



## **ADDENDUM NO. 1**

**DATE:** May 23, 2016  
**TO:** ALL PLAN HOLDERS OF THE:  
**FROM:** EAST DUNNE AVENUE WATER MAIN PROJECT  
KEVIN O'CONNELL – CITY OF MORGAN HILL  
**SUBJECT:** ADDITIONS/CHANGES

**NO ATTACHMENTS** The updates to the plans and/or specifications for the above referenced project are as follows:

### **UNDER TECHNICAL SPECIFICATIONS**

#### **IN SECTION 15065 PVC PIPE, PART 1.03. SUBMITTALS, A.,**

***ADD:***

5. Additional Fusible PVC product data requirements: The Contractor shall provide product data from the pipe supplier:
  - a. Pipe Size
  - b. Dimensionality
  - c. Pressure Class per applicable standard
  - d. Color
  - e. Recommended Minimum Bending Radius
  - f. Recommended Maximum Safe Pull Force
6. Fusion technician qualification indicating conformance with this specification

#### **IN SECTION 15065 PVC PIPE, PART 2.02. PVC PRESSURE PIPE, A. C900/905, 1. Pipe,**

***ADD:***

- a) C900 Dimension ratio: DR 18, minimum 235 psi pressure rating.
- b) C905 Dimension ratio: DR 21, minimum 200 psi pressure rating

#### **IN SECTION 15065 PVC PIPE, PART 2.02. PVC PRESSURE PIPE, A. C900/905, 3. Joints,**

***ADD:***

5. Fusion Process for PVC C900/C905
  - a. As an alternative to the restrained push-on joints, sections of PVC pipe may be joined into continuous lengths on the job site above ground.

- b. The joining method shall be the butt fusion method, in compliance with the AWWA C605-13, and shall be performed in strict accordance with the pipe manufacturer's recommendations.
- c. Fusion used in the joining procedure shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, fusion temperature, and alignment and fusion pressure. Electrofusion may be used for field closures as necessary.
  - 1) Pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
  - 2) Pipe will be fused by qualified fusion technicians, as documented by the pipe supplier. The Contractor shall maintain records of trained personnel, and shall certify that training was received not more than 12 months before commencing construction.
  - 3) Butt fusion shall conform to the pipe manufacturer's criteria for fusible PVC pipe. Joint strength shall be equal to that of the adjacent pipe.
  - 4) The inside and outside of the pipe ends shall be cleaned with a cotton or non-synthetic cloth to remove dirt, water, grease, and other foreign materials. The pipe ends shall be cut square and carefully aligned just prior to heating.
  - 5) Butt fusion operations shall be monitored by a device which will provide accurate measurements of the hydraulic cylinder pressure heater plate surface temperature and time. These measurements will be recorded on hard copy printout available for review by the inspector at the time of welding. Unacceptable information will require the Contractor to cut out the weld material and try again until successful.
  - 6) After achieving the proper melt pattern, the pipe ends shall be brought together in a firm, rapid motion applying sufficient pressure to form a pipe bead around and inside the entire circumference of the pipe.
  - 7) The inside weld bead shall be removed by cutting the bead away without scoring the inside wall of the pipe. The Contractor shall submit to the Engineer, for review as part of the submittal requirements, a de-beading process for use in removing the internal bead for the newly joined pipe sections. External beads shall not be removed.
  - 8) Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
    - a) HEAT PLATE – Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
    - b) CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
    - c) GENERAL MACHINE – Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
    - d) DATA LOGGING DEVICE – An approved data-logging device with the current version of the pipe supplier's recommended and compatible software shall be used. Data-logging device operations and maintenance manual shall be with

the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.

- 9) Other equipment specifically required for the fusion process shall include the following:
  - a) Pipe rollers shall be used for support of pipe to either side of the machine
  - b) A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations. A fire retardant bag or suitable enclosure shall be used with the heater plate when necessary to facilitate control of heating process, and to protect the heater plate surfaces from dirt and other debris when not in use.
  - c) The heater plate surfaces shall be cleaned regularly as needed to prevent accumulation of fusion welding residues or other substances that may result in faulty pipe joining.
  - d) An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
  - e) Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
  - f) Facing blades specifically designed for cutting the pipe material (fusible PVC shall be used.
- d. Joint Recording: Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of the pipe material used. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report. Equipment shall be McElroy Data Logger or approval equal.
- e. Fusion Quality: The Contractor shall ensure the field set-up and operation of the fusion equipment, and the fusion procedure used by the Contractor's fusion operator while on site. Upon request by the Owner, the Contractor shall verify field fusion quality by making and testing a trial fusion for pipe sizes 12" and smaller. The trial fusion shall be allowed to cool completely before conducting a Bent Strap Test. The bent test straps shall be cut out and tested in accordance with ASTM F2620. If the bent strap test of the trial fusion fails at the joint, the field fusions represented by the trial fusion shall be rejected. For pipe sizes greater than 12" there are several QA/QC controls for fusion joint quality:
  - 1) Operator training in identifying a properly made fusion.
  - 2) McElroy Data Logger; to log and verify proper fusion procedure was conducted.
  - 3) Field tensile testing of the joint Hydrostatic testing.
  - 4) Contractor shall contact McElroy Mfg. for testing apparatus and procedures.
  - 5) The Contractor at his expense shall make all necessary corrections to equipment, set-up, operation and fusion procedure, and shall re-make the rejected fusions. On every day butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12" (min) or 30 times the wall thickness in length with the fusion in the center, and 1" (min) or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made, cooled completely and tested. Butt fusion of pipe to be installed shall not commence until a trial fusion had passed the bent strap test.

**UNDER PLANS (DRAWINGS)**

**ON SHEET C001, CONNECTION TO EXISTING 8" W IN GALLOP DRIVE,**

***REPLACE CALLOUT:***

" TIE-IN:  
N: 1875914.11  
E: 6239148.83"

***WITH:***

" 8" 45 DEGREE WYE FLG  
W/ THRUST BLOCK  
N: 1875914.11  
E: 6239148.83  
SEE NOTE 10

**ON SHEET C001, GENERAL SHEET NOTES,**

***ADD:***

"10. CONTRACTOR TO POTHOLE EXISTING 8" W TO DETERMINE CL ELEVATION.  
CONTRACTOR TO MATCH (N) WATER PIPE CL ELEVATION TO EXISTING 8" W CL

**ON SHEET C010, NOTES:**

***REPLACE:***

"2. CONTRACTOR TO POTHOLE EXISTING 8" W TO DETERMINE CL ELEVATION.  
CONTRACTOR TO MATCH (N) 16" W CL ELEVATION TO EXISTING 8" W CL

***WITH:***

"2. CONTRACTOR TO POTHOLE EXISTING 8" W TO DETERMINE CL ELEVATION.  
CONTRACTOR TO MATCH (N) WATER PIPE CL ELEVATION TO EXISTING 8" W CL

**RESPONSES TO REQUEST FOR INFORMATION**

<b>Question No.</b>	<b>Section and Page or Drawing No. Reference</b>	<b>Question/Comment</b>	<b>Response</b>
1	15100	I'm unable to locate the specifications for the pressure reducing valves. Please list section and number	See specification Section 15100, Valves and Miscellaneous Components: - Paragraph 2.01 C for acceptable manufacturer - Paragraph 2.04 for product specifications

ADDENDUM ACKNOWLEDGMENT

Bidder acknowledges receipt of this addendum, which shall be attached to the proposal.

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Contractor's Representative

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Date

**THIS DOCUMENT AND THE ATTACHMENTS SHALL BECOME PART OF THE  
PROJECTS SPECIFICATION**