### 098-20 Appendix A - Technical Specifications

# Construction Services for the Beverly Hills West Septic Tank Phase-Out

## TABLE OF CONTENTS

3.1	SCOPE OF WORK1
3.2	BID DRAWINGS
3.3	GEOTECHNICAL REPORT
3.4	SUE TEST HOLE REPORTS2
3.5	PERMITS AND PLANS APPROVALS
3.6	PERMIT COORDINATION MEETINGS
3.7	RESPONSIBLE BIDDERS LIST (RBL) GC-11 LOCATE LINE VERIFICATION
3.8	GRASSING/SODDING
3.9	DITCH AND SWALE RESTORATION
3.10	DUST CONTROL
3.11	TURBIDITY BARRIERS
3.12	SURVEYING
3.13	EXISTING UTILITIES
3.14	UTILITY POLE HOLDING / SUSPENDING
3.15	VALVE AND LOCATE WIRE BOX IDENTIFICATION MARKERS
3.16	WORK RESTRICTIONS
3.17	PHASING
3.18	COJ PAVEMENT MARKING REQUIREMENTS
3.19	TEMPORARY WATER MAINS
3.20	CONCRETE SLAB OVER WATER MAIN OR WATER/SEWER SERVICE MAINS6
3.21	ABANDONMENT OF EXISTING WATER MAINS
3.22	SPECIAL CONDITIONS

### 3.1 SCOPE OF WORK

This project will construct a new gravity sewer system, lift station and force main, remove and replace existing water mains and water services, remove and replace existing drainage, remove and replace existing roads, remove and replace existing concrete driveways and sidewalks, restoration will include sodding and landscape

all as part of the septic tank phase-out project to remove from service approximately 480 residential septic tanks.

### 3.2 BID DRAWINGS

Titled "Construction Drawings for Beverly Hills West Septic Tank Phase-Out" prepared by Jones Edmunds are included as part of the Bid Documents.

### 3.3 GEOTECHNICAL REPORT

Titled "Geotechnical Exploration and Evaluation Report, Beverly Hills West Septic Tank Phase-Out" CSIGeo Project No. 71-18-329-09 prepared by CSI GEO, Inc. is included as part of the Bid Documents.

### 3.4 SUE TEST HOLE REPORTS

Eighteen (18) Subsurface Utility Engineering (SUE) test holes were performed by FR Aleman as a subcontractor to RE Holland & Associates and are included as part of the Bid Documents.

### 3.5 PERMITS AND PLANS APPROVALS

JEA has obtained the following permits for the project and are included as part of the Bid Documents:

- City of Jacksonville (COJ) Plan Approval Letter
- JEA Permit for Construction of an Extension to a JEA Drinking Water Distribution System and/or JEA Wastewater Collection / Transmission System

The Contractor must obtain a SJRWMD Notice of Intent to Use Noticed General Permit for Short Term Construction Dewatering (Form 40C-22-0590-1) prior to the commencement of any dewatering. As part of the permit, a Notice to District of Dewatering Activity (Form RDS-50) must be submitted to the SJRWMD ten days before commencement of dewatering.

The Contractor is responsible for obtaining City of Jacksonville (COJ) Right-of-Way (ROW) Permit and permits for removal or relocation of protected trees prior to construction. The COJ plan approval letter along with a set of the approved plans will be made available to the Contractor to obtain the ROW and Tree Removal Permits (if necessary).

### 3.6 PERMIT COORDINATION MEETINGS

Contractor shall be responsible for being thoroughly familiar with all permit requirements prior to mobilizing and starting work associated with a permit. If a permit requires a notification or meeting with the issuing agency prior to starting work, Contractor shall be responsible for arranging said meeting and informing the JEA Representative. These meetings shall be attended by, but not limited to, the Contractor's Project Manager, Contractor's Site Superintendent, Permitting Agency Representative, JEA Project Manager and JEA Inspector.

### 3.7 RESPONSIBLE BIDDERS LIST (RBL) GC-11 LOCATE LINE VERIFICATION

The Contractor shall identify which subcontractor on JEA's RBL GC-11 Locate Line Services Verification listing will be utilized for the installation of locate wire on piping installed as part of this project. The Contractor may obtain a list of prequalified persons and/or companies by contacting the JEA Procurement Bid Section, 21 W. Church Street, Suite 103, Jacksonville, FL 32202, (904) 665-6740, or by fax (904) 665-7294, or online at JEA.com.

#### 3.8 GRASSING/SODDING

The Contractor shall replace all sod in-kind. St. Augustine type grass/sod will not be allowed in City of Jacksonville maintained Right-of-Ways.

#### 3.9 DITCH AND SWALE RESTORATION

To the extent possible, the Contractor shall constrain its operations to perform work without encroaching into or otherwise impacting existing ditches or swales.

Where this is not possible and upon JEA representative approval, the Contractor shall restore ditches and swales in accordance with Special Condition-04.

#### 3.10 DUST CONTROL

The Contractor shall utilize a water spray truck to mitigate dusty conditions when roadways are unpaved and construction areas are not sodded. No separate payment shall be made for dust control, all costs shall be merged with the associated items of work shown in the Bid Form.

### **3.11 TURBIDITY BARRIERS**

The Contractor shall take steps and make suitable provisions to minimize siltation and erosion of waterways that may result from its operation during construction.

The Contractor shall make suitable arrangements, which may require temporary construction of flumes, boxes, or some other device(s), at the Work Location for the drainage and disposal of water. The Contractor shall be responsible for protecting adjacent property to the Work Location from damage by water resulting from its operation. The Work Location shall be returned to its original condition to the satisfaction of JEA.

The Contractor is cautioned that execution or maintenance that creates turbidity and that directly or indirectly affects the water quality of any waterway into which storm water is discharged in such a manner as to exceed the limitations prescribed in the Florida Administrative Code, is a violation of the water quality standards of the State of Florida.

Turbidity levels within the project area (including within 100 ft of the construction activity) shall not exceed background conditions.

The cost for turbidity barriers and other provisions for erosion control shall be included in the unit or lump sum price set forth in the contract for the items to which the turbidity barriers and erosion control provisions are incidental and appurtenant.

#### **3.12 SURVEYING**

The Contractor shall be responsible for staking the project stationing, easements and/or right-of-way boundaries. The survey datum used for this project is NAVD 1988.

### 3.13 EXISTING UTILITIES

Known surface and subsurface utilities are shown or noted on the drawings as accurately as available information will permit. JEA does not guarantee the information shown or noted or that utilities other than those indicated (on the drawings) do not exist. It is the responsibility of the Contractor to notify each of the utilities at least (15) fifteen working days prior to construction and request that the location of their respective utility or material be located and staked in the field. Should the Contractor encounter an unidentified utility, work in the immediate area shall promptly cease and the JEA representative shall be advised. The JEA representative shall investigate the condition and propose remedial action. The Contractor is reminded of the laws of Florida requiring notification of Gas Companies, at least four (4) working days in advance of any digging operation. The Contractor shall call the Sunshine State One Call of Florida (811) to request location of all facilities owned by utilities that participate in the locate program. Failure by the Contractor to contact Sunshine One Call of Florida prior to digging shall obligate the Contractor for damages to participating utility Contractor and associated repair cost.

In order to reduce the disruption and cost of utility damages occurring in the COJ ROW and Easements, the Contractor shall prevent damages to existing utilities caused by its work through field verification of the location of existing utilities. In the case of open excavation, verification may be performed during the Contractor's work (by hand digging if necessary).

Contractor shall verify the location of existing utilities as needed to avoid contact. Existing utilities shall be exposed using detection equipment or other acceptable means. Such methods may include but shall not be limited to "soft dig" equipment and ground penetrating radar (GPR). The excavator shall be held liable for damages caused to the City's infrastructure and the existing facilities of other utility companies.

#### 3.14 UTILITY POLE HOLDING / SUSPENDING

Holding or suspending of utility poles including power poles and telephone poles shall be performed as needed, and when trenching or excavating is within a horizontal distance from the pole that is less than the depth of the trenching or excavation. Work shall include, but not limited to, furnishing of all material, labor, supervision, tools, and equipment as required to hold/suspend utility poles. Contractor shall review the project and notify the JEA Project Manager of all anticipated holds/suspends within ten (10) days following the notice to proceed. JEA will be responsible for the coordination and provision of utility pole holds/suspends. Notice, giving the exact date and time, for each hold/suspend, shall be provided by the Contractor in writing to the JEA Project Manager at least two weeks in advance of each hold/suspend. No separate pay item will be made to the Contractor for this item. Cost for this item shall be included in the cost of the associated items in the Bid.

### 3.15 VALVE AND LOCATE WIRE BOX IDENTIFICATION MARKERS

The Contractor shall furnish and install fiberglass identification markers at all gate valve and locate wire box locations as directed by the JEA Representative. All costs associated with this work shall be included in the associated line items in the Bid Document.

## 3.16 WORK RESTRICTIONS

The contractor shall confine the active work area to no more than approximately one block at a time. This does not preclude the contractor from working at multiple locations provided separate crews or functions are being performed. City of Jacksonville Traffic Engineering and the Jacksonville Fire and Rescue Communications Center (FRCC) shall be notified of Road Closures / Detours. Provide dates and times of planned closures to trafficeng@coj.net at a minimum 72-hours ahead of closure / detour.

## 3.17 PHASING

Any COJ standard pavement repair (excluding final asphalt) shall be completed within 10 calendar days or when approximately 500 LF of roadway is disturbed after completion of the utility installation. The Contractor shall submit a project phasing plan in accordance with Special Condition-08.

### 3.18 COJ PAVEMENT MARKING REQUIREMENTS

Only incidental repair or replacement of pavement markings is anticipated for this project; however, the following applies to such incidental occurrences:

- If no specific striping details and notes are noted on the drawings, the Contractor shall replace damaged/removed striping due to construction activities with striping and/or reflectors to meet current City of Jacksonville specifications and/or FDOT Standard Specification, latest edition.
- Any required temporary markings must be in place before opening lanes of traffic.
- The removal of existing pavement markings will be considered an incidental item with no additional compensation provided.
- All permanent pavement markings shall be extruded thermoplastic and meet current City of Jacksonville specifications and FDOT standard specifications, latest edition.
- Thermoplastic pavement markings are to be placed no sooner than 30 calendar days after the completion of the final pavement layer.
- A bituminous reflective pavement marker (RPM) adhesive meeting current City of Jacksonville and/or FDOT specifications, latest edition shall be used on asphalt roadways.
- The Contractor shall use 4" x4" CLASS –B reflective pavement markers (RPMs) installed to meet current City of Jacksonville specifications and/or FDOT standard specifications, latest edition.
- Reflective pavement markers that do not conflict with permanent (thermoplastic) markings shall be placed on all final asphaltic concrete surfaces immediately after the temporary permanent striping is in place.

The Contractor SHALL contact the City of Jacksonville Traffic Engineering (904-255-7550 or 904-255-7528) 48 hours PRIOR to installing any pavement markings on any City of Jacksonville roadway or streets. All costs associated with this work shall be included in the associated line items in the Bid Document.

## 3.19 TEMPORARY WATER MAINS

Based on the attached Beverly Hills Septic Tank Phase Out (Water) figure, dated 5/10/2018 and issued as part of JEA solicitation 082-17 Addendum 8, there is approximately 9,500 linear feet of existing asbestos water mains and double water mains (one on each side of the road) within the Beverly Hills West area. At the contractor's discretion, it is anticipated that the temporary water mains will be utilized in these areas to maintain water service during construction.

At all other locations within the project, the location of the proposed water main is anticipated to be a sufficient distance from the existing water main to allow the existing main to remain in service during construction, therefore the contractor shall be responsible for protecting those existing mains during construction, and the costs of all such protection shall be included in the cost for the proposed water main.

The installation, measurement and payment of Temporary Water Mains will be in accordance to Special Condition-02.

## 3.20 CONCRETE SLAB OVER WATER MAIN OR WATER/SEWER SERVICE MAINS

If providing 30 inches of cover is not physically possible due to ditch/swale inverts, conflicting pipes, structures, conduit, or dimensional constraints, then if approved by JEA the proposed pipe may be installed at reduced cover and protected by a concrete cap in the bottom of the ditch. In such cases, it is preferable to provide at least 12 inches of cover between the bottom of the concrete cap and the top of the proposed pipe, with 6 inches being the absolute minimum.

The installation, measurement and payment of 2'X 2'X6" Concrete Slabs will be in accordance to Special Condition-03.

### 3.21 ABANDONMENT OF EXISTING WATER MAINS

The existing water mains that are to be replaced by this project shall be abandoned as delineated on the plans, utilizing the methods noted on the bid form, with the exception that the costs for all fittings and other work required for the abandonment shall be included in the cost of the proposed water main.

### 3.22 SPECIAL CONDITIONS

The following Special Conditions are included:

# Special Condition No. 01-RELOCATE EXISTING WATER METERS, METER BOXES AND INSTALL CUSTOMER WATER MAIN PIPING AND FITTING

This special condition is to relocate existing water meters, meter boxes and install customer water main piping and fittings. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

Coordinate with customers for locating the existing water service meter, meter box and water main piping, coordinate with customers to delineate the location where the water service meter, meter box and customer water main piping will be located. Connect new customer water main piping to relocated water service meter and meter box.

Provide the following items including but not limited to trenching, dewatering, trench protection, sheeting and shoring, erosion control, customer water main piping and fittings (diameter to match water service line diameter), restoration of sod and landscaping and all other requirements for a complete and operable system.

Measurement will be the actual quantity of each unit of relocate existing water meter, meter box and install customer water main piping and fittings installed and accepted.

Payment for this item will be on a per-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

### Special Condition No. 02- TEMPORARY WATER MAINS

This special condition is to provide temporary water mains. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

Construct, pressure test, and disinfect temporary 2-inch water main and transfer water service lines to temporary 2-inch water main as required to maintain customer water service.

Furnish and install temporary water mains at-grade and required ramping and/or other special measures to maintain vehicular access at driveway crossings.

The contractor shall coordinate with JEA for the disinfection and clearance of the temporary water main in accordance to JEA and Florida Department of Environmental Protection (FDEP) specifications and requirements.

The temporary line's horizontal and vertical locations shall be selected by the Contractor as required to accommodate the installation of the new water main and/or other facilities as necessary.

After the new water main is constructed and cleared for service, the Contractor shall transfer water service lines from the temporary water main to the new water main.

The Contractor shall prepare and submit for approval by JEA a phasing plan (either as part of Special Condition-08 or separate) for the water main replacement indicating how the contractor plans to maintain customer water service during construction. The Contractor shall locate all existing water service lines as part of the phasing plan. There is no separate payment for the water main phasing plan and all costs associated with this work shall be included in the associated line items in the Bid Document.

The Contractor shall complete all water main construction, testing, disinfection and obtain passing bacteriological samples for each section before beginning construction on the next section.

The Contractor shall coordinate with JEA for temporary service outages including, but not limited to:

Issuing notices for service outages

Boil water notices

Others as may be required

Measurement will be the actual quantity of each linear-foot unit of Temporary Water Mains installed and accepted.

Payment for this item will be on a per linear-foot-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

# Special Condition No. 03-2' X 2' X 6" CONCRETE SLAB

This special condition is to install a 2' x 2' x 6" Concrete Slab. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

- Coordinate with JEA to identify the areas where the 2' x 2' x 6" concrete slab will be required for protection of water mains, water service lines and sewer lateral piping.
- Provide the following items including but not limited to verification of the depth of soil cover at water mains, water service lines and sewer lateral piping, suitable backfill, compaction, 2' x 2' x 6" concrete slab, trenching, dewatering, trench protection, sheeting and shoring, erosion control, grading to match top elevations of 2' x 2' x 6" concrete slab and all other requirements for a complete and operable system.

Measurement will be the actual quantity of each unit of a 2' x 2' x 6" Concrete Slab installed and accepted.

Payment for this item will be on a per-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

# Special Condition No. 04- SWALE RESTORATION

This special condition is for Swale Restoration. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

- Coordinate with JEA to identify and document the existing ditch and swales and/or existing and proposed culvert elevations.
- Provide the following items including but not limited to verification of existing swale elevations and/or existing and proposed culvert elevations, the depth of soil cover at water mains, water service lines and sewer lateral piping, grading to maintain flowlines of existing swales and/or existing and proposed culvert elevations, dewatering, trench protection, erosion control and all other requirements for a complete and operable system.

Measurement will be the actual quantity of each linear-foot unit of Swale Restoration installed and accepted.

Payment for this item will be on a per linear-foot-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

# Special Condition No. 05- RIGHT OF WAY LANDSCAPE RESTORATION

This special condition is for Right of Way Landscape Restoration. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

- Prior to initiation of construction coordinate with JEA to identify and document existing right of way landscape features to remain and be protected and those that will require restoration.
- Provide the following items including but not limited to removal, storage and protection of landscaping features to be replaced to original locations and conditions after completion of construction, furnish and install replacement landscape features to JEA approved locations and conditions, replacement landscape features shall be of equal appearance and value as existing landscape features, and all other requirements for a complete and operable system.

Measurement will be based upon a JEA approved pro-rata amount of the lump-sum amount for Right of Way Landscape Restoration installed and accepted.

Payment for this item will be on a lump-sum basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

## Condition No. 06- SEWER HOOK-UP WITH SEPTIC TANK ABANDONMENT

This special condition is for Sewer Hook-up with Septic Tank Abandonment. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

- The septic tank properly abandoned after the parcel is connected to the sewer collection system.
- The appropriate diameter sewer yard piping service line extended from the R/W line to the dwelling unit and/or commercial structure cleanout and/or designated point on the on-site sewage disposal pipe installed in accordance with the Florida Building Code to allow connection of all existing plumbing lines (i.e., blackwater, greywater, etc.) that extend from the dwelling unit and/or commercial structure.
- The dwelling unit and/or commercial structure disconnected from the existing on-site sewage disposal system and connected to the new central sewer collection system.
- All excavation and backfill.
- Acquiring septic tank abandonment permit from health department in accordance with Chapter 64E-6.011, F.A.C. and City of Jacksonville Building Permit.
- Locating, pumping out and properly disposing of the contents of the septic tank.
- Punching/drilling a hole in bottom of septic tank and filling tank void completely with clean sand.
- Restoring the property following completion of work (including but not limited to sodding and restoration to any damaged signage, lighting, sidewalks, fencing, landscaping, driveways, roadway, and/or irrigation systems).
- Removal/replacement, and/or protecting/preserving trees, palms, shrubs, irrigation systems, landscaping, signs etc. along the route of the proposed work including hand digging, removal and storage of such and subsequent replacement to the fullest extent possible of the pre-existing condition.
- Locating and avoiding existing utilities.
- Coordinating with the property owner and JEA related to the proposed sewer yard piping service line routing.

- Identifying all plumbing extensions to existing on-site sewage disposal system(s) including but not limited to 'blackwater' and/or 'greywater' discharge pipeline(s).
- Installing all sewer yard piping at 1.0% minimum slope with necessary fittings/bends and/or cleanouts required by the Florida Building Code to collect all existing plumbing extensions.
- Connecting all plumbing with necessary fittings, couplings, and/or cleanouts (i.e., 'blackwater' and/or 'greywater' discharge pipeline(s)) to new sewer lateral at right of way line as required by the Florida Building Code.
- Certifying completion of septic-tank abandonment activities by a licensed Contractor in accordance with Chapter 64E-6, Florida Administrative Code.

Measurement will be the actual quantity of each unit of a Sewer Hook-up with Septic Tank Abandonment installed and accepted.

Payment for this item will be on a per-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

# Special Condition No. 07- GRINDER PUMP STATION-COMPLETE INSTALLATION TO SEWER LATERAL CONNECTION

This special condition is for Grinder Pump Station-Complete Installation to Sewer Lateral Connection. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

Coordinate with JEA and homeowner to identify the location and layout for the low-pressure grinder pump station, route of 1.25-inch DR-11 HDPE force main and route for 4-inch DR-26 PVC sewer yard piping.

Provide the following items including but not limited to Low Pressure connection to sewer lateral at right of way line, 4-inch PVC cleanout with 1.25-inch adapter, 6-inch x 4-inch fernco adapter, horizontal directional drilling of 1.25-inch DR-11 HDPE force main, 1.25-inch DR-11 HDPE piping and fittings, connect 1.25-inch DR-11 HDPE force main to Low Pressure Grinder Pump Station, Low Pressure Grinder Pump Station shall be E-ONE, model WH101-74 (or approved equal), electrical connection to homeower's electrical panel, electrical wiring, conduit, fittings, controls, enclosures, excavation, backfill, compaction, restoration, testing and certifications for Low Pressure Grinder Pump Station and force main, furnish and install 4-inch DR-26 PVC sewer yard piping in accordance with Special Condition No. 06- Sewer Hook-up with Septic Tank Abandonment, and all other requirements for a complete and operable system.

Measurement will be the actual quantity of each unit of a Grinder Pump Station -Complete Installation to Sewer Lateral Connection installed and accepted.

Payment for this item will be on a per-unit basis and shall include furnishing all material, labor, tools, equipment, and all incidental and related work to provide the item complete and in service.

# Special Condition No. 08- CONSTRUCTION PHASING PLAN

This special condition is for the Contractor to provide a Construction Phasing Plan. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

The Contractor will provide a plan which will sub-divide the overall project site into reasonable sized sub-areas where the proposed improvements will be constructed, cleared for use and accepted by JEA before proceeding to the next sub-area. JEA anticipates a total of 3-4 sub-areas for the entire project, with the area around the lift station to be completed first to provide service to the subsequent areas upon completion. This Construction Phasing Plan will be submitted to JEA for review and approval prior to initiation of construction activities.

There is no separate payment for this item. Payment for this item is to be included in the General Conditions.

#### Special Condition No. 09-TREE MITIGATION-BID ALLOWANCE

This special condition is for the Contractor to provide Tree Mitigation services for the Construction Project. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

The Contractor shall make every reasonable effort to save any tree of four-inch diameter or larger, including minor adjustments to the pipe routing. Changes in pipe routing must be approved by the JEA. In the event trees cannot be avoided and require removal the following steps will be utilized.

Tree Mitigation: The Drawings do not indicate specific trees to be removed and replaced. In accordance with City of Jacksonville Article 25 of the Charter, Section 656 Part 12 of the City of Jacksonville Municipal Code and the COJ Tree Removal Permit Application, the Contractor will identify the protected and exempt trees that will need to be removed for the construction both inside the public right of way and outside of the public right of way.

The Contractor will coordinate with JEA representatives to tabulate the amount of protected and exempt trees which will require removal. Based on the number of trees to be removed, the Contractor and JEA representatives will submit the amount of payment into the City of Jacksonville's Tree Mitigation Trust Fund to be paid from the bid allowance.

No separate pay item is provided for Contractor coordination for tree removal. The cost for Contractor coordination shall be included in the cost of the associated items in the Bid.

No separate pay item is provided for tree removal. The cost for tree removal shall be included in the cost of the associated items in the Bid.

JEA has provided a lump sum bid allowance for this item.

### Special Condition No. 10- TREE PROTECTION-BID ALLOWANCE

This special condition is for the Contractor to provide Tree Protection services for the Construction Project. This item shall include but not be limited to furnishing and installing the materials and services noted in this special condition and in accordance with the contract documents providing the following:

Tree Protection: Contractor shall make every reasonable effort to protect trees in the area of his operations. Tree protection will be in accordance with City of Jacksonville Article 25 of the Charter and Section 656 Part 12 of the City of Jacksonville Municipal Code. Trees damaged or destroyed as a result of Contractor's operations shall be replaced with plants of identical species and of similar size, unless directed otherwise by JEA. Contractor shall make every possible effort to save any tree of four-inch diameter or larger, including minor adjustment to the pipe routing. Changes in pipe routing must be approved by the JEA. Any tree which is not designated for removal, but which will significantly interfere with construction shall be trimmed by a qualified tree surgeon. Contractor shall minimize tree removal and tree trimming operations to as great an extent as possible. Cost for tree protection shall be submitted to JEA representatives for approval to be paid from the bid allowance.

JEA has provided a lump sum bid allowance for this item.