THE CITY OF WALTHAM
MASSACHUSETTS

PURCHASING DEPARTMENT

Fernald Center Wetlands Restoration and Stream Daylighting

A D D E N D U M N O. 3 October 28, 2021

CHANGES, CORRECTIONS AND CLARIFICATIONS

The attention of bidders submitting proposals for the above subject project is called to the following addendum to the specifications. The items set forth herein, whether of omission, addition, substitution or clarification are all to be included in and form a part of the proposal submitted.

THE NUMBER OF THIS ADDENDUM (NO. 3) MUST BE ACKNOWLEDGED ON BID FORM 00301-2.

ITEM 1: Answers to Questions

Q1. Please provide details for the pedestrian bridge shown on sheets L1 and L3.
A1. Details will be provided in a subsequent Addendum.

Q2. Specification Section 02609 does not provide the Class of RCP pipe required. Please provide the Class type.
A2. Class IV RCP is to be used for the all drain pipe on the project.

Q3. Specification Section 02950 Wetland and Riparian Restoration appears to be missing. If applicable, please provide.
A3. Please see attached Section 02955 Wetland Restoration. Please delete all references to Section 02950 Wetland and Riparian Restoration and replace with Section 02955.

Q4. Based on the existing contours, the 145.29' rim elevation of the Drain Manhole being replaced appears to be incorrect. Can you please provide all details about this replacement Drain Manhole such as (1) proposed rim elevation, the outlet diameter (existing is shown as 36", but new pipe is 18"?), and outlet invert elevation (existing is shown as 138.14').

A4. Please see details provided on Sheet G3.

Q5. We've learned that vandalism may be a problem at this site. Will the City provide a reasonable allowance for security at night and on the weekends to prevent any vandalism of the Contractor's equipment?

A5. Contractor could include any anticipated costs for security against vandalism under Item 26 Miscellaneous Work and Cleanup.

Q6. Is the 4' wide coir matting per Drawing D-2 Detail 6, only required where there are either "Live Fascines" or "10" Coir Fascines".

A6. Coir matting and 10" Coir Fascines are required along the full length of the new stream channel per Drawing D-2 Detail 6.

Q7. The Concrete Headwall shown on Drawing L-3 appears to have dimensions very different than those shown on Drawing D-3, Detail 1. Should the Concrete Headwall be constructed as shown on Drawing D-3, Detail 1 with W1 & W2 dimensions per the 18" RCP that is required?

A6. Details of headwalls will be provided in subsequent Addendum.

End of Addendum 3

SECTION 02955
WETLAND RESTORATION

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Wetland Restoration is required only if the Contractor infringes upon wetland areas. Wetland Restoration shall be provided at no additional cost to the Owner.

B. Furnish all labor, materials, equipment and incidentals required to install erosion control measures, place manufactured topsoils, finish grade, apply soil amendments, install plant stock, apply seed and mulch, and maintain the restoration areas as specified herein.

C. Restore all wetland areas which are temporarily altered by construction activities including excavation, clearing and trenching of wetlands during the course of construction to equal or better than that condition which existed previous to construction. If wetland areas cannot be restored as a result of the Contractor's activities, provide replication areas as approved by the Engineer. All restoration and replication work resulting from the Contractor's activities shall be at no additional cost to the Owner.

D. The work includes:

1. Supply manufactured topsoil Type I as specified in Section 02200 for wetland restoration area.

2. Excavate planting pits.

3. Furnish and plant trees, shrubs and herbaceous material.

4. Prune plant materials as specified.

5. Maintenance.

6. Final cleanup and all other work required to complete the requirements of this Section.

1.02 RELATED WORK

A. Site preparation including clearing, grubbing and stripping is included in Section 02100.

B. Earthwork, including production of topsoil is included in Section 02200.

C. Erosion and sedimentation control is included in Section 02270.

D. Topsoiling and seeding is included in Section 02930.

E. Copies of all environmental permits are included in attachment to bid documents.

1.03 SUBMITTALS

A. Submit, in accordance with Section (01 30 00) (01300), the following:

1. State Nursery Inspection Certificates and samples of material for inspection and acceptance upon Engineer's request for inspection and approval.

2. Certification by the landscaping contractor that all plant stock obtained for this work is the plant indicated and of quality as specified.

3. Documentation showing that the landscaping contractor performing the work has successfully completed at least two projects of this scope within the last two years and showing that their main business is landscaping.

4. Complete written instructions for maintenance of the materials for use by the Owner after the warranty period specified in Paragraph 1.06 furnished in this Section.

1.04 DEFINITIONS

A. Wetland Restoration occurs where construction activities will temporarily alter an existing wetland area. This requires restoration of topography, soil structure and vegetation to pre-construction conditions.

B. Installation Inspection: The Engineer shall inspect all work performed under this Section at the completion of installation, upon the written request of the Contractor received at least 10 days before the anticipated date of inspection. The Engineer shall inspect said work for compliance with the plans and specifications specifically with regard to number of plants, plant sizes, species, and location. Any and all corrective work identified during the inspection shall be performed at no additional cost to the Owner.

C. Final Inspection: The Engineer will provide a professional wetland scientist (PWS) to inspect all Work performed under this section at the completion of two complete growing seasons, approximately April 15 to approximately October 15, following Installation Inspection. The Engineer shall inspect all areas for compliance with the plans and specifications, for compliance with the Orders of Conditions, and the General Performance Standards for Bordering Vegetated Wetlands - 310 CMR 10.55 (4)(b)(1-7). Copies of the Orders of Conditions.

1.05 REFERENCE STANDARDS

A. American Standard for Nursery Stock, ANSI Z60.1.

B. Tree and Shrub Transplanting Manual by the International Society of Arboriculture (ISA).

1.06 WARRANTY

A. For a period of two years from the date of Substantial Completion, the Contractor warrants to the Owner that the wetland restoration conforms to these specifications and is free from defects in materials and workmanship. The Contractor shall provide maintenance during the warranty period in accordance with Paragraph 3.07. The Contractor shall inspect the work at the beginning and end of each growing season and shall replace, at no additional cost to the Owner, any work found to be defective within said warranty period. Such replacement shall include the cost of removal and reinstallation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Manufactured Topsoil Type I for wetland restoration area shall be as specified Section 02200.

B. Fertilizer shall be a slow release formula commercial fixed free flowing granules or pelletized fertilizer, 10-10-10 (nitrogen-phosphorus-potassium) grade for trees, shrubs, lawns and naturalized areas. Fertilizer shall be delivered to the site in original unopened containers each showing the manufacturer's guaranteed analysis conforming to applicable state fertilizer laws. At least 40 percent of the nitrogen in the fertilizer used shall be in slowly available (organic) form.

1. Fertilizer for trees and shrubs:
    a. Fertilizer shall be a complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with Federal and State fertilizer laws.
    b. Fertilizer shall contain 10 percent nitrogen, 10 percent phosphorous and 10 percent potassium by weight. At least 50 percent of the total nitrogen shall contain no less than 3 percent water-insoluble nitrogen.
    c. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's certificate of compliance.
    d. Store fertilizer in a weatherproof place so that it will be kept dry.

C. Lime stone shall be as specified in Section 02200.

D. Seed shall be received in the manufacturer's original unopened container bearing the date of the last germination test, which date shall be within a period of six months prior to commencement of seeding operations. Seed shall be from same or previous year's crop; each variety of seed shall have a purity of not less than 85 percent, a percentage of germination not less than 90 percent, shall have a weed content of not more than 1 percent and contain no noxious weeds. The wetland seed mixture for wetland restoration area shall be Type D as follows:

1. Type D Seed Mix

30% Lurid Sedge (Carex lurida)
25% Canada Manna Grass (Glyceria canadensis)
10% Fringed Sedge (Carex crinita)
10% Joe-Pye Weed (Eupatoriadelphus maculatus)
10% Broom Sedge (Carex tribuloides)
5% Woolgrass (Scirpus cyperinus)
5% Boneset (Eupatorium perfoliatum)
<5% Tussock Sedge (Carex stricta)
<5% Blue Vervain (Verbena hastata)

The seed mix shall contain none of the following:

Reed Canarygrass (Phalaris arundinacea)
Common Reed (Phragmites australis)
Purple Loosestrife (Lythrum salicaria)

E. The seed shall be furnished and delivered premixed. A manufacturer's certificate of compliance to the specified mixes shall be submitted by the manufacturer for each seed type. These certificates shall include the guaranteed percentages of purity, weed content and germination of the seed and also the net weight and date of shipment. No seed may be sown until the certificates have been submitted and approved.

F. All plant stock shall be furnished in the condition required in Paragraph 2.03B and accepted by the Engineer. All plant stock shall be labeled by common name and Latin binomial and certified as the correct species by the plant supplier. All plant stock shall conform to standards specified in Paragraph 1.05.

G. Mulch shall be as specified in Section 02930.

H. Erosion control blanket as specified in Section 02270.

I. Straw mulch as specified in Section 02270.

J. Tackifier as specified in Section 02930.

K. Water used in this Work shall be provided by the Contractor and shall be free from ingredients harmful to plant life. Water, hose and other watering equipment required for the Work shall be furnished by the Contractor.

2.02 PLANT MATERIALS

A. Trees, shrubs and herbaceous material shall consist of 1 Acer rubrum, 3 Viburnum dentatum, 2 Cornus amomum, 5 Onoclea sensibilis and 5 Osmunda cinnamomea, per 100 square feet of disturbed wetland. Plants shall be nursery grown under climatic conditions similar to those in the locality of the project and shall conform to the variety and sizes indicated. Plants shall conform also to the indicated botanical names and standards of size, culture and quality for the highest grades and standards as adopted in the American Standard for Nursery Stock.

B. All plants shall be dug for this project. No heeled-in plants or plants from cold storage shall be used. Plants shall be healthy and vigorous, well-branched and densely foliated when in leaf; shall be free of disease, insect pests, eggs or larvae and shall have healthy, well-developed root systems. All parts of the plant shall be moist and shall show active green cambium when cut to demonstrate plants are healthy and vigorous.

C. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated on the wetland planting plan. The trunk of each tree shall be a single trunk growing from a single unmutilated crown of roots. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety. The trunk shall be free from sun-scald, frost cracks, or wounds resulting from abrasions, fire, or other causes. No pruning wounds shall be present having a diameter of more than 2-in and such wounds must show vigorous bark on all edges.

D. Container-Grown Stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil together, firm and whole. No plants shall be loose in the container.

E. Balled and burlapped stock shall be dug with a firm natural ball of earth in which the stock is grown and then wrapped and tied according to ANSI Z60.1. Balls shall be drum laced for sizes 30-in or greater. Ball size shall be in accordance with ANSI Z.60.1 for the tree type and size.

F. If larger plants are used, the spread of roots or ball of earth shall be increased in proportion to the size of the plant.

2.03 INSPECTION OF PLANT MATERIALS

A. Inspection of plants before digging shall be at the option of the Engineer. Be present, if requested by Engineer, for inspection of plants at nursery.

B. Plants shall be subjected to inspection and approval upon delivery for conformity to specified requirements as to quality, size and variety. Such approval shall not impair the right of inspection and rejection during the progress of the work.

C. Plants shall be accompanied by State Nursery inspection certificates.

D. No plants will be accepted with plastic burlap or if the ball is cracked or broken.

PART 3 EXECUTION

3.01 WETLAND RESTORATION

A. Restore all existing wetland areas which are temporarily altered by construction activities, including excavation, clearing, and trenching of wetlands in the course of construction activities. Provide erosion control; replace wetland topsoil; establish finish grade; apply soil amendments; plant balled and burlapped, potted and bare root plant stock; apply seed and mulch; and maintain the wetlands restoration area. Restoration shall proceed as follows:

1. During any excavation, trenching or ditching in wetlands, the existing wetland topsoil shall be scraped off and segregated from subsoils and kept wet if stockpiled for more than 24 hours. Stockpiled wetland topsoil shall be irrigated to prevent desiccation of roots and viable propagules within the wetland topsoil.

2. After construction is completed, restore subgrades to match preconstruction conditions (8 to 12-in below finished grade).

3. The finished grade shall be established using Manufactured Topsoil Type I and the wetland topsoil removed from the temporary wetland alteration area and stockpiled separately from subsoils. The areas shall be rolled with a hand roller weighing not more than 100 pounds per foot of width and raked smooth. The finish grades shall match preconstruction grades and transition smoothly to the surrounding undisturbed wetland contours.

4. After final grades are established the altered area shall be stabilized with Type D Seed Mix. The seed shall meet all standards of purity and packaging requirements as specified above. Seed shall be spread at the rate specified in Section 02930.

5. The altered area during construction shall be temporarily stabilized as specified in Section (31 25 00) (02270) and Section (32 90 10) (02900). The area shall be watered and maintained in accordance with Section 02930.

3.02 DIGGING, HANDLING AND PROTECTION OF PLANTS

A. Plants shall be dug with firm natural balls of earth, of sufficient diameter and depth to include most of the fibrous roots and conforming to the standards of ANSI Z60.1.

B. Roots or balls of plants shall be protected at all times from sun and from drying winds.

C. Plants which cannot be planted immediately upon delivery shall be set on the ground and be protected with soil, bark mulch, or other acceptable material.

D. No plant shall be bound with wire or rope at any time so as to damage the bark or break branches.

3.03 PLANTING OPERATIONS

A. Stake out locations in the field as indicated on the Drawings and secure the Engineer's approval before excavating plant pits.

B. All plant pits shall be excavated with sloped sides.

C. Plant pits shall be three times as wide as the rootball with sloped sides and sufficiently deep to allow for the rootball to sit directly upon undisturbed soil. Backfill material for all pits shall consist of the existing material (loam) as excavated from the pit.

D. Plants shall be set in center of pits plumb and straight and at such a level that after settlement, the crown of the plant ball will be at the surrounding finished grade.

E. All burlap, rope, wire and similar materials shall be removed from the plants and disposed of off-site.

F. Backfilling Plants

1. When balled and burlapped plants are set, loam shall be tamped lightly. Loam shall not be packed so firmly as to drive out all the fine air spaces needed for a well aerated soil. All burlap, ropes or wires shall be removed from the top 1/3 of the balls.

2. Loam shall be backfilled in layers of not more than 9-in and each layer watered sufficiently to settle before the next layer is put in place.

3. To complete backfilling, ensure that trunk flare is completely exposed and that the top of the rootball is not covered with loam. Immediately after the plant pit is backfilled, a saucer or shallow basin slightly larger than pit shall be formed with a ridge of soil to facilitate and contain watering.

4. Remove and dispose of containers prior to planting.
   a. To encourage immediate root development, the outer one-half inch of the root ball shall be gently loosened.
   b. When shrubs are set, loam shall be tamped lightly. Loam shall not be packed so firmly as to drive out all the fine air spaces needed for a well aerated soil.

3.04 PRUNING

A. Each plant shall be pruned at the time of planting in accordance with ISA Standards.

B. Pruning shall be done with clean, sharp tools.

3.05 OBSTRUCTIONS BELOW GROUND

A. In the event that underground boulders or obstructions are encountered in any pit excavation work under this Contract, alternate locations may be selected by the Engineer and plants shall be installed therein.

3.06 WATERING

A. Plantings shall be flooded with water twice within the first 24 hours of the time of planting.

B. Apply water at an average rate of 1-in per week.

C. Irrigation water for planting and maintenance shall be provided by the Contractor and shall be free from ingredients harmful to plant life. The Contractor shall furnish his/her own hose and hose connections or other watering equipment.

3.07 MAINTENANCE

A. Maintenance shall begin immediately after areas are planted and seeded and shall continue throughout the warranty period as specified in Paragraph 1.06 until substantial completion. After areas are planted and seeded, the Contractor shall request an inspection of the work by the Engineer. At this inspection, areas will be defined by the Engineer as "approved" or "not approved." Areas noted as "approved" shall show active growth. Areas noted as "not approved" are subject to immediate correction by the Contractor at no additional cost to the Owner.

B. Corrective measures shall include reseeding, removal of dead plants, and replacement within new plants, watering, weeding and fertilizing.

C. Except for mowing, which is not to be performed in areas, with Seed Mix D, maintenance and watering shall be in accordance with Section 02930.

D. Funds shall be retained for plant maintenance during warranty and for replacement of any non-living plants, as specified herein.

3.08 INSPECTION

A. The Engineer will provide a Professional Wetland Scientist (PWS) to inspect all work performed under this Section. The inspection shall comply with requirements of the Orders of Conditions and 310 CMR 10.55(4)(b)(1-7). Based on the findings of the inspection, the Contractor shall immediately correct all Work not in accordance with the above standards, at no additional cost to the Owner.

END OF SECTION