SECTION 2

Invitation for Bids (IFB) No 2014.02.06

2.0 SUMMARY OF WORK / SPECIFICATIONS

2.1 SUMMARY OF WORK

The Contractor shall provide all supervision, machinery, labor, equipment, supplies and material necessary to perform the work as indicated in the Technical Specifications and the Construction Plans for this project. The work consists of the construction of a new pedestrian bridge across the Coral Gables Waterway between Orduna Drive and Jeronimo Drive. The components include, but are not limited to demolition, prefabricated bridge, structural work, electrical grading, sidewalks, drainage, landscaping, and irrigation.

2.2 Conflicts

To the extent that there is a conflict between the various sections of the contract documents, the following order of documents shall indicate precedence:

2.2.1 In order of the most recent document date: Contract Modifications, Change Orders, Addendums, and/or modifications to the Technical Specifications or Plans authorized by the City.
2.2.2 Technical Specifications
2.2.3 General Provisions
2.2.4 Proposal and Bonds

2.3 Definitions

2.3.1 **Sediment** - sands, silt, debris and other materials.

2.3.2 **Contract Documents** - Technical Specifications, Permits, Construction Plans, General Provisions, Bid Proposals, Contract Modifications, Addendums, Change Orders and required Contractor Submittals related to the work.

2.3.3 **Mobilization** - The deployment by the Contractor of such equipment and material as is necessary to perform the work as detailed in the Contract Documents and in compliance with State, Federal and local laws and regulations.

2.3.4 **Demobilization** - The removal of all equipment and material associated with this Contract from the work locations and doing so in a manner which leaves the work sites in their original condition or in a condition acceptable to the City.

2.3.5 **Environmental Damage and/or Pollution** - The presence of chemical, physical or biological elements or agents which have the potential to adversely affect human health or welfare; unfavorably alter ecological balance; affect other species; or degrade the utility of the environment for aesthetic, cultural, historical or recreational purposes. The control of pollution and environmental damage require consideration of water, air, land, and cultural resources and includes management of construction activities, visual aesthetics, noise, and solid wastes as well as other pollutants. Pollutants include fuels and other hydrocarbons such as hydraulic fluid, paints and solvents; bilge water; solid wastes; and noise.

2.3.6 **Items of Historical or Archeological Value** - Man-made or altered artifacts over 50 years old.

2.3.7 **Plans/Construction Plans** - Any drawings as specified in the Contract Documents. The term "Plans" is synonymous with the term "Construction Plans" and the term "Drawings".

2.4. Pre-Construction Meeting:

After Contract Award and before construction operations are initiated, the City shall notify the Contractor of the date and time for a mandatory Pre-Construction Meeting. The purpose of the meeting shall be to develop a mutual understanding relative to details of the project, including all documentation and reporting requirements, daily administration of the project, and the working relationship between the Contractor and the City. The City shall review with the Contractor, the Contract Documents, submissions identified in the Technical Specifications, lines of contractual and administrative authority, submittal schedules and construction methods. A letter of record shall be written by the City documenting all items discussed at the meeting and a copy will be provided to the Contractor. Subsequent meetings may be scheduled to reconfirm mutual understanding immediately prior to the construction or during construction.

Required Submissions after Contract Award:

Within ten (10) days after Contract Award, the Contractor shall submit the following items for review and approval by the City.

2.4.1 **Letter of Understanding**: The Contractor will confirm that they have read, understand, and will abide by all terms and conditions of this contract and all of the permits, easements and any applicable ordinances, statutes, laws, rules or regulations which may affect this project and that they shall take responsibility for ensuring that their subcontractors have the same understanding and agree to abide by the same terms and conditions.

2.4.2 **Copies:** Of all other required licenses, permits and certifications.

2.4.3 **Monitoring Plan**

2.4.4 **Environmental Protection Plan**

2.4.5 **Quality Assurance**: QA Plan.

2.4.6 **Safety Plan**

2.4.7 **Operations Plan**: The Operations Plan shall include the following:

2.4.7.1 **Work Progress Schedule.**

2.4.7.2 **Letter of Appointment** designating a Project Superintendent(s), describing responsibilities and providing qualifications.

2.4.7.3 **Proposed Equipment List** including the specifications for horizontal and vertical positioning equipment and monitoring equipment including calibration information and limits of accuracy.

2.4.7.4 **Proposed Construction Sequence and Methodology** describing mobilization, demobilization and daily operations referenced to the work areas delineated in the Contract Documents.

2.4.7.5 **Proposed Subcontractors** and the segment of work for which they will be responsible. Each Subcontractor shall also provide a list of a minimum of four (4) similar previously conducted projects including the names of the projects, dates, project descriptions, dollar amount of contract awards and names and phone numbers of the Contractor's agents.

2.4.7.6 **Other Items** as may be specified elsewhere in the Contract Documents.

2.5 Permits, Licenses, Certifications, Approvals, and Easements

2.5.1 **Permits**: All permits will be completed and approved prior to commencement of work.

2.5.2 **License Requirements**: The Florida Department of Business and Professional Regulation (DBPR) The contractor performing the work shall possess a State of Florida **General Contractor License**.

2.6 Compliance: The Contractor shall comply with all requirements of the permits, easements, and conditions of this contract, including all Environmental Permits that apply. The Contractor shall conspicuously post copies of all permits on the job site. Any other licenses or approvals required for the execution of this work shall be secured and paid for by the Contractor.

The Contractor shall be responsible for ensuring that all project personnel of the Contractor and their subcontractors are fully aware of and abide by all applicable requirements and conditions stated in the attached permits and any applicable ordinances, statutes, laws, rules or regulations which may affect this project or the Contractor's/Subcontractor's work under this project, including but not limited to safety regulations and minimum wage regulations. The Contractor further agrees to be solely responsible for ensuring their personnel and Subcontractors are informed of any modifications to any such applicable permits, ordinances, statutes, laws, rules or regulations.

2.6.1 **Non-Compliance**: The Contractor shall immediately notify the City of any non-compliance with the permits, easements or terms and conditions of this contract including the Contractor's Environmental Protection Plan. Any non-compliance noted by the City shall be brought to the attention of the Contractor and the appropriate regulatory agencies. The responsible regulatory agency will determine the action to be taken and the City will notify the Contractor. Such actions may include discontinuing construction of the project until the Contractor complies with the Environmental Protection Plan. The Contractor shall comply and require all Subcontractors to comply with all applicable Federal, State or local laws or regulations, permits, easements and all elements of the Environmental Protection Plan. The Contractor shall be liable for any actions or delays resulting from any violation or non-compliance with the conditions of the permits, easements and terms of this Contract attributable to their personnel or Subcontractors.

2.7 Reporting Requirements

Contractor's Daily Quality Control Report: The Contractor shall prepare and submit to the City the Contractor's Daily Quality Control Report with attachments on a daily basis by noon of the following day. Reports shall be provided from the first day of mobilization to the last day of work including site restoration and shall include a narrative describing the length and nature of any delays in work. This item shall be performed at the expense of the Contractor.

2.8 Monitoring and Environmental Protection Requirements

2.8.1 **The Environmental Monitoring Plan and Environmental Protection Plan:** The Contractor shall prepare an Environmental Monitoring Plan and an Environmental Protection Plan addressing the minimization and/or prevention of environmental damage and pollution resulting from all operations under this Contract. The Plans will be discussed at the Pre-Construction Meeting and the City may, at their discretion, specify revisions to be incorporated by the Contractor. City approval of the Plans shall be a required prerequisite to the start of construction. The Contractor's Project Superintendent shall be responsible for the implementation of the Plans and shall attend the Pre-Construction Meeting. This item and the associated work shall be performed at the expense of the Contractor.

2.8.2 **The Environmental Monitoring** Plan: Environmental resources within the project boundaries and those potentially affected outside the work areas of this Contract shall be monitored during conduct of this work. The Environmental Monitoring Plan shall include, but not be limited to, the following specifications.

2.8.2.1 **Turbidity Monitoring:** The Contractor shall provide all labor, equipment, and materials necessary to obtain, analyze and report turbidity levels in accordance with the water quality monitoring requirements specified in the Contract Documents. The City reserves the option to accompany the Contractor during any or all turbidity sampling activities.

2.8.2.1.1 **Quality Control:** The nephelometer shall be calibrated immediately prior to each sampling event and recalibrated every thirty (30) minutes during a sampling run or as directed by the manufacturer. The time of each calibration shall be recorded. The Contractor shall provide the City with a duplicate of the standard used to calibrate the nephelometer. Two replicate samples shall be analyzed at each station during each sampling event. The Contractor's authorized technician shall attest to the accuracy of the reported data, testing equipment and procedure by signing and dating the Turbidity Monitoring Report. The City may direct that additional tests be performed at the Contractor's expense.

2.8.2.1.2 **Transportation**: The Contractor shall provide suitable transportation as requested by City staff to monitor the collection and analysis of turbidity samples as well as to collect and analyze comparative samples using City equipment. All monitoring shall be conducted in accordance with the Contractor's Quality Assurance Plan.

2.8.2.2 **Turbidity Reporting**: Turbidity Monitoring Reports and Charts as provided in Appendix B shall be submitted to the City daily as part of the Contractor's Daily Quality Control Report. Turbidity readings shall be reported in Nephelometric Turbidity Units (NTUs). Also reported will be date and time of Nephelometer calibration, sample collection and sample analysis; water depth; sample depth and position. Sampling locations, plume configuration and the location of the dredge and pipelines are to be documented on the map accompanying the Turbidity Monitoring Report. In the event that turbidity exceeds 29 NTUs above background, The Contractor shall IMMEDIATELY CEASE work activities, notify the City and repeat the sampling and analyses until the turbidity has returned to acceptance levels. The Contractor shall be liable for any non-compliance with the conditions of the permits and terms of this Contract attributable to their personnel or Subcontractors.

2.9 Environmental Protection and Required Plan:

2.9.1 **Property and Vegetation Protection:** The City shall identify all property resources to be preserved within the Contractor's work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources including, but not limited to trees, shrubs, grasses, top soil, structures, pavement, fencing, roadways, irrigation equipment and land form unless directed to do so by the City in the plans. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall be responsible for the replacement of any damaged or destroyed property or vegetation, to the satisfaction of the City. Failure to replace damaged or destroyed property or vegetation by the Contractor shall result in replacement by the City and the cost of replacement shall be deducted from monies due or to become due to the Contractor. The Contractor shall be liable for any noncompliance with the conditions of the permits, easements and terms of this contract attributable to their personnel or Subcontractors.

Miami-Dade County DERM Pollution Control Division (PCD) requires that the Contractor shall include the following conditions included as part of the Turbidity Control and Water Quality Monitoring Plan in support of Class I Permit # CLI-2013-0331 and environmental protection.

2.9.1.1 Prior to the commencement of work activities the Contractor shall submit the following information to the PCD for review and approval.

a) A copy of the Material Safety Data Sheet for the polymer to be utilized prior to the discharge of the effluent back to the Canal.
b) Application rates for the polymer.
c) Any potential impact to the environment from the material or its by-products.

d) Other applicable toxicological or fate and transport information relating to the selected polymer.

2.9.2 **Pollution Prevention**: The Contractor shall continuously monitor and manage all construction activities to comply with the following environmental requirements for pollution prevention:

2.9.2.1 **Pollution Control Facilities**: The Contractor shall maintain constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities continue.

2.9.2.2 **Air**: The Contractor shall make all possible efforts to minimize air pollution. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall comply with all applicable air pollution standards.

2.9.2.3. **Noise**: The Contractor shall make all possible efforts to minimize noise. All hauling and excavating equipment, including dredges and booster pumps, used on this work shall be equipped with satisfactory mufflers or other noise abatement devices. The Contractor shall conduct these operations so as to comply with all Federal, State, and local laws pertaining to noise. The use of horns, whistles, signals, and handling of dredge pipelines shall be held to the minimum necessary in order to ensure as quiet an operation as possible while maintaining safety on the job site.

2.9.2.4 **Solid Wastes**: Solid wastes (trash) shall be placed in containers, which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums or any other debris shall be disposed overboard into the canal.

2.9.2.5 **Fuel Dispensing**: Secondary containment which is capable of holding 110 % of tank contents must be provided for each fuel storage tank and placed on a level surface. Fuel dispensing areas shall have available a 4- foot square, 16gauge metal pan with borders banded up and welded at comers directly below the bib. Edges of the pans shall be 8inch minimum in depth to ensure that no contamination of the ground takes place. Pans shall be emptied immediately after every dispensing of fuel. Should any spilling of fuel occur, the CONTRACTOR shall immediately excavate the contaminated material and deliver it to an approved processing facility.

2.9.2.6 **Oil and Hazardous Material Spills and Containment**: All hazardous material spills, including hydraulic fluid spills, shall be immediately reported to the CITY. All hazardous material spills shall be immediately cleaned up in accordance with all applicable laws and regulations.

2.9.2.7 **Sanitary Facilities**: The Contractor shall supply and maintain one (1) temporary sanitary facility for the use of land based employees and Subcontractors. The facility shall be conveniently located in the vicinity of the processing plant. The facility shall be removed at the end of the project.

2.9.3 **Historical. Archeological, and Cultural Resources**: If during construction activities, the Contractor observes or encounters items that may have historical or archeological value, such items shall be reported immediately to the City so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition is required. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees and Subcontractors from trespassing on, removing, or otherwise damaging

such resources. The Contractor shall report any observed unauthorized removal or destruction of such resources by any person to the City.

2.9.3.1 **Environmental Protection Plan**: The Environmental Protection Plan shall be dated and endorsed by the individual in responsible charge of the construction and shall include, but not be limited to, the following:

2.9.3.2 A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the CONTRACTOR'S proposed operations and the requirements imposed by those laws, regulations, and permits.

2.9.3.3 Methods for Protection of Features and Habitats to be Preserved within Authorized work Areas: The Contractor shall prepare a listing of methods to protect resources needing protection; i.e. all vegetation (trees, shrubs, vines, aquatic plants and ground cover), landscape features, air and water quality, fish and wildlife, soil, historical, archeological and cultural resources.

2.9.3.4 Procedures to be implemented to provide the required environmental protection and to comply with the applicable permits. Laws. and regulations: The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

2.9.3.5 **Identification:** A statement identifying person(s) who will be responsible for implementation of the Environmental Protection Plan. The Contractor personnel responsible shall report directly to the Contractor's top management and shall have the authority to act for the CONTRACTOR in all environmental protection matters.

2.9.3.6 A statement acknowledging that the Contractor is responsible for environmental protection, including all of the Contractor's personnel and Subcontractors.

2.9.3.7 **Manatee Conditions:** Since the Florida manatee occurs in the water adjacent to the property, the permittee and Contractor shall take measures to protect manatees during and after the construction. Failure to comply with any of the below listed measures may result in revocation of all or a portion of the performance bond. These measures shall include the following:

(1) All construction personnel shall be notified of the possible presence of manatees in the area and the precautions that should be taken during the construction period.

(2) All construction personnel shall be advised that there are civil and criminal penalties for harming, harassing or killing manatees, which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act of 1978. The permittee and Contractor shall jointly be held responsible for any manatee harmed, harassed, or killed as result of construction activities.

(3) Turbidity curtains shall be made of a material in which manatees cannot become entangled. Said curtains shall be properly secured, and shall be regularly monitored to avoid manatee entrapment. Curtains shall not block manatee, entry to or exit from essential habitat

(4) All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in water adjacent to the property where the draft of the vessel provides less than a 4-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

(5) All in-water construction activities shall cease upon the sitting of a manatee(s) within 50 feet of the project area. Construction activities will not resume until the manatee(s) has departed from the project area.

(6) Any collisions with and/or injury to a manatee shall be reported immediately to the "Manatee Hotline" (1-888-404-FWC), and to DERM (305) 372-6575.

(7) The Contractor shall maintain a log detailing sightings, collisions, or injuries to manatees should they occur during the contract period. Following project completion, a report summarizing the incidents and sightings shall be submitted to DERM within sixty (60) days of the project completion.

(8) Temporary signs shall be posted regarding manatees prior to and during all construction and/or work activities. The signs must measure at least 3 ft. by 4 ft. and warn *Caution: Manatee Area*. The sign will be posted in a location visible to the construction crews. A second sign should be posted if vessels are associated with the construction and/or work. The second sign must be placed in an area visible to the vessel operator and should at least be 81/2" by 11". This sign must read *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50' of operation. Any collision with and/or injury to a manatee shall be reported immediately to the FWCC Hotline at 1-888-404-FWCC. The U.S. Fish and Wildlife Services must also be contacted at 1-564-562-3909 and the Department of Environmental Resources Management at 305-372-6575.*

2.10 Quality Assurance

The Contractor shall be solely responsible for assuring the quality of all work conducted by the Contractor or their Subcontractors in association with the contract for this project. The Contractor shall designate a Quality Assurance (QA) Officer for this contract, and the QA Officer shall assume responsibility for compliance with all requirements of this contract including permit conditions, easements, statutes, laws and applicable regulations. The Contractor shall prepare a Quality Assurance Plan specifying Quality Control (QC) procedures for all critical components of the work. The Contractor shall provide the City access to all QC procedures, data, and reports at any time at the request of the City. All costs related to activities associated with QNQC shall be borne by the Contractor.

Unless otherwise noted, all QC procedures shall be conducted by the Contractor. The Contractor shall revise the QA Plan at the discretion of the City. City approval of the QA Plan shall be a required prerequisite to the start of construction. The Contractor shall maintain the QA Plan and all QC procedures in accordance with any changes made by the City throughout the term of the contract.

The QA Plan shall include but not be limited to the following:

2.10.1 **Letter of Appointment**: designating a QA Officer(s), describing responsibilities, providing qualifications and delineating the line of authority and organizational reporting requirements of the QA Officer.

2.10.2 **Personnel Training**: Personnel responsible for initial training and dissemination of updated information throughout the term of the contract shall be specified as well as a comprehensive list of training issues covered. Training shall include review of all applicable Technical Specifications, permit conditions, licenses, easements, statutes, laws, and other regulations, environmental resource protection, methods of detecting and avoiding pollution, statutory and contractual pollution standards, and installation and care of facilities to insure adequate and continuous environmental pollution control. QNQC and supervisory personnel shall be thoroughly trained in the proper use of pollution monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of applicable Federal, State, and local laws, regulations, permits, easements and other applicable requirements.

2.10.3 **Quality Control Methods** shall include those requirements specified for monitoring and environmental protection, equipment calibrations, turbidity monitoring, processed material testing and any other methods the Contractor proposed to assure the quality of their work. These methods'

shall also be used for any and all work that will be performed by Subcontractor(s).

2.10.4 **QC Reporting Requirements** shall also be specified in the QA Plan. The Contractor shall be required to prepare and submit to the City the Contractor's Daily Quality Control Report (Appendix B). Reports shall be provided daily from the first day of mobilization to the last day of work including site restoration.

2.10.5 **QA Inspections**: All compliance inspections conducted by the Contractor or the City shall be individually recorded on the Contractor's Daily Quality Control Report. The inspector shall also record the recommended corrective action to be taken and shall conduct a follow-up inspection within 24 hours to ensure compliance with the corrective action.

2.10.6 **QA/QC Deficiencies**: The Contractor is responsible for implementing any corrective actions recommended by the Quality Assurance Officer or the CITY. Reported deficiencies shall require follow-up inspection within 24 hours by the Contractor's Quality Assurance Officer and/or the CITY. Recurring deficiencies in an item or items may indicate inadequacies in the Quality Assurance Plan and the Contractor may be required to revise the QA Plan as directed by the CITY and advice appropriate personnel of any modifications required.

2.11 Safety Requirements

The Contractor shall specify all safety inspection procedures and designate personnel responsible for supervising accident prevention activities and insuring compliance with safety measures.

2.11.1 **Letter of Appointment**: Designating a Safety Officer(s), describing responsibilities, providing qualifications and delineating the line of authority and organizational reporting requirements of the Safety Officer.

2.11.2 **OSHA. Standards**: The Contractor shall review the Corps of Engineers Manual, General Safety Requirements EM 385-1-1, dated September 1996 and the latest Occupational Safety and Hazard Agency (OSHA) standards and become fully knowledgeable of the personal protective equipment that must be provided workers and shall be familiar with the safety standards applicable to the prevention of accidents during the construction of this project and shall comply with all applicable provisions.

2.11.3 **Medical Emergencies**: The criteria for designating a medical emergency and the procedures to be followed shall be specified by the Contractor. These procedures shall include local information relative to emergency treatment facilities and methods of transporting personnel if necessary.

2.11.4 **Hurricanes and Severe Storms**: The Contractor shall monitor the NOAA marine weather broadcasts and other local commercial weather forecasting services during construction operations. The Contractor shall notify the City at the time of any decision to move equipment in preparation for potential storms. The Contractor shall include the following information in the hurricane and storm procedures: Weather Conditions for Terminating Operations: The Contractor shall provide a list of the equipment scheduled for use on this project and specify the conditions (e.g. wind speed, wave height, etc.) under which operations will be terminated and equipment will be secured.

2.11.4.1 **Prioritized Methods for Storm Preparations**: The Contractor shall provide a prioritized list of actions to be taken in the event of a severe storm. The CONTRACTOR shall specify how each piece of equipment will be secured in place or moved to a safe location.

2.11.4.2 **Emergency Response for Equipment Failure**: The Contractor shall specify emergency operating procedures to be implemented in the event of mooring equipment failures during sudden and severe adverse weather or any other conditions. These procedures shall include actions to be taken in response to loss of a spud(s), swing wires, anchor wires, or other mooring equipment or facilities.

2.11.4.3 **Fire Extinguishers**: The Contractor is specifically required to provide a fire extinguisher on all mobile construction equipment with a basic minimum extinguisher rating of 80-B: C to 120-B: C.

2.11.4.4 **Backup Alarms**: The Contractor shall operate and maintain backup alarms on all land based mobile construction equipment.

2.12 Local Information

Weather Conditions: The project area may be affected by tropical storms and hurricanes primarily from June through November, and by windy and/or rainy weather, including severe electrical storms, during any time of the year. The Contractor shall be responsible for obtaining information concerning rain, wind and wave conditions that could influence operations prior to making a bid.

2.13 Electricity

Electric current required by the Contractor shall be furnished at the Contractor's expense. All temporary connections for electricity shall comply with NEC 1990. In the event electricity is made available by the City, the Contractor shall, at the Contractor's expense, install a meter to determine the amount of current used and such electricity shall be paid or charged to the Contractor at prevailing rates or at reasonable rates as determined by the City. All temporary lines shall be furnished, installed, connected, and maintained by the Contractor in a manner satisfactory to the City and shall be removed by the Contractor in like manner, at the Contractor's expense, prior to completion of the construction. In accordance with NEC Article 305-6, the Contractor shall provide ground fault circuit interruption (GFCI) on all 120 volt 15 and 20 ampere, single-phase receptacles used for construction power. Ground fault circuit interrupters are not an acceptable substitute for grounding.

2.14 Exclusion of the Public

The Contractor shall exclude the public from the immediate work areas at all times during construction

2.15 Traffic Control

Unless otherwise specifically permitted by the proper authorities, the Contractor shall at all times maintain the streets passable on which his is conducting his work. The contractor will maintain access to all houses, garages, etc., with the least possible interruption and shall conduct his work so that the inconvenience to all property owners adjacent to the work will be at a minimum. All property owners shall be notified in advance if access to their property is to be temporarily interrupted in case of any hardship resulting there from, the Contractor shall make suitable arrangements with the property owners to the satisfaction of the Director.

The Contractor shall provide all temporary signing, striping, detouring, barricading, signals, competent flagmen, and etc. required in accordance with the minimum requirements of the current Manual of Uniform Traffic Control Devices, whenever and wherever needed for pursuance of the project, and/or as directed by the owner or designated representative. The Contractor shall also coordinate these operations with the City of Coral Gables Public Works Department and Miami Dade County Department of Public Works. The Contractor shall supply the owner or designated representative with a traffic maintenance plan. Use of Police must be approved in advance by the City of Coral Gables. The Contractor may not submit additional charges for cost incurred for providing a Maintenance of Traffic plan.

2.16 Protection of Work - Risk of Loss:

All construction and associated activities specified in the Contract Documents for this project shall be performed at the sole risk and cost of the Contractor from commencement until final payment by the City. Any specific references contained in the Contract Documents that the Contractor shall be responsible at its sole risk and cost for the work or any part thereof are not intended to be, nor shall they be construed to be, an exclusive listing of the circumstances in which the Contractor bears the risk of loss, but rather they are intended only to be exemplary. All loss or damage caused by the nature of the work or work environment, acts of nature such as storms, unusual obstructions to the work, or any other natural or existing circumstances either known or unforeseen that may be encountered in the conduct of the work, shall be sustained and borne by the Contractor at its own cost and expense. The Contractor shall have no claim against the City because of any damage or loss to the work or Contractor's materials, equipment or supplies, including no claim for loss or damage due to simultaneous work by others, and the Contractor shall be responsible for the complete restoration of damaged work to its original condition complying with the Contract Documents. Notwithstanding any other provision of this Contract, this obligation shall exist without regard to the availability of any insurance, either of the CITY or the Contractor, to indemnify, hold harmless or reimburse the Contractor for the cost incurred in making such restoration.

2.17 Project Superintendent

The Contractor shall designate in writing to the City, a land-based Project Superintendent(s) to receive

instructions from the City. Written instructions received by the Contractor's Project Superintendent(s), shall be legally binding on the Contractor pursuant to this Contract. The Contractor's Project Superintendent(s) shall be on the site at all times during project construction and available at all times to the City by Email and/or cell phone.

2.18 Work Progress Schedule

2.18.1 The Work Progress Schedule shall be in the form of a bar graph showing the time allotted for each of the various tasks. The Schedule shall show the various tasks of work in sufficient detail to demonstrate that the Contractor has a reasonable and workable plan to complete the Project within the Contract Period. The Schedule shall show the order and interdependence of tasks and the sequence in which the work is to be accomplished as planned by the Contractor. All activities shall be described so that the work is readily identifiable and the progress on each task can be readily measured. Each task shall show a beginning work date and duration. Tasks shall include procurement time for materials, plants and equipment, various tasks involved in mobilization/demobilization and rate of operations. The list of tasks shall include milestones when indicated by the Contract Documents.

2.18.1 The Schedule discussed at the Pre-Construction Meeting and shall become part of the Contract Documents. If the Schedule submitted is determined to be inadequate by the City, it shall be returned to the Contractor for correction. Approval of the Schedule shall be a required prerequisite to the start of construction. When approved, this original Schedule shall constitute the baseline against which progress is measured. If revisions are required to the Work Progress Schedule during the Contract Period, the Contractor shall furnish revised charts and analysis within fifteen (15) calendar days after being notified by the City. Failure to finalize the revised Schedule in the time specified shall result in withholding of all Contract Payments until the revised Schedule is approved. This item shall be performed at the expense of the Contractor.

2.19 Order of Work

The Contractor shall propose the construction sequence and methodology and present this information as part of the Operations Plan. The Operations Plan will be discussed at the Pre-Construction Meeting. City approval of the Operations Plan shall be a required prerequisite to the start of construction.

2.20 Equipment Mobilization and Demobilization

2.20.1 Mobilization and demobilization to and from the project site shall be controlled by the Contractor. This item shall be performed at the expense of the Contractor. The cost of bonds, required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be the responsibility of the Contractor.

2.20.2 The Contractor shall perform the preparatory work and operations in mobilizing for beginning work on the Project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment, environmental protection and pollution prevention devices and first aid supplies, sanitary and other facilities, as required by Section 101 of the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, 1991, the Special Provisions, and State and local laws and regulations.

2.20.3 The Contractor shall be familiar with the weight of all equipment and weight restrictions of all roadways and bridges that are necessary to mobilize to the site.

2.21 Site Restoration

Site restoration shall include removal of the Contractor's plant(s) and all equipment or materials either for disposal or reuse. Plant(s) and/or equipment or materials for disposal shall be disposed of in an appropriate and legal manner at the expense of the Contractor.

Unless otherwise approved in writing by the City, the Contractor shall not be permitted to abandon pipelines, pipeline supports, pontoons, or other equipment in the pipeline access areas, plant area, or other areas adjacent to the work site. All costs associated with site restoration shall be borne by the Contractor.

2.22 Construction

2.22.1 **Operation Schedule**: The Contractor shall confine construction operations to the hours of Monday to Friday: 7:30 a.m. to 6:00 p.m.

2.22.2 **Debris**: During all phases of the work, all debris, submerged or otherwise encountered, shall be disposed of in an appropriate and legal manner and at the expense of the Contractor.

2.22.3 **Work Areas**: The material processing and pipeline layout limits available to the Contractor for accomplishing the work are shown in the plans. The Contractor shall minimize disruption to traffic on Bird Road. Temporary areas for storage and maintenance of construction equipment shall be restricted to specified areas as defined by the City. Granada storage areas shall be kept neat and orderly in the interest of public safety.

2.22.4 **Damages**: In the event that damage is caused by the Contractor, the Contractor shall restore all sidewalks, roads, access ramps, or any other structure or natural feature to pre-construction conditions or better at the Contractor's expense. The Contractor shall not receive final payment until all damage is restored to the satisfaction of the City.

2.22.5 **Misplaced Material**: If, during the progress of the work, the Contractor should lose, dump, throw overboard, sink, or misplace any material, plant, machinery, or appliance which in the opinion of the City should be removed, the Contractor shall recover and remove the material(s) immediately. The Contractor shall provide immediate notice to the City including a description of and DGPS coordinates for such material. Should the City observe such materials, the City shall record the position or mark the material and notify the Contractor. Removal of the material and all associated costs shall be the responsibility of the Contractor. The City shall monitor any removal operations. Should the Contractor refuse, neglect, or delay compliance with the above requirements, such material may be removed by the City, and the cost of such removal may be deducted from any money due or to become due to the Contractor or may be recovered under the Contractor's bond.

2.23 Measurement and Payment

2.23.1 **Payment**: Payment shall be made according to the unit price, per cubic yards, indicated on the Bid Proposal. The unit price, per cubic yards, shall be compensation for all activities required under this Contractor including, but not limited to, mobilization, demobilization, equipment, labor, supplies, surveys, clean-up and restoration of all areas disturbed by the Contractor's effort. No additional payment shall be allowed for work outside the accepted limits of the project area or for restoration of areas on public or private property disturbed during the work. The Contractor shall provide post construction photos for each portion of the work area completed on no more often than a monthly basis. Partial payments shall be made minus a ten (10) percent retainage for sediment actually removed and processed from the defined work area.

SPECIFICATIONS OF STEEL PEDESTRIAN BRIDGE

These specifications are for a fully engineered clear span bridge of steel construction and shall be regarded as minimum standards for design and construction.

2.24 Pre-Approved Manufacturer:

These specifications are based on products designed and manufactured by the Pre-Approved Manufacturer:

CONTECH Bridge Solutions Inc. (A Continental Bridge brand)
8301 State Highway 29 North,
Alexandria, MN 56308

Phone: 1-800-328-2047 or (320) 852-7500
Fax: 320-852-7067
E-mail: continental@contechbridge.com

In cases where an item is identified by a manufacturer's name, trade name, catalogue number, or reference, it is understood that the Bidder proposes to furnish the item so identified and does not propose to furnish an "EQUAL" unless the proposed "EQUAL" is definitely indicated therein by the Bidder.

The reference to a name brand is intended to be descriptive, but not restrictive and only to indicate to the prospective Bidder articles that will be satisfactory. Bids on other makes and catalogs will be considered provided each Bidder clearly states in the Bid exactly what is proposed to furnish and forward with his Bid a cut illustration or other descriptive matter which will clearly indicate the character or the article covered by this Bid.

The City hereby reserves the right to approve as an equal, or reject as not being equal, any article the Bidder proposes to furnish which contains major or minor variations from the specification requirements but may comply substantially therewith.

Each Bidder is required to identify their intended supplier as part of the bid submittal and must provide all related documentation to insure the proposed substitution will be in compliance with the specifications. This shall include:

- Product Literature
- Representative design calculations
- Representative drawings
- Splicing and erection procedures
- Warranty information
- Inspection and Maintenance procedures
- AISC Shop Certification
- Welder Qualifications

- Manufacturer must have at least five (5) years of experience fabricating these types of structures
- Manufacturer must have a minimum of five (5) successful bridge projects, of similar construction, each of which has been in service at least three (3) years.
- List the location, bridge size, owner, and a contact for reference for each project.

2.25 General Features of Design

2.25.1 Span

Bridge span shall be 54'-8" (straight line dimension) and shall be as measured from each end of the bridge structure. Contractor shall field verify all dimensions.

2.25.2 Width

Bridge width shall be 8'-0" and shall be as measured from the inside face of structural elements at deck level. Contractor shall field verify all dimensions.

2.26 Bridge System Type

Bridge(s) shall be designed as shown on drawings.

2.26.1 Bridge(s) shall be designed utilizing a Steel Stringer.

2.26.2 The bridge manufacturer shall determine the distance from the top of the deck to the top and bottom truss members based upon structural and/or shipping requirements.

2.26.3 The top of the top chord shall not be less than 42 inches above the deck (measured from the high point of the walking surface) on walkway structures.

2.27 Member Components shall be as shown on drawings.

2.27.1 Safety Rails

Horizontal safety rails shall be placed on the structure up to a minimum height of 3′-6″ above the deck surface. Safety rails shall be placed so as to prevent a 4″ sphere from passing through the truss. Safety rails shall be placed on the inside or outside of the structure at the bridge fabricator's option. Safety rails shall be as shown on drawings.

The safety rail system shall be designed for an infill loading of 200 pounds or 50 #/LF, applied horizontally at right angles, to a one square foot area at any point in the system.

2.27.2 Camber

The bridge shall have a vertical camber dimension at midspan equal to 100% of the full dead load deflection plus 1% of the full length of the bridge.

2.27.3 Elevation Difference

The bridge abutments shall be constructed at the same elevation on both ends of the bridge.

2.28 Engineering

Structural design of the bridge structure(s) shall be performed by or under the direct supervision of a licensed professional engineer and done in accordance with recognized engineering practices and principles. The engineer shall be licensed to practice in the State of Florida.

2.28.1 Design Loads

In considering design and fabrication issues, this structure shall be assumed to be statically loaded. No dynamic analysis shall be required nor shall fabrication issues typically considered for dynamically loaded structures be considered for this bridge.

2.28.2 Dead Load

The bridge structure design shall consider its own dead load (superstructure and original decking), as well as the additional loads listed as shown on drawings:

2.28.3 Wind Load

2.28.3.1 Horizontal Forces

The bridge shall be designed for a wind velocity as shown on drawings on the full vertical projected area of the bridge as if enclosed. The wind load shall be applied horizontally at right angles to the longitudinal axis of the structure.

The wind loading shall be considered both in the design of the lateral load bracing system and in the design of the truss vertical members, floor beams and their connections.

2.28.3.2 Overturning Forces

The effect of forces tending to overturn structures shall be calculated assuming that the wind direction is at right angles to the longitudinal axis of the structure. In addition, an upward force shall be applied at the windward quarter point of the transverse superstructure width.

2.29 Railing Loads

The top chord, truss verticals, and floor beams shall be designed for lateral wind loads (per section 2.28.3.1) and for any loads required to provide top chord stability as outlined; however, in no case shall the load be less than 50 pounds per lineal foot or a 200 pound point load, whichever produces greater stresses, applied in any direction at any point along the top chord or at the top of the safety system (42" or 54" above deck level), if higher than the top chord.

2.31.3 Load Combinations – Per FBC 2010

2.30 Design Limitations

2.30.1 Deflection

2.30.1.1 Vertical Deflection

The vertical deflection of the main trusses due to service pedestrian live load shall not exceed 1/400 of the span.

The deflection of the floor system members (floor beams and stringers) due to service pedestrian live load shall not exceed 1/360 of their respective spans.

2.30.1.2 Horizontal Deflection

The horizontal deflection of the structure due to lateral wind loads shall not exceed 1/500 of the span under an 175 MPH wind load.

2.31 Governing Design Codes / References

Structural members shall be designed in accordance with recognized engineering practices and principles as follows:

2.31.1 Structural Steel Allowable Stresses – Manual of Steel Construction – 13th Edition

2.31.2 Concrete

American Concrete Institute (ACI)

Reinforced concrete shall be designed in accordance with the "Building Code Requirements for Structural Concrete" (ACI 318).

2.32 Materials

2.32.1 Steel

2.32.1.1 Painted Steel

All Blast Cleaning shall be done in a dedicated OSHA approved indoor facility owned and operated by the bridge fabricator. Blast operations shall use Best Management Practices and exercise environmentally friendly blast media recovery systems.

Bridges which are to be painted shall be fabricated using ASTM A500 grade C cold-formed welded square and rectangular tubing (Fy = 50,000 psi) and/or high strength, low allow, atmospheric corrosion resistant ASTM A847 cold-formed welded square and rectangular tubing (Fy = 50,000 psi) and/or ASTM A588, ASTM A242, ASTM A572, ASTM A 606 (Fy = 50,000 psi) and/or ASTM A36 (Fy = 36,000 psi) plate and structural steel shapes. Splice plates, if required, shall be ASTM A588. All painted bridges shall be painted in a dedicated indoor OSHA approved paint facility that is owned and operated by the bridge fabricator.
The fabricator must hold a "Sophisticated Paint Endorsement" as set forth by AISC.

2.32.2 Decking

2.32.2.1 Bridge Deck

The bridge shall be furnished with a stay-in-place galvanized steel composite deck suitable for pouring a reinforced concrete slab. The composite deck shall be designed to carry the dead load of the wet concrete, weight of the composite decking, plus a construction load of 20 PSF uniform load or a 150 pound concentrated load on a 1'-0" wide section of deck. When edge supports are used, deflection is limited to 1/180 of the span or 3/4", whichever is less. Without edge supports, deflection shall be limited to 1/180 of the span or 3/8", whichever is less.

The deck shall be composite. The form deck material shall be supplied in accordance with ASTM A653 and galvanized to a minimum G90 coating weight.

The deck slab shall be constructed using concrete with a minimum 28-day strength (f_c') of *(5,000)* PSI.

2.33 Welding

2.33.1 Welding

Welding and weld procedure qualification tests shall conform to the provisions of ANSI/AWS D1.1 "Structural Welding Code", 1996 Edition. Filler metal shall be in accordance with the applicable AWS Filler Metal Specification (i.e. AWS A 5.28 for the GMAW Process). For exposed, bare, unpainted applications of corrosion resistant steels (i.e. ASTM A588 and A847), the filler metal shall be in accordance with AWS D1.1.

2.33.2 Welders

Welders shall be properly accredited operators, each of whom shall submit certification of satisfactorily passing AWS standard qualification tests for all positions with unlimited thickness of base metal, have a minimum of 6 months experience in welding tubular structures and have demonstrated the ability to make uniform sound welds of the type required.

2.34 Submittals

2.34.1 Submittal Drawings

Schematic drawings and diagrams shall be submitted to The City for its review after receipt of order. Submittal drawings shall be unique drawings, prepared to illustrate the specific portion of the work to be done. All relative design information such as member sizes, bridge reactions, and general notes shall be clearly specified on the drawings. Drawings shall have cross referenced details and sheet numbers. All drawings shall be signed and sealed by a Professional Engineer who is licensed in accordance with Section 2.28.

2.34.2 Structural Calculations

Structural calculations for the bridge superstructure shall be submitted by the bridge manufacturer and reviewed by the approving engineer. All calculations shall be signed and sealed by a Professional Engineer who is licensed in accordance with Section 2.28. The calculations shall include all design information necessary to determine the structural adequacy of the bridge. The calculations shall include the following:

* All AISC allowable stress checks for axial, bending and shear forces in the critical member of each truss member type (i.e. top chord, bottom chord, floor beam, vertical, etc.).
* Checks for the critical connection failure modes for each member type.
* All bolted splice connections.
* Main beam deflection checks.
* Deck design.

NOTE: The analysis and design of triangulated truss bridges shall account for moments induced in members due to joint fixity where applicable. Moments due to both truss deflection and joint eccentricity must be considered.

2.34.3 Welder certifications in compliance with AWS standard qualification tests.

2.34.4 Welding procedures in compliance with Section 2.33.2.

2.35 Fabrication

2.35.1 General Requirements

2.35.1.1 Drain Holes

When the collection of water inside a structural tube is a possibility, either during construction or during service, the tube shall be provided with a drain hole at its lowest point to let water out.

2.35.1.2 Welds

Special attention shall be given to developing sufficient weld throats on tubular members. Fillet weld details shall be in accordance with AWS D1.1, Section 3.9 (See AWS Figure 3.2). Unless determined otherwise by testing, the loss factor "Z" for heel welds shall be in accordance with AWS Table 2.8. Fillet welds which run onto the radius of a tube shall be built up to obtain the full throat thickness (See Figure 7.1). The maximum root openings of fillet welds shall not exceed 3/16" in conformance with AWS D1.1. Weld size or effective throat dimensions shall be increased in accordance with this same section when applicable (i.e. fit-up gaps> 1/16").

2.36 Finishing

2.36.1 Blast Cleaning

2.36.1.1 Painted Steel

All exposed surfaces of steel to be painted shall be blast cleaned in accordance with the appropriate section of the Steel Structures Painting Council Surface Preparation Specifications as recommended by the paint manufacturer.

2.36.2 Painting

2.36.2.1 Finishing for Painted Steel

All exposed surfaces of steel to be painted shall be blast cleaned in accordance with the appropriate section of the Steel Structures Painting Council Surface Preparation Specifications as recommended by the paint manufacturer (Bridge to be painted White and the Horizontal Safety Rails to be painted Silver).

All steel surfaces shall receive a 3 Coat Paint System (Nepcoat Qualified System)

- Primer Coat: Zinc Clad III HS Organic Zinc Rich Primer 3-5 Mils DFT
- Intermediate Coat : Macropoxy 646 Fast Cure Epoxy 5-10 Mils DFT
- Top Coat : Acrolon 218 HS Acrylic Polyurethane 3-6 Mils DFT

The topcoat paint color shall be ***Silver and White.***

A nominal quantity of touch-up paint will be provided to repair marred surfaces. Touch-up painting includes any and all painting required after the structure reaches the site, and is the responsibility of others. This painting shall include, but not be limited to, the following areas:

1. Any areas damaged due to shipping, handling, and erection of the bridge and components.
2. Bolt heads and exposed area of bolts and nuts as applicable.
3. Non-galvanized attachments or anchor bolts if not made of corrosion resistant steel.
4. If applicable, small areas (0" to 2" each side) around bolted field splices, designed as "slip critical", where one or all paint coats may be required to be left off the faying surfaces.

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2. Bolt heads and exposed area of bolts and nuts as applicable.
3. Non-galvanized attachments or anchor bolts if not made of corrosion resistant steel.
4. If applicable, small areas (0" to 2" each side) around bolted field splices, designed as "slip critical", where one or all paint coats may be required to be left off the faying surfaces.

2.36.2.3 Painter Qualifications

All painters shall be certified by the appropriate paint manufacturer for proper handling, mixing, thinning (if required) and application of the paint system in accordance with the manufacturer's instructions. The painters shall also be certified by the Department of Transportation in the state in which the bridge is manufactured.

2.37 Delivery and Erection

Delivery is made to a location nearest the site which is easily accessible to normal over-the-road tractor/trailer equipment. All trucks delivering bridge materials will need to be unloaded at the time of arrival.

The manufacturer will provide detailed, written instruction in the proper lifting procedures and splicing procedures (if required). The method and sequence of erection shall be the responsibility of the General Contractor.

The bridge manufacturer shall provide written inspection and maintenance procedures to be followed by the bridge owner.

2.38 Bearings

2.38.1 Bearing Devices

Bridge bearings shall consist of a steel setting or slide plate placed on the abutment or grout pad. The bridge bearing plate which is welded to the bridge structure shall bear on this setting plate. One end of the bridge will be fixed by fully tightening the nuts on the anchor bolts at that end. The opposite end will have finger tight only nuts to allow movement under thermal expansion or contraction.

2.39 Foundations

Unless specified otherwise, the bridge manufacturer shall determine the number, diameter, minimum grade and finish of all anchor bolts. The anchor bolts shall be designed to resist all horizontal and uplift forces to be transferred by the superstructure to the supporting foundations. Engineering design of the bridge supporting foundations (abutment, pier, bracket and/or footings), including design of anchor bolt embedment, shall be the responsibility of the foundation engineer. The contractor shall provide all materials for (including anchor bolts) and construction of the bridge supporting foundations. The contractor shall install the anchor bolts in accordance with the manufacturer's anchor bolt spacing dimensions.

Information as to bridge support reactions and anchor bolt locations will be furnished by the bridge manufacturer after receipt of order and after the bridge design is complete.

2.40 Warranty

The General Contractor and bridge Manufacturer shall warrant that it can convey good title to the goods, that they are free of liens and encumbrances and that their steel structure(s) are free of design, material and workmanship defects for a period of ten (10) years from the date of Contractor's completion.