SECTION 33 01 30.16
INSPECTION OF AIR RELEASE VALVES

1. GENERAL

The following supplemental specifications are intended to address the requirements and processes for inspection of combination air release and vacuum valves (ARV) for sanitary sewer force mains.

a. Definitions

i. OWNER: JEA

ii. CONTRACTOR: Inspection services provider for field assessments of combination air release and vacuum valves for sanitary sewer systems for OWNER.

iii. ARV: Air Release Valve - Device having features consistent with a combination air release and vacuum valve for sanitary sewer municipal systems.

iv. Offset ARV: A Structure where the ARV Device and access structure housing the ARV is not located directly above the force main the ARV is servicing.

v. QUALIFIED INSPECTOR: Inspections are to be provided by a National Association of Sewer Service Companies (NASSCO) Manhole Assessment Certification Program (MACP) certified person with intimate knowledge and experience with large diameter pressurized wastewater collection systems and as approved by OWNER.

vi. Not-to-Exceed: The CONTRACT shall not exceed the total Bid Workbook Price.

b. References

This section supplements JEA Wastewater Standards. In the case of contradictory information, this specification takes precedence over JEA Wastewater Standards, located on JEA.com

https://www.jea.com/Engineering_and_Construction/Water_and_Wastewater_Standards/

2. SCOPE

The purpose of this program is to support the JEA ARV Rehabilitation and Replacement Program by exposing and inspecting existing ARV force main connections, isolation valves and ARVs for evidence of leaks, defects or corrosion of existing ARV, isolation valve, saddle/sleeve connection, pipe material, and manhole/vault. These inspections will identify defects in the ARV system that will be scheduled for repair or replacement to help ensure the longevity and efficiency of their ARVs on the pressurized sewer system.

The scope of work includes the physical inspection of a subset of the approximately one thousand seven hundred (1,700) existing ARVs installed on sanitary sewer force mains. The ARVs to be inspected are denoted in the Contract Drawings. The work shall be scheduled and performed in phases. Phase 1 is scheduled to be completed in JEA fiscal year (FY) 2019, which starts October 1, 2018 and ends September 30, 2019. Inspections for Phase 1 work will prioritize larger diameter force mains. Maps of the anticipated ARV inspection locations are provided for reference as part of Addendum 1, Appendix A. ARV Inspection locations may be removed or changed to a similar location at the sole discretion of the OWNER. CONTRACTOR shall complete inspection services for Phase 1 within two hundred and forty (240) days from notice-to-proceed (NTP). The vast majority of ARVs are located in concrete vaults primarily consisting of precast manhole risers or rectangular structures which extend vertically from the force main to ground level or above. Access into the vault

is through a standard manhole lid or hinged access hatch. Occasionally ARVs may be located on aerial force mains attached to bridges or installed on wooden piles over waterways.

CONTRACTOR shall provide:

- Excavation inside of ARV manholes, to a depth of one-third of the force main diameter, adequate to expose the tapping saddle; excavated material shall be disposed of properly
- Backfilling with silica sand (as specified in Section 902 of FDOT Standard Specifications for Road and Bridge) to the bottom of the lowest isolation valve
- Inspection services, field assessment, data collection and reporting services of ARVs
- All ancillary services, equipment and materials to complete this work including planning, permits, and traffic control

CONTRACTOR shall develop an organized, systematic approach for inspecting each existing ARV and its connection to a pressurized force main. Prior to the field assessment, the CONTRACTOR will review OWNER's geographical information system (GIS) Geodatabase data and existing PDF record drawings and develop plans for the field inspection and assessment work. It is the responsibility of the CONTRACTOR to confirm locations of all ARVs. It is the intention of this program to expose the existing force main connection in such a way that a competent, QUALIFIED INSPECTOR can clearly see if any defects or ambiguities exist in the piping, ARV, isolation valve or connected appurtenances. Minimum excavation shall be one-third of the force main diameter. All collected data shall be recorded electronically in the field by the CONTRACTOR in a database format, updated daily and submitted weekly to OWNER for review.

The following tasks associated with this project shall be provided by the CONTRACTOR and include, but are not limited to:

- Task 1 – Pre-Field Work Planning: Review of available field data to develop a logical and comprehensive schedule for inspections of existing ARVs in coordination and with approval of OWNER. The inspection areas will be prioritized as determined by OWNER. The CONTRACTOR's efforts will include, but are not limited to, planning for traffic control, access to secured areas, confined space entry, and emergency response planning. Permits (if needed) will be coordinated with OWNER. Plan and schedule for inspection shall be submitted for review a minimum of two weeks prior to scheduled start of field work. This submittal shall also include the computer tablets proposed for use so that they may be setup and confirmed operational. All costs associated with this activity are to be incorporated into the various unit price line items as described in Section 4 (MEASUREMENT AND PAYMENT)
- Task 2 – Field Assessment and Backfilling – The work shall include exposing the force main and saddle, inspection, and backfilling of the manhole.
    - If any ARV cannot be accessed, CONTRACTOR will notify OWNER. The OWNER will provide, at their discretion, direction on how to proceed. This direction may include accessing the ARV with the assistance of the OWNER, removal of inspection of the ARV from the scope or removal of inspection of the ARV from the scope and replacement with inspection of a different ARV, at a location identified by the OWNER.
    - When an SSO is encountered or created from inspection activities, Contractor shall utilize vacuum truck to the maximum extent possible to contain SSO.

    - If SSOs are repeatedly created due to inspection activities; JEA shall review root causes with contractor. If root causes are determined to be contractor inspection means and methods, this may be grounds for termination of the contract.
- Task 3 – Data Collection and Daily Reporting –The CONTRACTOR shall furnish electronic field-data collection equipment (i.e. computer tablet) for each QUALIFIED INSPECTOR to collect, store, and upload data formatted in a template approved by the OWNER. The data shall be uploaded and saved daily to the online project database provided by the OWNER. The data collection shall be divided into four sections: ARV and isolation valve, force main connection and appurtenances, manhole/vault, and site. The intent is to collect all data at each location concurrently. The data collection, upload and deliverable shall include, but is not limited to:

    - Initial hydrogen sulfide monitoring: The monitoring result shall be taken according to manufacturer's directions and within one (1) minute after cover is removed. The hydrogen sulfide monitoring equipment shall have a manufacturer's guaranteed measurement from zero to one-hundred (0 – 100) parts per million (ppm) range accuracy of +/- 1 ppm or +/- 10% of reading, whichever is higher.
    - Condition of assets based on descriptions provided in Exhibit B
    - Digital photographs to include:
        - Pictures of existing site surroundings (top of enclosure in bottom of frame looking N, E, S, and W)
        - Picture looking down into enclosure as initially found in field; the enclosure should be sufficiently lit to adequately capture ARV and Appurtenances
        - Picture looking down into enclosure after cleanout; the enclosure should be sufficiently lit to adequately capture ARV and Appurtenances
        - Picture(s) of side view of ARV and Appurtenances (show corrosion if present)
        - Pictures of any ARV components with a Condition Rating of 3 or higher.
    - CONTRACTOR shall furnish field data collection equipment (i.e. computer tablet) that will be synced daily. Equipment shall comply with the following requirements:
        - Connected to internet via Wi-Fi or cell phone network.
        - Minimum storage space of sixty-four (64) gigabytes.
        - Camera capable of taking digital photos.

The CONTRACTOR shall be responsible for completing all inspections within the allotted contract time. If additional crews are required to meet the contract schedule, the CONTRACTOR shall schedule and coordinate these activities such that the established priority areas are completed in sequential order.

As part of this solicitation the Contractor shall refer to the following documents included herein:

- Exhibit A –ARV Condition Assessment Scoring Guidelines
- Exhibit B – Fields to be Collected in Electronic Data System

3. MINIMUM QUALIFICATIONS

CONTRACTOR shall provide a QUALIFIED INSPECTOR with a minimum of five (5) years of experience in water and wastewater construction and inspection and must be NASSCO MACP certified. Qualifications must be submitted in writing to OWNER for review and approval a minimum of three weeks before scheduled inspections and must include at least three (3) references.