A - TECHNICAL SPECIFICATIONS

086-20 Construction Services for Downtown – Extend Chilled Water System to New JEA Office & Ed Ball Building

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SCOPE OF WORK

JEA is soliciting Bids from construction contractors (hereinafter referred to as "Company or Contractor") for construction services for **Downtown – Extend Chilled Water System to New JEA Office & Ed Ball Building** Project (the "Work" or "Services".)

A. This request is to solicit bids for construction services of approx. 450 LF of insulated D.I. 16-inch (900 LF of pipe, total, for the supply and return mains) by open cut along Duval St and Julia St, approx.. 300 LF of insulated D.I. 8-inch (600 LF of pipe, total, for the supply and return mains) by open cut along Monroe St to the New JEA HQ building, approx.. 250 LF of insulated D.I. 12-inch (500 LF of pipe, total, for the supply and return mains) by open cut along Monroe St to the Ed Ball Building

B. The Company shall strictly follow JEA's Water and Wastewater Standards Manual for water pipe installation, and JEA Fiber Optics Standards issued on 2020 or latest version, during the construction of the improvements. Contractor shall use a Request for Information in the event of a discrepancy.

C. The following is a link to the JEA Water and Wastewater Standards: https://www.jea.com/Engineering_and_Construction/Water_and_Wastewater_Standards/

D. The Company shall follow and comply with COJ Land Development Code and JEA Water and Wastewater Standards and JEA Underground Electric Distribution Standards Manual

E. The duration of work from the notice to proceed will be one hundred and seventy two (172) days until substantial completion and two hundred and two (202) days until final completion.

1. BID DRAWINGS

TITLED "Construction Drawings for **Downtown – Extend Chilled Water System to New JEA Office & Ed Ball Building**" prepared by Mott MacDonald are attached.

2. SUPPORT DOCUMENTATION

086-20 Appendix A - Technical Specifications
086-20 Appendix A - Geotechnical Report
086-20 Appendix A - Drawings
086-20 Appendix A - COJ Permit
086-20 Appendix A - Ground Water Sampling Report
086-20 Appendix A - VVH Report
086-20 Appendix A - Supplemental Section 02999 - Miscellaneous Work
086-20 Appendix A - Supplemental Section 15181 - Chilled Water Piping, Fitting, Insulation, and Installation

3. ROW PERMIT

The Company shall obtain a ROW permit from COJ before starting construction activities

4. PERMITS

JEA has obtained the following permits for the project:

- COJ CDN

5. SURVEYING

In addition to the Surveying requirements of this solicitation, 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 N.A.V.D 1988.

6. CLEAR AND GRUB

Payment for clearing and grubbing shall not be paid for separately, but shall be included in the cost of the associated item of work. Payment will be compensation in full for all clearing and grubbing required for the roadway right-of-way and for any other clearing and grubbing indicated or required for the construction of the entire project area including area of excavated trenches and where trenchless operations are required, including all necessary hauling, furnishing equipment, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain and the landscaping work of trimming, etc. as required.

7. EARTHWORK

It shall be the sole responsibility of the Company to evaluate the geotechnical findings and recommendations along with the construction drawings to determine the quantity of soil to be managed or removed/disposed and replaced in order to meet the requirements of the Contract Documents. No separate payment shall be made for stockpiling, managing, mixing, and/or removal, disposal, importation and placement of A-3 sand required for backfill and/or over-excavation (bedding) material for the pipeline(s) and structures, but all costs shall be merged with the associated item of work shown in the Bid Form. Excess and/or unsuitable material shall become the property of the Company and shall be disposed of outside of the right-of-way.

8. LANDSCAPING

The Company shall be responsible for protection and preservation of all 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. All costs associated with such shall not be paid for separately but shall be included in the cost of the associated item of work.

9. RESTORATION

The drawings show limits for all restoration items based on the existing design location of the proposed main and are provided for the Contractor’s convenience. If the Contractor is forced to move the main into pavement or sidewalk due to a direct conflict with a utility or tree, the JEA Representative must be notified

immediately and authorize such work.

Damage to asphalt, sidewalks, or curb and gutter (not indicated for removal and replacement) will be replaced at the Contractor's expense unless otherwise authorized by JEA.

10. TRENCH EXCAVATION

Topsoil shall be stripped from the top of the trench and placed to the side for reuse during the final layer of backfill to facilitate productive growth of lawns, crops, and other vegetation, minimizing sod damage in all areas. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the ENGINEER, trenches shall in no case be excavated or permitted to become wider (as measured at the top of the pipe) than 2 feet plus the nominal diameter of the pipe. The desired width shall be the nominal diameter of the pipe plus 16 inches. The minimum allowable trench width shall be the nominal diameter of the pipe plus 6 inches. Trenching equipment that cannot maintain these minimum widths will not be allowed for use on the project.

Trench excavation shall proceed far enough ahead of pipe laying to reveal any obstructions that might necessitate changing the line or grade of the pipeline. The trench shall be reasonably straight and uniform in grade. Trenches shall be kept free of water during the construction of the pipeline and removal of water shall be at the Contractor's expense. Trench excavation shall proceed in a continuous manner from the beginning of the pipeline to the end.

Unless specifically authorized by the ENGINEER, no skipping by obstacles such as rock, road crossings, existing utilities, etc. shall be permitted. If skips are authorized by the ENGINEER and the CONTRACTOR does not close the resulting gaps in the pipeline in a timely manner, the ENGINEER may require the CONTRACTOR to discontinue all other operations until the gaps are closed.

Unless specifically directed otherwise by the ENGINEER, not more than 500 feet of trench shall be opened ahead of the pipe laying, and not more than 500 feet of open ditch shall be left behind the pipe laying. All barricades, lanterns, watchmen, and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations, and other obstructions, shall be provided by and at the expense of the CONTRACTOR.

At the close of each working day all trenches that have been excavated shall be refilled unless exceptions are granted by the ENGINEER. All public or private drives shall be promptly backfilled or bridged at the direction of the ENGINEER.

All excavation shall be "unclassified" and therefore the cost of all excavation should be merged into the construction of the pipeline

11. WATER SERVICE:

If any, are to be bored unless indicated otherwise on drawings, old water main might need to be re-tapped if material is metal

12. COORDINATION OF CONSTRUCTION WITH EXISTING UTILITIES

The Company shall establish liaison with and coordinate work with JEA, BellSouth / AT&T, TECO/Peoples Gas and Comcast to prevent interference with overhead and buried electrical, telephone, and television cables. BellSouth, TECO/Peoples Gas, and Comcast may need time to relocate their facilities.

The Company shall at all times conduct its operation so as to interfere as little as possible with the existing utilities. The Company shall develop a program in cooperation with the JEA and interested representatives of Utilities and City agencies, which shall provide for the construction of, and putting into service, the new work in the most orderly manner possible. This program shall be adhered to, except as deviations therefrom are expressly permitted. All work of connecting with, cutting into, and reconstructing existing pipes and structures shall be planned so as not to interfere with the operation of the existing utility.

13. COMPANY'S STAGING, STORAGE AND STOCKPILE AREA

No additional staging, storage, and stockpile will be made available by the JEA along the project site. The Company is not allowed to store any equipment or materials outside the right-of-way and JEA's designated easement limits. The location will be agreed to upon and discussed at the pre-construction meeting.

14. LOCATION AND PROTECTION OF EXISTING PROPERTY - ON NON-RIGHT OF WAY ISSUES

When working in areas outside the normal City, County and/or State right-of-ways, the Company shall be responsible for location and protection of all property shown or not shown on the drawings, including maintenance and repair of any damaged utility service. Utility locates shall be provided in accordance with local and state requirements. If the drawings indicate abandonment or removal of property or utility service by the Company, the Company shall proceed after it has determined that all services have been de-energized and/or decommissioned. The Company shall coordinate with the owner of the property (Owner) and the appropriate utility company to determine status of the existing utility service prior to starting work in the area. All property and utility services that are to remain shall be appropriately protected and maintenance during the construction activity. Should there be additional cost to the Company for protection or maintenance of property or utility services not shown on the drawings, the Company shall justify and document this cost in writing to the JEA Contract Administrator. A Supplemental Work Authorization (SWA) will be negotiated and approved prior to starting work. Should property or utility services be damaged by the Company, the Company shall notify the JEA Inspector, the Owner and the utility company immediately. Should the damage interrupt service, the Company shall be responsible for restoring service as soon as possible. However, the Company shall not make repairs without approval of the Owner or the utility company and should the Owner or a particular licensed Company be required to make the repairs the Company shall be responsible for coordinating this effort as well as any cost associated with the repair. JEA reserves the right to deduct any unsettled claim amount from monthly progress payments until such time as the claim is satisfactorily resolved. This paragraph is intended to stress the importance of customer relations and the maintenance of all services to the customer.

15. PAVEMENT REPAIR (ONLY FOR OPEN CUT OPTION)

Any COJ standard pavement repair shall be completed within 10 calendar days or when 500LF of roadway is disturbed after completion of the utility installation. All mobilization/demobilization required for

rework/regrading of lime rock base, dust control, including asphalt paving shall not be paid for separately but shall be included in the cost of the associated items in the Bid Form.

16. ROADWAY RECONSTRUCTION

The Company shall perform survey of existing roadway horizontal alignment and vertical grade of the existing limits of construction prior starting the work. No separate payment shall be made, but all costs shall be included in the lump sum cost of the General Conditions line items. Intent is to remove and replace impacted roadway, curb & gutter, and sidewalk portions to existing alignment, width, and grade to match existing elevations after open cut construction is performed.

17. TEMPORARY ROADWAYS

If the Company's operations render any street or private way potentially unsafe, the Company shall make such repairs or provide such temporary ways and guards necessary for the protection and safety of persons on the Work Site and the public, and for the orderly maintenance of traffic.

The Company shall always provide and maintain a hard-surfaced roadway for traffic. Where temporary detours of lanes are required, they shall be asphalt-paved by the Company. The Company may construct paving section(s) appropriate to support traffic, provided the surface is smooth and the profile reasonable, and as a minimum, consists of 1 inch of bituminous structural course over a 6-inch limerock base that was inspected and approved by the JEA Engineer. Should any temporary pavement fail, the Company shall be responsible for repairing it, at its own cost, before close of Work on the day notification is given. Should the Company be unable to make such repair by close of Work, the Company shall notify the JEA Engineer and provide an estimated time when repairs can be made. No repair timeframes shall exceed 48 hours. Any damages, either direct or indirect, resulting from such temporary pavement failures shall be the sole liability of the Company.

When applicable, all limerock base material used for temporary pavement and constructed in proposed grassed areas shall be completely removed and disposed of by the Company prior to final restorative grassing operations. The area shall be backfilled with material stockpiled on the Work Location that is conducive to growth of the plant material. All costs associated with this work shall be included in the associated line item in the Bid Form Workbook.

18. PAVEMENT REMOVAL (OPEN CUT ONLY)

Saw cuts must be used on all asphalt removal.

19. COJ PAVEMENT MARKING REQUIREMENTS (OPEN CUT ONLY)

The Company shall comply with COJ pavement marking requirements.

20. DUST CONTROL

The Company shall utilize a water spray truck to mitigate dusty conditions when roadways are unpaved and construction areas are not sodded.

21. NOISE ORDINANCE

The company should adhere to the City's current noise ordinance

22. PERMIT COORDINATION MEETING

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

23. CONNECTIONS TO EXISTING UTILITIES

Contractor shall verify size and type of pipe at each connection prior to ordering materials for connections. Price for connections shall be a lump sum price to include the installation of restraints/sleeves as shown in the plans or as approved by JEA.

24. MAINTENANCE OF TRAFFIC

The Company shall adhere to the maintenance of traffic plans, including construction zone signing, pavement marking, barricades, barriers, etc. as shown on the project drawings. The Company shall provide written approval from COJ to any proposed alternate MOT plan to JEA prior to starting work in area of alternate MOT plan.

Temporary closure of business entrances must be approved and coordinated with JEA. The affected business shall be given at least forty-eight (48) hours' notice prior to the closure. Any deviation from the contract documents or the requirements of the FDOT Roadway and Traffic Design Standards, such as construction zone signing, barricades, warning devices, temporary striping, flagmen, etc., must be approved by the JEA. The JEA shall be notified and approval shall be obtained forty-eight (48) hours in advance of such deviation.

Payment for all work required for maintenance of traffic, not provided for as a specific pay item, including, but not limited to, Temporary Pavement, Flagmen, off-duty police officers, lighting, etc., shall NOT be paid for separately but included in the associated line item.

25. UTILITY POLE HOLDING / SUSPENDING

Holding or suspending of utility poles including power poles and telephone poles 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. The Company must coordinate any utility pole holding/suspending with JEA. The Company shall schedule a meeting with the JEA Electrical representative in the field to discuss the anticipated work. A minimum of two (2) days' notice for the field meeting is required. The actual pole hold work will be scheduled at the field meeting.

No separate pay item will be made for this work and all costs shall be included to the associated work item unit cost as indicated in the Bid Form.

The work must be performed by licensed electrical contractor in accordance with JEA's safety requirements for electrical contractors. The electrical contractor must be listed on JEA's Responsible bidders list under category EG2 DISTRIBUTION CONSTRUCTION- UP TO 45 KV (ENERGIZED & DE-ENERGIZED)

26. DEWATERING

If the Company encounters groundwater, the Company shall be responsible for utilizing a dewatering system(s) to remove water from the excavations. Prior to beginning any dewatering activities, the Company shall comply with all requirements listed in Florida Department of Environmental Protection (FDEP) Dewatering Regulations.

Additionally, prior to any dewatering, the Company shall apply for a St. Johns River Water Management District (SJRWMD) Generic Permit for Short Term Dewatering, and comply with all SJRWMD requirements.

If the above requirements are not followed, the Company shall be held liable for any fines and/or violations incurred by JEA.

No additional payment shall be made for dewatering unless approved by a Supplemental Work Authorization.

27. DRAINAGE ALONG RIGHT OF WAY AND UTILITY EASEMENT

The Company shall so conduct its operations and maintain the Work in such condition that adequate drainage shall be in effect at all times. The Company shall not obstruct existing gutters, ditches and other runoff facilities.

28. RESPONSIBLE BIDDERS LIST (RBL) GC-11 LOCATE LINE VERIFICATION

Upon request by JEA, Company shall identify which subcontractor on JEA's RBL GC-11 Locate Line Verification listing will be utilized for the installation of locate wire on PVC piping. The Company may obtain a list of prequalified persons and/or companies by contacting the JEA Procurement Bid Office, 21 W. Church Street, Customer Center 1st Floor – Room 002, Jacksonville, FL 32202, (904) 665-6740, or by fax (904) 665-7294, or online at JEA.com.

29. TRAFFIC SIGNAGE

Costs incurred by the Company to provide new signage and pavement markers, or remove and replace existing signage as necessary to accomplish the work shall not be paid for separately but shall be merged with the cost of the associated item of work. Damaged signage shall be replaced with new signage. All signage and pavement markers shall be in accordance with the drawings, FDOT requirements and City Traffic Engineer's requirements.

30. COJ PAVEMENT MARKING REQUIREMENTS

Pavement markings should be placed as shown on the plans and detail sheets. If no specific striping comments are noted on the drawings, the Contractor shall replace damaged/removed striping due to construction activities with like striping and/or reflectors.

a. Any required temporary markings must be in place before opening lanes of traffic. Pay items for temporary pavement markings are to be included in the tabulation of quantities.
b. The removal of existing pavement markings will be considered an incidental item with no additional compensation provided.
c. All permanent pavement markings shall be extruded thermoplastic and meet current COJ/FDOT standard specifications
d. Thermoplastic pavement markings are to be placed no sooner than thirty (30) calendar days after the completion of the final pavement layer.
e. A bituminous reflective pavement marker (RPM) adhesive meeting current COJ and/or FDOT specifications shall be used on asphalt roadways.
f. The contractor shall use 4" x4" CLASS –B reflective pavement markers (RPMs) installed to meet current COJ/FDOT standard specifications. Acceptable examples are: Ennis Paint co., Model 911; Ray-O-Lite, Model AA-ARCII-FH; Apex, 921AR.
g. Reflective pavement markers that do not conflict with permanent (thermoplastic) markings shall be placed on all final asphaltic concrete surfaces immediately after the temporary striping is in place.
h. The contractor SHALL contact the FDOT Inspector forty-eight (48) hours PRIOR to installing any pavement markings on any FDOT roadway or street or COJ Engineering Services Department (904) 530-6225.

31. TEMPORARY MAILBOX REMOVAL/RELOCATION

Contractor shall remove and temporarily relocate any mailboxes that are in conflict with construction for that working day. All mailboxes removed/relocated shall be reinstalled by the end of that workday. It is the contractor's responsibility to protect all mailboxes from damage during construction. Damage to any mailboxes during construction will be replaced at the Contractor's expense. All costs associated with temporary relocating mailboxes shall not be paid for separately but shall be incorporated in the associated line item work.

32. CRITICAL PATH METHOD (CPM) SCHEDULING, RESOURCE AND COST LOADING

Please see section 2.13.2 of the solicitation for CPM requirements.

33. GENERAL CONDITIONS/SPECIAL CONDITIONS

The line item shown on the Bid Form titled "General/Special Conditions Lump Sum Price" shall be used for general and special expenses which do not appear as separate line items on the Bid Form, including, but not limited to, costs and expenses related to the following:

- The execution and recording of the Payment and Performance Bonds
- Safety requirements
- Quality Control
- Preparation of daily reports

- Maintenance of traffic
- Attendance of meetings, project scheduling
- Testing (if not included elsewhere)

Except as provided below for expenses related to Bonds and Surveying, JEA's payment for the General/Special Conditions line item shall be based upon the percentage of Work completed.

Bonds - Company will be permitted to invoice JEA, in its first payment application, for the costs associated with the execution and recording of the Payment and Performance Bonds. The amount paid by JEA for the Payment and Performance Bonds will be deducted from the General/Special Conditions line item total.

Surveying – Prior to construction, the Company will be permitted to invoice JEA for costs associated with the survey of the existing roadway horizontal alignment. The amount paid by JEA for these costs will be deducted from the General/Special Conditions line item total.

SWA - In the event that JEA authorizes changes to the Work under a Supplemental Work Authorization (SWA), the amount of the Bid Form line item for SWA Allowance will not be increased unless the total value of all SWA Work exceeds the original SWA Allowance provided on the Bid Form.

34. PERMITS AND PLAN APPROVALS

The Contractor must obtain a 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 (10) ten days before commencement of dewatering.

Contractor shall comply with all requirements and conditions of the approved permits for Construction of the pipeline.

Contractor is responsible for obtaining COJ Right-of-Way (ROW) Permit prior to construction with COJ

35. PROJECT OUTREACH MEETINGS

The Company's project manager, superintendent and customer satisfaction representative for this Work shall be required to attend JEA project outreach meetings including potential "Town Meetings" scheduled through JEA Project Outreach or COJ.

36. PROJECT SIGNS

Contractor to remove project signs after construction completion

37. CONTRACTOR'S EQUIPMENT

The Contractor is responsible for protecting sidewalks, curb, gutter, and asphalt by placing plywood or other applicable procedures for the machinery to operate.

All heavy equipment (excavator, front-end loaders, directional drilling rigs, etc.) shall be sized for a congested urban corridor setting. Excavators shall be rubber tired unless approved by JEA representative.

The bucket on the excavator shall be no greater than 30 inches wide to minimize the risk of disturbing surrounding utilities, sidewalks, curb and gutters, etc…

38. AS BUILTS

Upon submission of each payment application, Company shall furnish to the JEA Engineer a photocopy "redline" set of drawings identifying those field changes made to the Work to date, along with a photocopy set of the associated field notes. Revisions and recording of information on the photocopy set of drawings shall be done in scale in red ink clearly and accurately identifying those changes in the Work by a competent drafter. All "As-Built" information shall be recorded and kept current during the progress of the Work. The JEA Engineer may review and comment on the drawings which shall be incorporated into the next month's As-Built submittal. Failure to incorporate changes the following month may result in denial of pay application request. These requirements only supplement the requirements of the General Conditions.

When the payment of application submitted includes associated items of final restoration for a project, or a portion of the project thereof, then the associated final as-builts shall be submitted as a "redline" marked photocopy set of drawings for that pay period. The Project Engineer may review and comment on the drawings with the view toward final As-Built submittal. The subsequent month submittal made with the payment application shall incorporate a photocopy set of CADD drawing final as-builts. The JEA Engineer shall review and comment on the photocopy set of CADD drawings which shall be incorporated into the final As-Built submittal. These requirements only supplement the requirements of the General Conditions.

As-Builts shall be provided to JEA once construction substantially completed. Completion of the project will only be accepted once As-Builts have been accepted by JEA GIS requirements.

Limits of flowable fill should be indicated in final as-builts

39. COMPANY SAFETY MEETINGS

Copy of weekly companies' safety meeting record to be provided to JEA every week

40. FIELD VERIFY EXISTING DUAL 36'' CI MAINS FOR TIE IN

Refer to Appendix A: Supplemental Technical Specifications prepared my Mott MacDonald Section for this section. Payment for the field verification will be made on a time and material basis against the allowance indicated on the bid form. The Company shall provide backup documentation with the invoice to justify amount being invoiced.

41. DEWATERING PRE-TREATMENT AND ENVIRONMENTAL PERMITTING ALLOWANCE

Any dewatered groundwater pretreatment that may be required if groundwater samples identify a contaminant that must be removed before discharge to the storm water or sewer system. Costs for the dewatering system shall be included in the lump sum bid and shall not be included in the pretreatment allowance

42. 2 INCH CORPORATION STOP ASSEMBLY

To assist in pigging/swabbing and cleaning the mains prior to testing. Also, to ensure air evacuation during initial filling and testing of the pressure mains it may be necessary to furnish and install 2" bleed off ports at locations in the pipelines where air pockets would be expected to accumulate. The 2" bleed

off assembly shall be removed up to the corporation stop once cleaning and testing is complete. The 2" bleed off assembly is incidental to the work, No separate payment for a 2" bleed off assembly will be made but all costs shall be merged with the associated item of work including furnishing and installing, complete, all necessary double band service saddle (2" outlet); 2" corp. stop/gate valve; plug; all required removal of grassing; excavation; de-watering; native soil backfill; furnishing and placing steel decking over excavations; all sheeting, shoring, and bracing required to maintain excavations in a safe condition; flushing, protecting existing structures, utilities and property both public and private; placing and removing all traffic signs and barriers and maintaining traffic; cleaning up the site; furnishing all material, labor, tools and equipment; and all incidental and related work to complete the item.

43. SILT FENCE ASSEMBLY

The Company shall furnish and install silt barrier and/or storm gutter protection in accordance with the details shown on the Erosion Control Drawings, and as required by the SJRWMD. Measurement shall be by horizontal projection of silt fence parallel to the pipeline. No separate payment shall be made for silt fence assembly but all costs shall be merged with the associated item work.

44. REMOVAL AND REPLACEMENT OF SIDEWALKS/ CROSS WALKS CONSTRUCTED PAVERS

The removal and replacement of sidewalks/crosswalks with exposed pavers shall be restored with matching pavers to a condition as good as or better than that which existed prior to removal. Pavers shall be carefully removed and stored so as to minimize damage to the pavers. When the sidewalk/crosswalk is replaced, the original pavers shall be used and installed in accordance with accepted industry standards for sidewalks/ crosswalk constructed with pavers. Pavers damaged beyond reuse shall be replaced with new pavers that match the original pavers.

45. PARKING METERS

Add the following to Section 801, Item 3.1: "The Contractor shall coordinate with Mr. Mark Schoefield, City of Jacksonville, Parking Meter Maintenance Supervisor, telephone 630-0881 for removal of the parking meter heads, as indicated in the Public Parking Ordinance 802.103 (*Installation and removal of Parking meters and Posts*). The lump sum costs included in the bid form for parking meter removal shall include all costs associated with coordination with City, removal of meter posts, and subsequent installation of meter post in conjunction with permanent sidewalk replacement. The City will exempt JEA; or JEA will pay the City for all meter revenue loss charges via Supplemental Work Authorization the City may assess. A parking meter allowance is included in the bid form to cover the cost of meter revenue loss. Company shall submit with corresponding pay application any associated fee payments and supporting documentation. Company agrees to invoice JEA for its cost with no markup.

46. FIBER OPTICS

(Shall comply with all the requirements of "Underground Fiber Optics" Section IX of the latest edition of the JEA Underground Electric Distribution Standards)

Contractor shall furnish and install a fiber optic conduit system, complete with conduit, innerduct, locate wire, marking tape, and ready for fiber optic cable installation by JEA. The work shall include all connections, reconnections, temporary service and all other provisions in regard to the existing operation and modification as is required to perform the new work. Only those materials included in the JEA Standard shall be installed.

1. Installation requirements

Where possible, the contractor shall limit the total number of 90 degree bends in a conduit segment to no more than four (4) to facilitate cable pulling. Cable bend radius shall adhere to manufacturer's requirements and written instruction with regard to static and dynamic cable bend radius. Cable pulling tensions shall not exceed manufacturer's requirements and written instruction.

47. INSULATION

Field Joints: Clean and paint all weld heat affected zones with a rust inhibitor equal to or greater than the factory applied finish coat. After the internal pipe has been hydrostatically hammer-tested to 150 PSIG (10.5) kg/sq.cm.) Or 1-1/2 times the operating pressure, whichever is greater, insulation shall then be placed in the field weld area. The installer shall seal the field joint with wrappings of glass reinforcement fully saturated with a catalyzed resin identical in properties to the factory-applied resin. The joint area shall be backfilled only after the jacket has hardened, and has been visually inspected. All insulation and coating materials for making the field joint hall be furnished by the piping system manufacturer.

48. CLEANING, FILLING, AND PRESSURE TEST

1. Flush with potable water, and drain.
2. All pipes shall be pigged/swabbed before pressure test.
3. Clean and inspect all strainers.
4. Refill with potable water, venting all air.

49. EXPANSION AND CONTRACTION

1. Piping shall be installed with provisions for both horizontally and vertically in all long runs including runouts and risers.

2. Essentially the provisions shall take the form of expansion loops of offsets, as indicated on the drawings; however, in certain portions these provisions shall take the form of expansion connectors.

50. BY- PASS PUMPING

1. Bypass pumping includes furnishing, installing, operating and maintaining all primary and standby pumps, appurtenances, bypass piping, and all the tools, labor, supervision, materials, and equipment necessary to maintain existing sewer flows and services. The Contractor shall schedule bypass work in advance and coordinate with JEA Water to minimize service outages.

2. The Contractor's attention is referred to the conditions and requirements for temporary and permanent utilities as specified in the JEA Water and Wastewater Standards Manual

3. The design, installation, and operation of the temporary pumping systems shall be the Contractor's responsibility. The Contractor shall employ the services of a vendor who can demonstrate to the Engineer or JEA that he/she specializes in the design, installation, and operation of temporary bypass pumping systems.

4. The system shall be capable of pumping raw wastewater from the indicated manholes to the designated location as shown on the Drawings or selected by JEA. The temporary pumping system shall be capable of pumping the variable wastewater flows received in the gravity system indicated to be by-passed. The

bypass pumping system shall be capable of pumping up to 110% of the peak flow conditions with one pump and provide a backup pump for 100% redundancy.

5. It is required under this section that the Contractor provide all necessary means to safely convey the variable wastewater flow. It will not be permitted to stop or impede the sanitary sewer flows under any circumstances.

6. The contractor shall be capable of having maintenance personnel onsite within 30 minutes of receiving notice that there are problems associated with a bypass pumping system.

7. Contractor shall provide pipeline plugs and pumps of adequate size to handle peak flow, and temporary discharge piping to ensure variable wastewater flows of sewer system can be safely diverted around sections of work to be repaired and/or replaced.

8. SUBMITTALS:

Submit the following:

8.1. Detailed plan and description of proposed pumping system. Indicate number, size, material, location and method of installation of suction and discharge piping, size of pipeline or conveyance system to be bypassed, staging area for pumps, site access point, and expected flow.

8.1.1. Size and location of manhole or access points for suction and discharge hose or piping.
8.1.2. Temporary pipe supports and anchoring required.
8.1.3. Thrust and restraint block sizes and locations.
8.1.4. Sewer plugging method and type of plugs.
8.1.5. Bypass pump sizes, capacity, number of each size to be on site and power requirements.
8.1.6. Backup pump and piping equipment.
8.1.7. Calculations of static lift, friction losses, and flow velocity. Pump curves showing pump operating range.
8.1.8. Design plans and computation for access to bypass pumping locations indicated on drawings.
8.1.9. Calculations for selection of bypass pumping pipe size.
8.1.10. Method of noise control for each pump and/or generator.
8.1.11. Method of protecting discharge manholes or structures from erosion and damage.
8.1.12. Schedule for installation and maintenance of bypass pumping lines.
8.1.13. Procedures to monitor upstream mains for backup impacts.
8.1.14. Procedures for setup and breakdown of pumping operations.
8.1.15. Diesel fuel requirements including fuel storage capacity, secondary containment method, safety signage and procedures, MSDS.
8.1.16. Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewage spillage.
8.1.17. Maintain copy of emergency plan on site for duration of project.

8.2. Certification that bypass system will meet requirements of codes, and regulatory agencies having jurisdiction.

8.3. The bypass pumping plan shall be submitted to JEA for review a minimum of 10 days prior to any planned bypass. The JEA's permission shall be obtained prior to bypass pumping.

9. QUALITY ASSURANCE

9.1. Follow standards and as specified herein.

9.2. Perform leakage and pressure tests on discharge piping using clean water, before operation. Notify JEA at least 24 hours prior to testing.

9.3. Maintain and inspect temporary bypass pumping system every four hours. Responsible operator shall be on site when pumps are operating.

9.4. Keep and maintain spare parts for pumps and piping on site, as required.

9.5. Maintain adequate hoisting equipment and accessories on site for each pump.

10. DELIVERY AND STORAGE

10.1. Transport, deliver, handle, and store pipe, fittings, pumps, ancillary equipment and materials to prevent damage and following manufacturer's recommendations.

10.2. Inspect all material and equipment for proper operation before initiating work.

10.3. Material found to be defective or damaged due to manufacturer or shipment.

10.3.1. When JEA deems repairable: Repair as recommended by manufacturer.

10.3.2. When JEA deems not repairable: Replace as directed by JEA before initiating work.

11. JOB CONDITIONS

11.1. Make necessary site visits, inspections, and observations needed to schedule the order of work and identify bypass pumping needs prior to performing work.

11.2. Ensure that wastewater service is not disrupted during implementation and operation of bypass pumping system.

12. ENVIRONMENTAL REQUIREMENTS

12.1. Schedule and perform work in manner that does not cause or contribute to incidence of overflows, releases or spills of sewage from sanitary sewer system or bypass operation.

12.2. Maintain system such that diesel fuel and lubricant oils are not subject to accidental spillage.

12.3. CONTRACTOR shall be responsible and liable for any wastewater overflows or diesel fuel spills resulting from inadequate construction, maintenance or operation of the bypass system, including reporting to the State of Florida and any resulting fines.

13. MATERIALS

13.1. Discharge and Suction Pipes: Approved by JEA.

13.1.1. Discharge piping: Determined according to flow calculations and system operating calculations.

13.1.2. Suction piping: Determined according to pump size, flow calculations, and manhole depth following manufacturer's specifications and recommendations.

13.2. Polyethylene Plastic Pipe:

13.2.1. High density solid wall and following ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-DR) based on Outside Diameter, ASTM D1248 and ASTM D3550.
13.2.2. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.

13.3. High-Density Polyethylene (HDPE).

13.3.1. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
13.3.1.1. Defective areas of pipe: Cut out and joint fused as stated herein.
13.3.2. Assembled and joined at site using couplings, flanges or butt-fusion method to provide leak proof joint. Follow manufacturer's instructions and ASTM D 2657.
13.3.2.1. Threaded or solvent joints and connections are not permitted.
13.3.3. Fusing: By personnel certified as fusion technicians by manufacturer of HDPE pipe and/or fusing equipment.
13.3.3.1. Butt-fused joint: True alignment and uniform roll-back beads resulting from use of proper temperature and pressure.
13.3.3.2. Allow adequate cooling time before removal of pressure.
13.3.3.3. Watertight and have tensile strength equal to that of pipe.
13.3.3.4. Acceptance by JEA before insertion.
13.3.3.5. Use in streams, storm water culverts and environmentally sensitive areas.

13.4. Flexible Hoses and Associated Couplings and Connectors.

13.4.1. Abrasion resistant.
13.4.2. Suitable for intended service.
13.4.3. Rated for external and internal loads anticipated, including test pressure.
13.4.4. External loading design: Incorporate anticipated traffic loadings, including traffic impact loading.
13.4.5. When subject to traffic loading, compose system, such as traffic ramps or covers. a. Install system and maintain H-20 loading requirements while in use or as directed by the JEA.

13.5. Valves and Fittings: Determined according to flow calculations, pump sizes previously determined, and system operating pressures. Isolation valves shall be gate valves, check valves shall be tilting disc designed for wastewater service, and fittings shall be HDPE or ductile iron with appropriate restrained transition fittings between adjacent piping material.

13.6. Plugs: Selected and installed according to size of line to be plugged, pipe and manhole configurations, and based on specific site.
13.6.1. Additional plugs: Available in the event a plug fails. Plugs will be inspected before use for defects which may lead to failure.

13.7. Aluminum "irrigation type" piping or glued PVC piping will not be permitted.

13.8. Discharge hose will only be allowed in short sections when approved by JEA.

14. PUMPING EQUIPMENT

14.1. All pumps used shall be fully-automatic, self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps shall be diesel powered. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of influent flows.

14.2. Engines shall be muffled in such a manner that the maximum noise level will not exceed 70 dBA at thirty (30) feet from motors. Implement sound damping measures. Standby pumping equipment shall be at the site continuously during pumping to provide 100 percent standby pumping capacity. The standby pumps shall be connected to piping such that if the duty pump fails, the standby pump can be online immediately. Provide manpower to continuously monitor the pumping equipment on a 24-hour basis while in operation and activate standby equipment.

14.3. The pumps and drives shall be rated for continuous duty and shall be capable of pumping the specified flow range without surging, cavitation, or vibration. The pump shall not overload the driver at any point on the pump operating curve. Rotative components shall be statically and dynamically balanced. The pump shall be suitable for use with raw unscreened sewage and trash. The pump shall be a self-contained unit with critical silence enclosures, designed for temporary use.

14.4. Pump shall have a ductile iron casing, suction cover, separation tank, and non-return valve, a high nickel steel open impeller, front and rear wear plate, shaft sleeve and shaft.

14.5. Pump seals shall be constructed of silicon carbide, of the mechanical type, and shall be located in an oil bath. This will allow lubrication by the oil, not the wastewater and will allow pump operation at periods of low flow.

14.6. The Bypass Pumping Systems shall be capable of pumping 110% of the peak flow conditions with only one of the two bypass pumps operating.

15. PUMP CONTROLS

15.1. CONTRACTOR shall provide the necessary instrumentation and controls for starting/stopping each pump and for monitoring level, pump status, critical engine functions, battery status, fuel level, etc.

15.2. The bypass pumps shall have manual start/stop. One pump shall run at all times during bypass operations. A high-water alarm signal (light) will indicate pump operational problems and automatically activate the backup pump.

15.3. Local visible alarms shall be provided, and automatic communication for alarms shall be by cellular telephone autodialing system with at least ten (10) programmable emergency contact phone numbers.

15.4. Connect bypass pump system status and alarms to JEA SCADA system.

16. INSTALLATION

16.1. Equipment specified in this section shall be installed in strict accordance with the manufacturer's instructions and recommendations. Installation shall include furnishing oil, fuel, grease, lubricants, tools and spare parts that may be required to maintain the operation of the pump throughout the construction period, as recommended by the manufacturer. The Contractor shall be solely responsible for maintaining the temporary pumps and appurtenances. At the end of the construction period, the contractor shall remove the pumps and appurtenances.

16.2. The pumps are to be installed for temporary use only and shall be removed by the Contractor prior to completion of the contract. The contractor shall be responsible for proper operation of the complete pumping system, which includes pump, driver, controls, and appropriate pipe connections, during the construction period.

16.3. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

16.4. The Contractor shall insure that the temporary pumping system is properly maintained, and a responsible operator shall be on hand at all times when pumps are operating.

16.5. The temporary pumping system shall be placed in service a minimum of 24 hours before any work may begin.

16.6. Bypass Pipelines:
- 16.6.1. Pipeline may be placed along shoulder of roads.
- 16.6.2. Do not place in streets.
- 16.6.3. When bypass pipeline crosses local streets and private driveways, place in roadway ramps.
- 16.6.4. When roadway ramps cannot be used, place bypass in trenches and cover with temporary pavement as approved by JEA.

17. BYPASS PUMP TEST

17.1. A functional/operational test of the bypass pump setup must be successfully run for 24 hours before taking the existing manhole(s) and pump station offline.

18. SEWER BYPASSING

18.1. The Contractor shall schedule the Work so that the bypass pump stations are maintained in continuous operation. All processes shall be maintained in continuous operation during the construction period except during approved interruptions. Installation of the bypass pumping should be made prior to starting other construction activities so that the bypass may be utilized to maintain variable wastewater flows with minimal interruption.

18.2. The existing pump station shall be shut down ONLY when all bypass operations are acceptable to the JEA and Engineer.

18.3. Under no circumstances shall sewage or solids be deposited onto the surrounding surfaces or into drainage ways. Sewage shall be handled in a manner so as not to create a health hazard.

18.4. Maintain continuity of sanitary sewer service during the execution of the work. If sewage backup occurs during Contractor bypass pumping, the Contractor shall cleanup, repair, pay property damage costs, pay fines imposed by jurisdictional authorities, and handle all claims arising therefrom. All spills shall be contained and returned to the sewer system.

18.5. Provide a designated employee(s) whose only role in the construction effort is to be responsible for continuously monitoring (24 hours a day) the bypassing operation, and all related equipment. The designated employee(s) will not be allowed to participate in any other unrelated undertaking, while the bypassing operation is in effect.

18.6. Complete a bypassing checklist prior to bypassing operation. The checklist will demonstrate the step-by-step inspection of the pumps, pipes, hold-down cables, plugs, and other equipment or appurtenances that will be used in the operation and sign the checklist.

18.7. Maintain on site enough equipment and materials to ensure continuous and successful operation of the bypass and dewatering systems. Standby pumps shall always be fueled and operational. Maintain on site a sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping and other parts or system hardware to ensure immediate repair or modification of any part of the system as necessary.

18.8. Once written permission is issued, the Contractor shall remove all components of the temporary pumping system. The Contractor shall perform all restoration work to the satisfaction of JEA.

19. DAMAGES

19.1. Without cost to JEA, repair any damage that may result from the temporary or permanent demobilization from the Work area, and installation, operation, maintenance, and removal of the sewer bypass pumping system. This includes but is not limited to damages resulting from inadequate demobilization, or improper installation, operation and maintenance of the bypass system, mechanical failures, or electrical failures.

19.2. CONTRACTOR shall remove all pumping system components and restore any modifications to the existing structure as directed by JEA. Any soil containing grease, oil, or fuel from the pump engines shall be removed from the site and replaced with topsoil.

19.3. All sewer plugs and other bypass system appurtenances shall be removed, and any damage to the station, gravity sewer pipes or manhole shall be repaired.

51. COORDINATION OF ELECTRIC CONDUIT INSTALLATION TO THE NEW JEA HQ BUILDING

Contractor to coordinate the installation of the electric duct bank conduit with JEA electric sub-contractor along Julia St and Monroe St intersection and W. Monroe St West, connecting to the New JEA HQ Building.

52. LOCATE EXISTING 36'' HDPEP CHILLED WATER MAINS FOR 16" TIE-IN (ALLOWANCE):

1. All labor and equipment necessary to excavate and expose the existing two 36'' Chilled Water lines in order to perform the tie –ins including but not limited to: concrete slab removal, hand or machine excavate pits, backfill, compaction, temporary shoring or/and trenching, dewatering, site cleanup
2. All work shall be performed according to the latest JEA Water and Wastewater Standards and City of Jacksonville Standards
3. Costs associated with the installation of tie-ins will be paid under the associated line item in the bid form.
4. Contractor to provide supportive documentation for payment from the allowance based on the times and materials method as indicated in the solicitation section 2.17.6 When SWA Effective, item 2. Cost Reimbursable Method.