjacent surfaces and other protected areas.
- B. Immediately clean sealer from adjoining surfaces and surfaces soiled or damaged by sealer application as work progresses. Repair damage caused by sealer application. Comply with manufacturer's written cleaning instructions.

END OF SECTION 07 19 16

SECTION 07 95 13

EXPANSION JOINTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Contractor shall fully acquaint himself with the existing job site conditions and discuss the accessibility of the work areas with the Owner.
- B. Provide barricades around the work area with appropriate signage to keep non-construction people from entering work area.

1.3 SUBMITTALS

- A. Product Data: For each product indicated.
- B. An expansion joint system is detailed on Drawings. Shop drawings shall include temperature adjustment table with expansion joint opening calculated at 10°F increments. Shop drawing submittal shall show that proposed joint system is of similar gland configuration, capable of equal individual and combined movements in each direction when installed at designated temperature shown on drawings.
- C. Where installation temperature is other than specified temperature, submittal shall include calculations showing joint is capable of movement within design temperature range (supplied by Engineer) for "other" temperature, and that design and installation follow manufacturer's recommendations. Design temperature range is -30° F to +130° F. Material samples.
- D. Installation plans and large scale details. Show all conditions including, but not limited to, splices, terminations, and change in section or alignment.
- E. Other information required to define joint placement or installation.
- F. ADA Certification: Prior to installation, submit written certification from manufacturer indicating that expansion joints conform to Americans with Disabilities Accessibility Guidelines for Buildings and Facilities, as published by U.S. Architectural & Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, DC 20004-1111. 1-800-872-2253.
- G. Quality Assurance – Contractor setting expansion joint opening will require a temperature adjustment table to properly size joint gap at time of concrete pour or precast erection.
- H. Caution – The expansion joint movement capability and the actual joint gap movement may not coincide if Quality Assurance measure not followed.
- I. Submit test reports from accredited laboratory attesting to joint systems' movement capability and ADA compliance.

- J. Submit three copies of System Maintenance Manual.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer/Applicator: Review and approve all details before construction. Confirm in writing to Engineer.
- B. Applicator: Coordinate services with related Work including layout of joint system and approval of methods for providing joints.
- C. Applicator: Inspect site to insure proper joint configuration in field.
- D. Testing Agency at owner's expense shall check Shore A hardness in accordance with ASTM D2240 and ensure the limited upward buckling of ¼ inch or less.
- E. Manufacturer: Provide qualified representative for periodic inspection of Work.
- F. Pre-installation Conference: Conduct conference at Project site.
  - 1. Manufacturer: Provide qualified representative on site for duration of work.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels showing the following information:
  - 1. Manufacturer's brand name.
  - 2. Type of material.
  - 3. Directions for storage.
  - 4. Date of manufacture and shelf life.
  - 5. Lot or batch number.
  - 6. Mixing and application instructions.
  - 7. Color.
- B. Store materials in a clean, dry location protected from exposure to direct sunlight. In storage areas, maintain environmental conditions within range recommended in writing by manufacturer

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Install expansion joint systems within the range of ambient and substrate temperatures recommended in writing by manufacturer.

#### 1.7 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
  - 1. Special Warranty: Written warranty, signed by expansion joint manufacturer agreeing to repair or replace expansion joint systems that do not comply with requirements or that deteriorate during the specified warranty period.

- B. Warranty Period: Five years from date of acceptance of work, jointly executed by Manufacturer and Applicator.
- C. If material surface shows any of defects listed above, supply labor and material to repair all defective areas and to repaint all damaged line stripes.
- D. Perform any repair under this guarantee at no cost to Owner
- E. Vandalism and abnormally abrasive maintenance equipment are not normal traffic use and are exempted from warranty.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General:
  - 1. Conform to Americans with Disabilities Accessibility Guidelines for Buildings and Facilities, as published by U.S. Architectural & Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, DC 20004-1111. 1-800-872-2253.
  - 2. Material shall be applied in lengths no shorter than 20 ft, with no joints in the drive aisle.
- B. Field applied silicone sealant expansion joint system.
  - 1. Dow Corning 902 RCS by Dow Corning
- C. Precompressed, silicone-and-impregnated-foam hybrid expansion joint system.
  - 1. DSM System by EMSEAL

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Inspect surfaces to receive Work and report immediately in writing to Engineer any deficiencies in surface which render it unsuitable for proper execution of Work.
- B. Coordinate and verify that related Work meets following requirements:
  - 1. Concrete surfaces are finished as acceptable for system to be installed.
  - 2. Curing compounds used on concrete surfaces are compatible with Work to be installed.
  - 3. Concrete surfaces have completed proper curing period for system selected.
- C. Acid etching: Prohibited.
- D. All openings to occupied space shall be sealed to prevent cleaning materials, solvents and fumes from infiltration. All protective measures and/or ventilating systems required to prevent infiltration are incidental to this Work.

### 3.2 PREPARATION

- A. General Contractor: Correct unsatisfactory conditions in manner acceptable to installer before installing expansion joint system. All honeycombs and air voids in blockouts shall be patched as acceptable to Engineer prior to installation of Expansion Joint Sealant system.
- B. Coordinate expansion joint system with other related Work before installation of expansion joint.
- C. Check adhesion to substrates and recommend appropriate preparatory measures.
- D. Proceed with expansion joint system only after unsatisfactory conditions have been corrected in manner acceptable to installer and product manufacturer.
- E. Clean joints thoroughly in accordance with manufacturer's instructions to remove all laitance, unsound concrete and curing compounds which may interfere with adhesion.
- F. Cease installation of expansion joints under adverse weather conditions, or when temperatures are outside manufacturer's recommended limitations for installation.
- G. Cease installation if expansion joint blockouts and/or openings exhibit cracked edges, voids or spalls. Repair with accepted material prior to installation of expansion joint.
- H. Check elevations on each side of expansion joint gap utilizing metal straight edge to ensure flush slab-to-slab transition. Present discrepancies to Engineer.
- I. Check anticipated or actual minimum and maximum joint openings with Engineer. Compare to manufacturer's movement specifications and make joint sizing recommendations.

### 3.3 INSTALLATION

- A. In-place testing: Prior to opening to traffic, test joint seal for leaks with maintained continuously wet for 12 hrs. Repair leaks revealed by examination of seal underside. Repeat test and repairs until all leaks stopped for full 12 hrs.

### 3.4 CLEANING

- A. Clean off excess material and material smears adjacent to joints as work progresses using methods and materials approved by manufacturers.

### 3.5 PROTECTION

- A. Protect the Expansion Joint System during construction. Heavy construction vehicles will not be permitted to cross the joint without specific and written permission by the Engineer. Subsequent damage to the expansion joint system shall be repaired at the contractor's expense.

END OF SECTION 07 95 13

SECTION 31 22 00  
SITE GRADING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the grading of the site as required for construction of roadway surfaces as shown on the drawings and in accordance with these specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03 30 00 Cast-in-Place Concrete

1.3 PERMITS

- A. Prior to commencement of work, the Contractor shall be responsible for obtaining, at his own expense, all construction permits necessary to complete the project according to the plans and specifications.

1.4 APPLICABLE PUBLICATIONS

- A. The following specifications of the latest issue listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent required by the references thereto.

1. American Society for Testing and Materials (ASTM).

- a. D 698 - Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 5.5 lb. Rammer and 12-inch Drop.
- b. D 1556 - Density of Soil in Place by the Sand-Cone Method.
- c. D 1557 Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10 Pound Rammer and 18 Inch Drop.
- d. D 4253 - Maximum Index Density of Soils using a Vibratory Table.
- e. D 4254 - Minimum Index Density of Soils in Calculation of Relative Density.

1.5 PROTECTION OF EXISTING UTILITIES AND ADJACENT WORK

- A. Prior to earthwork operations, existing utilities, facilities and permanent objects to remain shall be located and adequately protected. When working near public and private utility company lines Contractor shall contact the local utility coordinating committee or the utility company involved to locate their lines.
- B. If unknown and uncharted utilities are encountered during excavation, promptly notify Owner and the governing utility company when determinable and wait for instructions.
- C. If it is ascertained by Owner that such utility line has been abandoned, properly cap line at a depth approved by Owner or remove line as directed.
- D. If such unknown utilities are encountered and work is continued without contacting the Owner for instructions, and damage is caused to said utilities, Contractor shall repair, at his own expense, such damage to the satisfaction of the Owner and the Utility Company.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Fill materials and sources must be approved by the Owner. The Contractor is responsible for providing adequate samples and testing results to the Owner for testing and approval. Select fill shall be used beneath all structures and pavements where fill material is required to achieve the grades and elevations on the plans.

2.2 FILL

- A. On site surficial clays may be used for general grading and filling. The fill shall be free of deleterious materials, including organics. The material shall be placed in loose lifts less than eight (8) inches in thickness and compacted to 95 percent of Standard Maximum Density between -1% and +3% of optimum moisture content as determined by ASTM D 698.
- B. Moisture Conditioning – Each layer shall be thoroughly manipulated by plowing, discing, or other approved methods the full depth of the layer being placed to insure uniform density and moisture distribution for proper compaction. The moisture content at the time of compaction shall be within the range specified in these special provisions. If the material is too dry, it shall be moistened by watering before and during manipulation, to properly condition the material for compaction. If the material is too wet, the compaction operation shall be delayed until the moisture content has been reduced to within satisfactory compaction range.

2.3 SELECT FILL

- A. Select fill soils or crushed concrete can be used in the building areas to retain moisture in the underlying clay soils during dry weather. The material used as select fill should be a very sandy clay to clayey sand with a liquid limit of 32 or less. We recommend the plasticity index of this material be between 4 and 14. The fill should be spread in loose lifts, less than 9 inches thick, and uniformly compacted to a minimum of 95 percent of ASTM Standard D 698 between -2% and +2% of the soil's optimum moisture content. The upper 6 inches of fill in unpaved areas near the building should consist of compacted on-site clay having a PI over 20 to minimize water infiltration into the select fill. Compact in 6" lifts to 95% ASTM D698.

2.3 TOPSOIL

- A. Topsoil material shall be native earthen material suitable for growth of vegetation such as silty and sandy loams. The site strippings may be used as topsoil unless otherwise dictated by the Owner. Topsoil shall be spread over the raised landscape areas to a depth of 4 to 6 inches and compacted to 90 percent of standard density ASTM D 698.

PART 3 - EXECUTION

3.1 EXAMINATION

Examine site conditions and subgrade for compliance with requirements of other sections in which that related work is specified, and determine if site conditions affecting performance of the work of this Section are satisfactory. Do not proceed with work of this Section until unsatisfactory conditions have been corrected in a manner acceptable to the Contractor. Starting work within a particular area will be construed as Contractor's acceptance of site conditions.

3.2 EXCAVATION

- A. General

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1. Contractor shall complete all excavation required regardless of the variations in hardness, type, or density of materials encountered, to the dimensions and elevations shown on the drawings. When unsatisfactory material is uncovered, that material shall be removed and replaced with structural fill, the extent of such excavation to be directed by the Owner. Unsatisfactory material shall be removed to the stockpile area or from the site as directed by the Owner.

### B. Excavation for Pavement

1. The material exposed after excavation shall be scarified to a depth of six (6) inches and compacted to at least 95 percent of Standard (ASTM D 698) Maximum Density within  $\pm$  2% percent of optimum moisture content of the soil. Where necessary to achieve the required compaction, stabilization methods as outlined in paragraph 3.02-B-4 of this specification shall be used.
2. Excavation required beneath pavement sections shall comply with elevations and dimensions shown on the plans and detailed sections within a tolerance of plus or minus 0.10 foot. Contractor shall take care not to disturb areas that are designated to be protected or are outside the construction limits. Excavated areas shall be kept free of ground and surface water.

## 3.3 FILL AND BACKFILL

### A. Placement

1. The upper 6 inches of subgrade soil should be compacted at -2% to +2% of optimum moisture to a minimum of 95% of Standard Proctor (ASTM D 698). Subgrades shall be proof-rolled prior to placing fill.
2. Each lift shall be thoroughly compacted and shall have obtained satisfactory density prior to proceeding with the next lift. The top six (6) inches shall be stabilized after placement as directed by Owner.
3. Material shall be free of trash and rocks over three (3) inches in diameter.
4. Fill shall be brought up to the proper elevations as determined from the lines, grades, sections and elevations shown on the plans.

### B. Compaction and Finishing

1. Suitable compaction equipment such as a sheepsfoot roller should be used.
2. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The surface grade shall be consistent with the drainage intent shown on the plans such that no ponding shall occur.
3. Surface shall not be more than 0.10 feet above or below the established grade, and all ground surfaces shall vary uniformly between indicated grades.
4. Cut material from the site may be used for fill material if approved by Owner. Where cut material is used as fill, each lift of such material shall be properly mixed to obtain a uniform material, with clay the predominant material when mixed with silt, and a plasticity index less than 20.

## 3.4 GRADING

### A. Roadway Subgrade

1. The upper 6 inches of subgrade soil should be compacted at -2% to +2% of optimum moisture to a minimum of 95% of Standard Proctor (ASTM D 698). The subgrade shall be proof-rolled.
2. Sand shall not be allowed for used in fine grading of the pavement areas.

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3. Subgrade moisture content and density must be maintained until paving is completed. Compaction shall be verified after any rain event.

### B. Rough Grading

1. Cut and fill shall be left sufficiently high to require cutting by fine grading.
2. Grade to subgrade depths required for construction of finished surface materials and for controlled internal drainage of site.

### C. Fine Grading

1. Fine grading shall conform to elevations required to insure finished elevations as indicated on the drawings.

## 3.5 EROSION PROTECTION

- A. There shall be at all times adequate protection to newly graded areas to prevent soil erosion.
- B. Soil erosion that occurs prior to acceptance of the work shall be repaired at no expense to the Owner.

## 3.6 DUST ABATEMENT

- A. The Contractor shall comply with applicable Federal, State, and local laws and regulations concerning the prevention and control of dust pollution.
- B. During the performance of the work required by these specifications or any operations appurtenant thereto, whether on right-of-way provided by the Owner or elsewhere, the Contractor shall furnish all the labor, equipment, materials, and means required, and shall carry out proper and efficient measures wherever and as often as necessary to reduce the dust nuisance, and to prevent dust which has originated from his operations from damaging crops, orchards, cultivated fields, and dwellings, or causing a nuisance to persons. The Contractor will be held liable for any damage resulting from dust originating from his operations under these specifications.
- C. Dust Control shall be accomplished by one of the following methods:
  1. Whenever ordered by the Owner, the Contractor shall furnish and distribute over the traveled road surfaces, which have not yet been fully restored, an application of Calcium Chloride. The material used shall be Regular Flake Calcium Chloride having a minimum chemical content of Calcium Chloride of 77%. Unless otherwise specified or ordered by the Owner, rate of application shall be three (3) pounds per square yard of surface covered.
  2. Whenever ordered by the Owner, the Contractor shall apply on traveled road surfaces "Bituminous Surface Treatment."
- D. The cost of sprinkling or of other methods of reducing formation of dust shall be included in the prices bid in the schedule for other items of work.

END OF SECTION 31 22 00