



**TOWN OF WESTWOOD  
COMMONWEALTH OF MASSACHUSETTS**

**Addendum #2  
To the Plans and Specifications  
Pump Station Maintenance and Improvements Project  
DPW-17-B-011**

**Issued December 6, 2016**

**GENERAL INFORMATION FOR ADDENDUM 02**

- A Non-Mandatory Pre-Bid Conference was held on December 1, 2016 at the Department of Public Works Office, 50 Carby Street, Westwood, MA. The Attendance Sign-In Sheet is attached.
- The following changes and/or additions are hereby made to the Plans and Specifications for the above-referenced project under the provisions of Section 00200, Article 7 of the Instruction to Bidders.
- All General Bids are now to be delivered by 11:00 am on Thursday, January 5, 2017 and all Sub-Bids must be delivered by 11:00 am on Thursday, December 15, 2016 to the Procurement Department, Westwood Town Hall, 580 High Street, Westwood MA 02090.
- The attention of all bidders submitting proposals for the above referenced project is called to the following Addendum to the drawings and specifications (Contract Documents). The items set forth herein, whether of omission, addition, substitution, or clarification, are all to be included in and form a part of the proposed work.
- Inclusion of this Addendum must be acknowledged by the bidders by inserting its number on the appropriate line on Page 00410-4 of the Form for General Bid and on Page 00420-4 of the Form for Sub-Bid. Failure to acknowledge any and all addenda in the above specified bid form may be cause for rejection of the bid by the Town of Westwood, on the grounds that the bid is not responsive.

Make the following changes, revision, additions, and/or deletions to the Contract Documents:

**DRAWINGS CHANGES**

***Sheet 4 – Conant Rd Pump Station Mechanical Lower Level, Note 2***

*Replace the words “(SG-BS4, SG-BS5)” with the following:*

*“(SG-CR4, SG-CR5)”*

***Sheet 5 – Brook Street Pump Station Mechanical Lower Level, Note 2***

*Replace the words “(SG-CR4, SG-CR5)” with the following:*

*“(SG-BS4, SG-BS5)”*



## TOWN OF WESTWOOD COMMONWEALTH OF MASSACHUSETTS

### ***Sheet 9 – Arcadia Road Pump Station Electrical***

Add the following word to the beginning of Electrical Keyed Notes #1:

“Replace”

### ***Sheet 9 – Arcadia Road Pump Station Electrical***

Add the following word to the beginning of Electrical Keyed Notes #2:

“Replace”

### ***Sheet 9 – Arcadia Road Pump Station Electrical***

Add the following at the end of Electrical Keyed Notes #5:

“Replace existing PVC conduit with new rigid aluminum conduit. Required length of new conduit is approximately 32 feet”

## **SPECIFICATION CHANGES**

### ***1. Modify Section 00200 – Invitation for Bids, item I.***

Modify Section 00200 – Invitation for Bids, item I to state:

- All General Bids must be delivered by 11:00 am on **Thursday, January 5, 2017** to:

Procurement Department

Westwood Town Hall

580 High Street

Westwood MA 02090

- All Sub-Bids must be delivered by 11:00 am on **Thursday, December 15, 2016** to the address referenced above.”

### ***2. Modify Section 00100 – Advertisement for Bid, first paragraph***

Modify Section 00100 – Advertisement for Bid, first paragraph to state, “Sealed Bids for the construction of the “Town of Westwood, Pump Station Maintenance & Improvements Project, Contract No. DPW-17-C-011 - Town Bid No. DPW-17-B-011” will be received by the Procurement Department at the Westwood Town Hall, 580 High Street, Westwood, MA 02090 until 11:00 a.m. local time on **Thursday January 5, 2017** at which time the Bids received will be publicly opened and read.”

### ***3. Modify Section 00100 – Advertisement for Bid, second paragraph***

Modify Section 00100 – Advertisement for Bid, second paragraph to state, “Sealed Bids from Subcontractors addressed as referenced above will be received by the Procurement Department at the Westwood Town Hall, 580 High Street, Westwood, MA 02090 until 11:00 a.m. on **Thursday December 15, 2016** and then at said office publicly opened and read aloud...”



# TOWN OF WESTWOOD COMMONWEALTH OF MASSACHUSETTS

#### **4. Delete Section 05500 – Miscellaneous Metals, item 2.2.B.2 Wedge Anchors**

*Delete in its entirety item 2.2.B.2 Wedge Anchors, of Section 05500 – Miscellaneous Metals*

#### **5. Modify Section 09900 – Painting, Table 09900-C, Color Schedule**

*Modify Section 09900 – Painting, by deleting Table 09900-C, Color Schedule, and replacing with the following:*

**TABLE 09900-C**

Color Schedule

| <b>Item</b>                        | <b>Color</b>                       |
|------------------------------------|------------------------------------|
| Pump Station Discharge Check Valve | Match Existing or Grey             |
| Pump Station Suction Piping        | Grey                               |
| Pump Station Discharge Piping      | Dark Green                         |
| Electrical Conduit                 | Match Existing or Adjacent Surface |

#### **6. Modify Section 16050 – Basic Electrical Requirements, Part 1.1.B**

*Modify Section 16050 – Basic Electrical Requirements, Part 1.1.B to read as follows:*

*“B. The Work to be done under these Sections is shown on the Drawings, Sheet Nos. #6, #7, #8, #9, and #10”*

#### **7. Delete Section 16131 – Conduit**

*Delete in its entirety, Section 16131 – Conduit. Replace with the attached Section 16131 – Conduit.*

## **QUESTIONS, RESPONSES AND CLARIFICATIONS**

### **Questions Submitted from Prospective Bidders and Responses:**

1. What is the CFM requirement for the exhaust fan on Brook Street Pump Station MCC?

*300 cfm*

2. The approximate project cost was estimated to be approximately \$400,000, is this still correct?

*Yes*

3. Will there be a requirement for subs-to-sub?

*We do not anticipate there being a need for subs-to-sub.*



## TOWN OF WESTWOOD COMMONWEALTH OF MASSACHUSETTS

4. Please clarify if the dual head wall mounted battery powered emergency lights in the Arcadia Road Pump Station are to be replaced.

*Yes, wall mounted battery powered emergency lights are to be replaced per Sheet 9 – Arcadia Road Pump Station Electrical, Electrical Keyed Notes No. 1 and No. 2.*

5. What are the pushbuttons for that are to be replaced per Sheet 9 – Arcadia Road Pump Station Electrical, Electrical Keyed Notes No. 4?

*The pushbutton adjacent to the upper level entry door is for the wet well odor control blower. The second pushbutton set could not be confirmed.*

6. Can a copy of the plans be purchased?

*Drawing set can be purchased and picked up from the Engineer for \$100. Check should be made out to “Tighe and Bond”. Fee is non-refundable.*

7. Section 16050 1.1 B. lists that the sub-bid is the work shown on sheet Nos. 7, 8, 9, and 10, however we believe that sheet No. 6 also shows electrical work?

*That is correct. Sheet No. 6 – Brook Street Pump Station Electrical Plan, also includes work to be completed by electrical sub-bid.*

### Addendum 02 Attachments:

1. Non-Mandatory Pre-Bid Conference Attendance Sheet
2. Section 16131 - Conduit

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# **Attachment 1**

Pre-Bid Meeting Attendance Sheet

**Pump Station Maintenance and Improvements Project, Town of Westwood**

**Non-Mandatory Pre-Bid Conference**

**Location: Department of Public Works Office, 50 Carby Street, Westwood, MA**

**Date: December 1, 2016 at 10 a.m.**

|    | Name            | Company                 | G.C.?<br>(yes or no) | Address                                    | Phone & Fax                        | Email                         |
|----|-----------------|-------------------------|----------------------|--|------------------------------------|-------------------------------|
| 1. | Scott Gumbrazio | Pride                   | yes                  | 70, N. Main ST<br>Berkley Ma.              | P: 508 880 6009<br>F: 508 880 2611 | Pride N.V.I.R<br>@ Yahoo, Com |
| 2. | Mike Coleman    | Waston & Sampson<br>CMR | Yes                  | 5 Centennial Dr<br>Peabody MA 01960        | P: 978 532-1900<br>F:              | Smiths@wse,inc.com            |
| 3. | Jim Moran       | SCHERBON                | YES                  | 40 Haverhill Rd<br>Amesbury MA             | P: 978-388-3132<br>F:              | J.Moran @<br>SCHERBON.COM     |
| 4. | Jeff Schnurr    | Jasco Electric<br>Inc   | NO                   | 456 Rear West<br>Central St<br>Franklin MA | P: 508 520-2055<br>F: 508 520-2077 | jeff.schnurr<br>Overizon.net  |
| 5. |                 |                         |                      |  | P:<br>F:                           |                               |
| 6. |                 |                         |                      |  | P:<br>F:                           |                               |
| 7. |                 |                         |                      |  | P:<br>F:                           |                               |
| 8. |                 |                         |                      |  | P:<br>F:                           |                               |
| 9. |                 |                         |                      |  | P:<br>F:                           |                               |

# **Attachment 2**

Section 16131 - Conduit

## SECTION 16131

## CONDUIT

## PART 1 GENERAL

## 1.1 SUB-BID REQUIREMENTS

- A. This section is part of filed Sub-Bid – Electrical.

## 1.2 SUMMARY

- A. Section Includes
  - 1. Metal conduit
  - 2. Rigid aluminum conduit
  - 3. Non-metallic (PVC) conduit
  - 4. Fittings and conduit bodies
  - 5. Conduit wall seals, existing walls
  - 6. Fire stop fittings
  - 7. Underground warning tape
  - 8. Conduit expansion joint
  - 9. Conduit sealing bushing
  - 10. Explosion proof sealing fittings
- B. Related Sections
  - 1. Section 16060, Grounding and Bonding
  - 2. Section 16070, Electrical Hangers and Supports

## 1.3 REFERENCES

- A. ACI 318 – Building Code Requirements for Structural Concrete
- B. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies
- C. ANSI/NFPA 70 - National Electric Code
- D. NEMA TC 2 - Electrical Plastic Tubing (EPT)
- E. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit
- F. ANSI C80.1 - Galvanized Rigid Steel Conduit, Zinc Coated
- G. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing
- H. UL-6 – Standard for Rigid Metal Conduit

- I. ANSI C80.3 – Electrical Metallic Tubing, Zinc Coated
- J. ANSI C80.6 – Intermediate Metal Conduit, Zinc Coated

#### 1.4 SUBMITTALS

- A. Shop drawings, product data and reports
- B. Riser Diagrams for the electrical installation

#### 1.5 DESIGN REQUIREMENTS

- A. Conduit Size: ANSI/NFPA 70

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Accept conduit on site. Inspect for damage.
- B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- C. Protect PVC conduit from sunlight.

#### 1.7 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.
- D. Provide complete conduit systems between electrical equipment and devices as required.

### PART 2 PRODUCTS

#### 2.1 GENERAL CONDUIT REQUIREMENTS

- A. Minimum Size: 3/4 inch unless otherwise specified
- B. In or under slab on grade: Use galvanized rigid steel conduit
- C. Outdoor Exposed locations: Use rigid steel conduit
- D. Underground locations: Use concrete encased PVC schedule 40 conduit
- E. Class 1 Division 1 and 2 Hazardous Locations
  - 1. Use galvanized rigid steel conduit
  - 2. Provide sealing fittings at each entrance to enclosure housing an arcing device. Locate seal fittings as close as possible, in no case more than 18 inches.
  - 3. Provide seal fittings for each conduit leaving hazardous (Class 1 Division 1 or 2) area.
  - 4. Use conduit seal fittings appropriate for conduit orientation.

5. Use conduit sealing compound with fiber dam in compliance with manufacturer's recommendations.
  6. Provide junction boxes rated for hazardous locations.
- F. All Other Locations:
1. Concealed: Use galvanized rigid steel conduit
  2. Exposed: Use galvanized rigid steel conduit
- G. Connections to portable equipment from junction boxes and connections to all motors: use liquid tight flexible metal conduit.
1. Minimum Length: 12 inches
  2. Maximum Length: 36 inches
- 2.2 RIGID STEEL CONDUIT
- A. Rigid Steel Conduit: ANSI C80.1
  - B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel fittings
- 2.3 RIGID ALUMINUM CONDUIT
- A. Rigid Aluminum Conduit: ANSI C80.5
  - B. Fittings and Conduit Bodies: All copper-free cast aluminum fittings
- 2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT
- A. Description: Interlocked steel construction with PVC jacket
  - B. Fittings: ANSI/NEMA FB 1
- 2.5 NONMETALLIC (PVC) CONDUIT
- A. Description: NEMA TC 2; Schedule 40 PVC
  - B. Fittings: NEMA TC3
- 2.6 CONDUIT WALL SEALS, EXISTING WALLS
- A. Type - Suitable for core drilled holes
  - B. Manufacturer
    1. O-Z Gedney, Type CSM
    2. Or equal
- 2.7 FIRE STOP FITTINGS
- A. Type - Fittings with elastomeric rings to seal smoke and fumes
  - B. Fire rating of seal to be equal to or greater than rating of wall
  - C. Manufacturers
    1. O-Z Gedney, Type CFS

2. Or equal

## 2.8 UNDERGROUND WARNING TAPE, DETECTABLE

- A. Warning tape for all buried electrical conduit shall be solid aluminum foil core tape and printed with the words “CAUTION - BURIED ELECTRICAL LINE BELOW.”
- B. Tape shall be red and 6 inches wide.
- C. Manufacturers
  1. Ideal
  2. or equal

## 2.9 FITTINGS AND CONDUIT BODIES

- A. Fittings
  1. Description - Threaded, malleable iron or copper-free aluminum. Coating to correspond with type of conduit system being used
- B. Conduit Bodies
  1. Manufacturer
    - a. Appleton-Type Mogul - malleable iron or copper-free aluminum
    - b. Equal by O-Z Gedney
    - c. Equal by Crouse-Hinds
    - d. or equal
- C. Conduit Hubs
  1. Manufacturer
    - a. Crouse Hinds – Myers hub Type HUB
      - 1) Zinc in damp and wet locations
      - 2) Stainless steel in wet and corrosive locations
      - 3) Copper-free aluminum where aluminum conduit is used
    - b. Equal by O-Z Gedney
    - c. Equal by RACO
    - d. Equal by Appleton
    - e. or equal

## 2.10 CONDUIT EXPANSION JOINT, RIGID STEEL CONDUIT

- A. Weather tight, internal ground, expansion joint for galvanized rigid steel conduit, 4 inch maximum conduit movement
- B. Manufacturer

1. Crouse-Hinds Type XJG
2. Appleton Type XJ
3. O-Z Gedney Type AX
4. or equal

#### 2.11 CONDUIT EXPANSION FITTING, PVC

- A. Expansion fitting for PVC conduit shall compensate for length changes due to temperature variations in exposed conduit runs, 4-inch maximum conduit movement.
- B. Manufacturer
  1. Carlon
  2. or equal

#### 2.12 CONDUIT SEALING BUSHING

- A. Description: Bushing that provides a waterproof seal around wire and cables in a conduit
- B. Construction: Slotted PVC coated steel discs, neoprene sealing ring and stainless steel head cap screws and washers
- C. Manufacturer
  1. O-Z Gedney Type CSBI

#### 2.13 EXPLOSION PROOF SEALING FITTINGS

- A. Description: Explosion proof and dust-ignition proof sealing fitting
- B. Ratings:
  1. Class I, Division 1 and 2, Groups A, B, C, D
  2. Class II, Division 1, Groups E, F, G
  3. Class II, Division 2, Groups F, G
  4. Class III
- C. Bodies: Feraloy iron alloy and/or ductile iron
- D. Plugs: Feraloy iron alloy and/or steel
- E. Removable Nipples: steel
- F. Manufacturer:
  1. Crouse-Hinds type EYS
  2. Approved equivalent
- G. Sealant:

1. Crouse-Hinds Chico X fiber and Chico A sealing compound or Chico Speed Seal
2. Sealant system of sealing fitting manufacturer selected

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Junction boxes shown on the Drawings shall be provided in locations indicated. Additional boxes shall be provided as needed to comply with NFPA 70 requirements.
- B. Install conduit in accordance with NECA "Standards of Installation."
- C. Install nonmetallic conduit in accordance with manufacturer's instructions.
- D. Arrange supports to prevent misalignment during wiring installation.
- E. Support conduit using coated steel or malleable iron straps, pipe hangers, U-bolt clamps and beam clamps.
- F. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.
- G. Fasten conduit supports to building structure and surfaces under provisions of Section 16070.
- H. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- I. Do not attach conduit to ceiling support wires.
- J. Arrange conduit to maintain headroom and present neat appearance.
- K. Route exposed conduit parallel and perpendicular to walls.
- L. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- M. Route conduit in and under slab from point-to-point unless drawings indicate otherwise.
- N. Cross conduits in slab only with the Engineer's approval.
- O. Maintain adequate clearance between conduit and piping.
- P. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 104°F.
- Q. Cut conduit square using saw or pipe cutter; de-burr cut ends.
- R. Before installation of wires and cables, clean and dry inside of each conduit run.
- S. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fittings. Allow joint to cure for 20 minutes, minimum.
- T. Use conduit hubs to fasten conduit to boxes and control panels in damp and wet locations. For wet and corrosive locations, use stainless steel conduit hubs.

- U. Install no more than equivalent of three 90° bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2 inch size.
- V. Support conduits within 6 inches of each side of a bend or elbow.
- W. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- X. Provide suitable fittings to accommodate expansion and deflection where conduit crosses control and expansion joints.
- Y. Provide 100-lb. test nylon pull string in each conduit 2 inch or larger except sleeves and nipples.
- Z. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- AA. Ground and bond conduit in accordance with Section 16060.
- BB. Do not penetrate waterproofing membranes in the structural floor slab or foundation walls without approval by, and in a manner acceptable to the Engineer.
- CC. Install rigid steel conduit using only threaded fittings.
- DD. Use two locknuts, one inside and one outside of each box and enclosure when enclosure ratings are NEMA 1 or 12.
- EE. Install a chromium plated, spun or split type escutcheon on all exposed conduits passing through walls or ceilings.
- FF. Extend pipe sleeves 3/4 inch above finished floors.
- GG. Install a water and fire resistant caulking around all conduits passing through floors.
- HH. Provide separate conduit runs for 480 and 120/208 volts systems. Install motor feed and control wiring in the same conduit only when shown on the Drawings or as approved by the Engineer.
- II. Install all empty conduits in floor so finished installation is flush with finished floor. Use suitable coupling and pipe plug.
- JJ. Arrange for all duct bank systems to drain away from buildings. Install duct bank systems to drain toward manholes or handholes.
- KK. Provide thru wall seals on all conduits passing through foundation walls.
- LL. Provide a 4 inch band of black asphaltic paint, 2 inches in the concrete and 2 inches above floor, at all galvanized rigid steel conduit floor penetrations in pump chambers, tunnels, cellars and other below grade high moisture areas.
- MM. Provide a 4 inch band of black asphaltic paint, 2 inches in the concrete and 2 inches in the soil, at all galvanized rigid steel penetrations through floors or walls into soil.
- NN. Use PVC coated hangers and straps to support PVC conduit.
- OO. Use PVC conduit fittings and bodies with PVC conduit.
- PP. Install underground warning tape 12 inches above all underground conduits.

- QQ. Install underground conduit with minimum cover, in accordance with National Electric Code or utility requirements, but no less than 36 inches.
- RR. For non-concrete encased underground conduit installations, backfill the trench with sand borrow for the full width of the trench and extend the sand borrow 12-inches over the conduit.
- SS. For penetrations in existing walls, patch with mortar and touch up paint. Match existing paint color.
- TT. For penetrations in fire rated walls, use materials that maintain the fire rating of the wall.
- UU. For penetrations in new concrete walls, provide conduit nipple cast into the concrete.
- VV. Provide conduit expansion joints for underground conduits that enter a building through an exterior wall or connect to an exterior mounted disconnect switch, meter, or other equipment.
- WW. Provide explosion proof sealing fittings where indicated on the Drawings and where required by code.
- XX. Size and spacing of conduits embedded in concrete slabs or walls shall be per ACI 318, including the following:
1. Conduits embedded in concrete slabs or walls shall not be larger in outside diameter than one-third of the overall thickness of the slab or wall in which they are embedded.
  2. Conduits embedded in concrete slabs or walls shall not be spaced closer than three conduit diameters on center.

END OF SECTION

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